Soil and Peat Management Plan

Mynydd Maen Wind Farm

Renewable Energy Systems Ltd

Beaufort Court, Egg Farm Lane Station Road, Kings Langley, Hertfordshire, WD4 8LR.

Prepared by:

SLR Consulting Limited

Suite 223ab, 4 Redheughs Rigg Westpoint, South
Gyle, Edinburgh EH12 9DQ

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Basis of Report

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1.0 Introduction

1.1 General

SLR Consulting Ltd (SLR) was commissioned by Renewable Energy Systems Ltd (RES – "The Applicant") to undertake a Soil and Peat Management Plan (SPMP) for Mynydd Maen Wind Farm (the "Proposed Development").

The Proposed Development is situated between Newbridge and Cwmbran, south of the A472 highway, partly in Caerphilly County Borough and partly in Torfaen County Borough located approximately 23km northeast of Cardiff and is centred at National Grid Reference (NGR) ST 25866 98059.

The location and layout of the Proposed Development are detailed on **Figure 1** and **Figure 2**.

1.2 Proposed Development

The Proposed Development will comprise an onshore wind farm comprising the following key components;

- Thirteen wind turbines;
- Associated turbine foundations and temporary and permanent hardstanding areas
- Access tracks and watercourse crossings;
- One on-site substation;
- One temporary site construction compound; and
- Three borrow pits.

1.3 Scope of Assessment

Following the submission of the Environmental Statement[1] (ES) for the Proposed Development , pre application responses were then received from National Resources Wales (NRW)[2] and the Soil Policy & Agricultural Land Use Planning Unit[3].

This report should be considered as further information to support the ES[1] and provide supporting information to address these responses[2,3].

Multiple phases of site reconnaissance, soil and peat probing and intrusive investigations (hand pitting, trial pitting, drilling) have been completed at the Proposed Development.

This SPMP report uses this information and provides details on the extents of soils and peat within the Proposed Development and details how the design evolution has avoided areas of peat soils where possible and provides indicative volumes for soils and peaty soil excavations and outlines recommendations for the handling, re-use and storage of soils and peat during construction and operation of the Proposed Development. The SPMP is required to ensure soils and peat are afforded protection to minimize potential impacts to these resources.

1 https://www.mynyddmaen-windfarm.co.uk/dns-application/

2 National Resource Wales. Statutory Pre Application Consultation Response. Mynydd Maen Wind Farm. March 2024. Ref CAS-248286-T3Z5.

3 Pre-application consultation response under article 10(2) of the Developments of National Significance (Procedure) (Wales) Order 2016 - Proposed Mynydd Maen Wind Farm – DNS/3276725

This report uses the principles detailed in the National Peatland Action Programme[4] to define a what is classified as a peat soil. Therefore, areas of the Proposed Development where soils fall under the following criteria are not deemed to be peat:

- Less than 0.4m thick; or
- 0.3m thick and underlain by either bedrock or extremely stony material.

Areas within the Proposed Development that have been proven to have depths of 0.4m or less are therefore not considered as peat soils within the scope of this SPMP, as detailed further in Section 3.7.2.

The purpose of this report is to ensure that there has been systematic consideration of soil and peat soil management and to provide an initial quantitative assessment to guide the development process. Specifically, the report is intended to:

- Describe how, through site investigation and iterative design, the Proposed Development has been structured and designed to minimise, as far as reasonably practicable, the quantity of peat soils which will be extracted;
- Demonstrate that volumes of soils and peat soils anticipated to be excavated by the Proposed Development have been considered; and
- Explain how excavated soils will be managed.

1.4 Legislation, Guidance and Good Practice

1.4.1 Policy and Legislation

Legislation relevant to the management of peat includes the following:

- Future Wales: The National Plan 2040 (2021), Welsh Government;
- Planning Policy Wales (PPW), Edition 11 (2021), Welsh Government;
- Planning Policy Wales (PPW), Addressing the Nature Emergency through the Planning System: Updated National Planning Policy for Chapter 6 of Planning Policy Wales. (2023), Welsh Government.
- Natural Resources Policy (2017), Welsh Government;
- The UK Climate Change Act 2008 (c27);
- The Waste (England and Wales) Regulations 2011; and
- Environmental Protection Act 1990 (as amended).

Legislation in place in Scotland has also been referenced for consideration of best practice:

- Landfill (Scotland) Regulations 2003 (as amended);
- The Waste Management Licensing (Scotland) Regulations 2011; and
- Scottish Planning Policy (2014).

1.4.2 Guidance and Good Practice

The Welsh Government's ambition is that by 2030, renewable sources generate the equivalent of 70% of Wales' energy consumption. New planning applications should consider the carbon cost of constructing a wind farm development with the carbon savings attributable to the wind farm in the long term. When constructing a wind farm on or adjacent

4 https://cdn.cyfoethnaturiol.cymru/media/692545/national-peatlands-action-programme.pdf

to peatlands, it is required that good management practice and guidance would be followed to avoid significant losses of carbon.

Legislation relating to peat environments in Wales is detailed above however, there is no specific guidance relating to the construction of wind farms on areas of peat. A combination of Welsh and Scottish best practice guidance has therefore been used to inform the site layout and SPMP. The SPMP has been undertaken in accordance with this guidance, which is sourced from Scottish Government and the Scottish Environment Protection Agency (SEPA), with relevant reference to Welsh Government policy and guidance throughout.

There are several guidance documents appropriate to the activities planned on site which have been used to guide this assessment, including as follows:

- Scottish Government, Scottish Natural Heritage (SNH), SEPA (2017) Peatland Survey. Guidance on Developments on Peatland, on-line version only;
- Scottish Renewables (SR), SEPA (2012), Guidance on the assessment of peat volumes, re-use of excavated peat and the minimisation of waste;
- SEPA (May 2017), SEPA Regulatory Position Statement – Developments on Peat and Off-Site Uses of Waste Peat, SEPA Guidance, WST-G-052, Version 1;
- SR, SNH, SEPA, Forestry Commission Scotland (FCS), Historic Environment Scotland (HES), Marine Scotland Science (2019), Good practice during wind farm construction, 4th Edition;
- SNH, FCS (2010), Floating roads on peat;
- SNH (2015), Constructed Tracks in the Scottish Uplands;
- SEPA (2011), Restoration techniques using peat spoil from construction works;
- Countryside Council for Wales (CCW) (2010), Guidance Note: Assessing the Impact of Windfarm Development on Peatlands in Wales; and
- NRW, Peatlands learning resource accessed on NRW's website via: https://naturalresources.wales/guidance-and-advice/business-sectors/education-learning-and-skills/looking-for-learning-resources/learning-resources-search-by-topic/peatland-bogs/?lang=en.

2.0 Methodology

The SPMP considers the excavation of soils and peat soils across the Proposed Development as a result of construction of the Proposed Development.

Evolution of the layout for the Proposed Development has taken into consideration the results of multiple phases of peat depth probing and intrusive investigations detailed in Section 3.0 and the aspects of the layout have been altered to avoid areas of peat within the Proposed Development subject to other constraints which are further detailed in the Design and Access statement[5].

The SPMP considers the potential for minimising excavation and disturbance in order to reduce any unnecessary surplus of peat soils.

2.1 Design Principles

SEPA has provided a hierarchy of management approaches through which the effectiveness of the approach to peat management is optimised at development sites on peatland, as summarised below. The SEPA guidance can be considered applicable in peatland contexts outside Scotland and the good practice detailed in this SPMP can also apply to the protection of carbon rich soils (peaty soils) which do not meet the definition of peat (peat soils).

The objectives have been achieved by completion of the following and this terminology has been used throughout the report where applicable:

- **Prevention**: The best management option for waste peat is to prevent or limit its production. This can be done by avoidance through design, positioning infrastructure in shallower peat or through consideration of alternative construction methods or engineering solutions e.g., floated roads or piling solutions;
- **Reinstatement**: Placement of peat back into the original location of excavation; e.g., reinstatement of temporary hardstanding areas / temporary compounds and temporary excavations;
- **Reuse** (onsite): Using excavated peat in construction away from the original location of excavation e.g., reuse for visual tie-in of verges or reuse in borrow pits to form long-term viable peat stores and potential habitats;
- **Restoration**: onsite or offsite use for peatland restoration;
- **Recycling/Recovery/Treatment**: Where peat cannot be reused onsite or offsite for restoration, it may be used for agricultural benefit or treated/blended with other materials to form a soil substitute or used in other relevant works. This use would require a waste management license or registration as an exempt activity and compliance with the legal requirements;
- **Storage**: Temporary storage of peat onsite (for example, during short periods in the construction phase) and then reuse or reinstatement. Should the peat become unsuitable for reuse or reinstatement during storage, it would be classed as a waste material;
- **Disposal** (Waste): Only after all other options have been explored and discounted would this option be considered.

Three main stages within the development process are defined within the guidance and describe what data should be gathered and assessed to inform the site specific SPMP:

- Stage 1: Environmental Impact Assessment (EIA);
- Stage 2: Post-consent/pre-construction; and

5 https://www.mynyddmaen-windfarm.co.uk/media/2644174/02-design-evolution-and-alternatives.pdf

- Stage 3: Construction.

In line with the guidance detailed above, this report has been prepared in accordance with the requirements for a Stage 1 SPMP. A detailed SPMP would be prepared post-consent, in advance of construction and would be informed by detailed ground investigation.

This report presents site-specific data and proposals to address the requirements of good practice guidance and proposes that **prevention** and **re-use and/ or reinstatement** are the most appropriate means of managing soils and peat excavated during construction at this site. Some temporary **storage** will be considered for any peat not re-used in reinstatement of temporary construction areas or prior to re-use and / or reinstatement.

This report details the methodologies required to assess all potential surplus materials and presents preliminary estimates of the expected volume of excavated materials and required re-use volumes for reuse and reinstatement purposes.

The initial estimate of soils and peat to be excavated is considered to be a reliable estimate. Unless indicated otherwise, all areas of the site where infrastructure is situated on soils and peat with a probe depth of greater than 0.4m is considered to be peat within this report. In reality these areas will be a combination of mineral soils and peat. Further refinement of initial calculations within this report will be carried out following post-consent ground investigations.

In particular, this report considers the construction of access tracks, site compounds, turbine foundations and all other associated infrastructure which would result in the excavation of soil, peat, and substrate, potentially resulting in surplus materials.

Many of the issues associated with peat on a wind farm site can be accommodated by modifying the development layout to avoid potentially difficult or sensitive areas. Such areas would include:

- Areas of deep peat, requiring potentially large volumes of excavation;
- Areas of very wet peat (such as flushes, pool and hummock complexes and gullied peatland) which might be important for hydrological connectivity;
- Areas of moderate to steep slopes (where site infrastructure might increase the chance of peat instability); and
- Areas of sensitive habitat.

Design evolution for the Proposed Development has taken all the above points into consideration and the layout of infrastructure has been revised accordingly.

The aim of the Stage 1 SPMP is to ensure that there has been systematic consideration of soil and peat management and that a quantitative assessment takes place throughout the development process.

- How, through site investigation and iterative design, the Proposed Development has been structured and designed to minimise, as far as reasonably practicable, the quantity of peat which will be extracted;
- That volumes of soils and peat anticipated to be excavated by the Proposed Development have been considered; and
- How excavated soil and peat will be managed.

3.0 Baseline Conditions

3.1 Topography

Based on the digital terrain model available from the BGS Geoindex, the topography across the Proposed Development consists of several high plateaus surrounded by steep slopes. Four peaks are named across the Proposed Development and are listed from north to south below:

- Twyn Calch (459 mAOD)
- Mynydd Llwyd (488 mAOD)
- Mynydd Twyn-glas (472 mAOD)
- Mynydd Maen (459 mAOD)

The four peaks make up a high plateau area ranging from 488 to 450 mAOD, which is surrounded by steeply descending slopes. The lowest elevation across the Proposed Development is situated in the west at approximately 360 mAOD.

3.2 Geology

3.2.1 Soils

Across the majority of the Proposed Development is very acid loamy upland soils with a wet peaty surface. Freely draining acid loamy soils over rock are present located on the margins of the proposed development boundary.

3.2.2 Peat

Review of the Peatlands of Wales mapping[6] for evidence of Peatland at the Proposed Development indicates areas in the central and southern areas of the Proposed Development with a level of confidence of 1 indicating that there is existing data which may indicate potential peat within the Proposed Development but at the lowest level of confidence.

A peatland evidence score defines the level of confidence in the presence of peat in any given grid cell, with those cells scoring more than 2 on this scale of 1-10, captured in the 'Peatlands of Wales' peat distribution map[7].

Review of the Peatlands of Wales mapping indicates that there is one area of localised mapped peat deposits within the Proposed Development.

The mapped peat deposits are present at the following locations within the Proposed Development;

- To the southeast of Mynydd Maen at a depth of 100cm.

This isolated pocket of peat is illustrated on the mapping in the southern area of the Proposed Development to the east of Turbine 12.

6 https://datamap.gov.wales/maps/peatlands-of-wales-maps/view#/

7 https://www.gov.wales/production-peatlands-wales-map

3.2.3 Superficial Geology

Limited superficial deposits are reported by the British Geological Survey (BGS) across most of the Proposed Development with Quaternary Head deposits (clay, silt, sand, and gravel) present in the southeastern extent of the Proposed Development.

3.2.4 Bedrock

Sandstone of the Hughes Member underlies the majority of the Proposed Development. The Rhondda Member comprising sandstone is located underlying the Proposed Development on the eastern margins.

Table 3-1: Bedrock Geology Summary

Age	Stratigraphic Group	Unit	Description
Carboniferous (358.9 – 298.9 Ma)	Pennant Sandstone Formation	Hughes Member	Sandstone with mudstone/siltstone and seat earth interbeds, mainly thin coals
		Rhondda Member	Sandstone

The Proposed Development is underlain by coal measures and the local area has been extensively mined with several mine entries present on and adjacent to the Proposed Development.

3.3 Hydrology

The Proposed Development is located within an area of five different catchment areas, listed below:

- Cwm Y Glyn;
- Cwm Lickey Pond;
- Nant Gwyddon;
- Blaen Bran Reservoir; and
- Nant Carn.

The nature of the topography of the Proposed Development results in draining in most directions. One stream drains to the north, into the Cym Y Glyn. To the east, streams drain into the Cwm Lickey and the Blaen Bran Reservoir. Tributaries drain to the south into the Nant Carn which flows to the southwest. To the west tributaries drain into the Nant Gwyddon which also flows in the southwestern direction. The Nant Gwyddon and Nant Carn both flow into the Ebbw River, which flows into the River Usk and into the Bristol Channel. The hydrology is illustrated on the RES drawing 04412-RES-STE-DR-PT-001, produced as part of the EIA submission.

3.4 Hydrogeology

The Proposed Development is underlain by a secondary aquifer. Permeable layers can support water supplies at local rather than strategic scales. In some cases, these aquifers do provide an important source of base flow to rivers. The hydrogeology is illustrated on the RES drawing 04412-RES-STE-DR-PT-002, produced as part of the EIA submission.

3.5 Previous Investigations and Assessments

RSK Geosciences completed four trial pits and four boreholes between the 7th and 9th of July 2023. The information in the following sections details the ground conditions encountered during the borehole and trial pit site investigations to support the Coal Mining Risk Assessment for the Proposed Development[8].

3.5.1 Ground Conditions

Table 3-2 Trial Pit Summary[8]

Ground Type	Strata	Description	Depth Range (mAOD)	Average Thickness (m)
Soil	Peat	Dark brown/black spongy, plastic to firm sandy amorphous PEAT contains frequent roots.	0.00 – 0.35	0.30
Superficial Deposits	Cohesive	Soft brown sandy CLAY. Sand is fine to coarse.	0.30 – 0.50	0.20
	Granular	Brown clayey fine to coarse SAND	0.30 – 0.60	0.20
Weathered Bedrock	Weathered Hughes Member	Brown and yellowish-brown mottled orange and greenish grey fine to coarse SAND incorporating gravel and cobble sized clasts. Gravel and cobbles are sub-angular to sub-angular fine to coarse sandstone. Yellowish brown slightly clayey sandy angular to sub-angular fine to course GRAVEL of sandstone. Frequent cobbles of sandstone present. Sand is fine to coarse. Greenish grey sandy gravelly COBBLES of sandstone. Infrequent boulders present.	0.20 – 2.50	1.75

All trial pits were terminated on the bedrock.

Table 3-3 Borehole Summary[8]

Ground Type	Strata	Description	Depth Range (mAOD)	Average Thickness (m)
Soil	Peat	Grass/moss over dark brown/black firm sandy/plastic/sponges amorphous peat with rootlets.	0.00 – 0.60	0.32
Weathered Bedrock	Hughes Beds – Upper Pennant Measures	Soft orange/brown slightly gravelly slightly sandy/sandy silty CLAY. Gravel is angular fine to coarse sandstone. Sand is fine to coarse.	0.20 – 2.20	1.30

8 technical-appendix-92-coal-mining-risk-assessment.pdf (mynyddmaen-windfarm.co.uk)

Ground Type	Strata	Description	Depth Range (mAOD)	Average Thickness (m)
		Highly weather greyish brown SANDSTONE. Sand is fine to coarse. Orange brown silty clayey angular fine to coarse GRAVEL of sandstone. Yellowish brown mottled greenish grey fine to coarse SAND. Gravel is sub-angular fine to coarse sandstone.		
Bedrock	Hughes Beds – Upper Pennant Measures	Grey/Greyish brown SANDSTONE.	1.00 – 20.00	>18.60 (depth no proven)

3.5.2 Groundwater Observations

All four trial pits recorded soil descriptions of peat soils to a maximum depth of 0.35m and were underlain by superficial deposits comprising mineral soils of clayey sand or sandy clay. The superficial deposits were underlain by weathered sandstone bedrock at all locations.

The four borehole locations recorded soils descriptions were consistent with the trial pits with peat soils overlying weathered bedrock reported as predominantly comprising sandy silty clay.

No indications of groundwater were recorded within the shallow superficial soils during advancement of the hand pits for three of the four boreholes with one location recording a groundwater seepage at the base of the peat soils in the northern area of the Proposed Development at T3.

No evidence of groundwater was observed within the shallow superficial soils during the trial pitting.

3.6 Definitions of Peat

Peat is defined as an organic soil consisting of the partially decomposed remains of plant material and organic matter preserved over a period of time in a waterlogged environment. In peatland areas, when surface vegetation dies, it does not decay completely as the remains become waterlogged due to regular rainfall. The effect of waterlogging is to exclude air, creating anaerobic conditions which limit the degree of decomposition. Consequently, instead of decaying to carbon dioxide and water, the partially decomposed material is incorporated into the underlying material and the peat is formed in-situ over time.

National Resources Wales (NRW) defines peat soils in line with the Soil Survey of England and Wales definition which is confirmed within NRW's National Peatland Action Programme[9]. This includes transitioning peaty soils integral to the hydrological functioning of wider peat bodies.

Peat soils are defined as soils with:

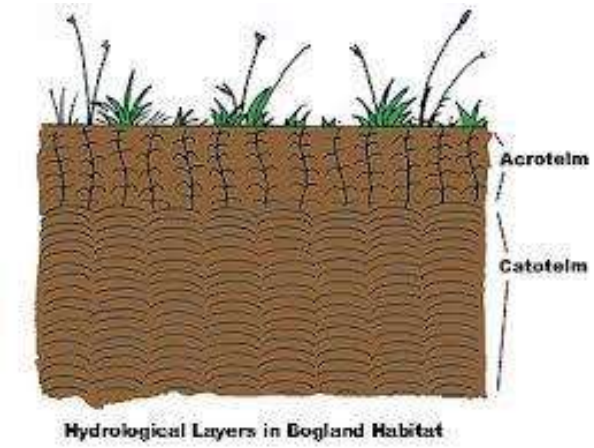
9 National Peatland Action Programme 2020-2025, NRW, 2020

- more than 40cm of organic material within the upper 80cm, excluding fresh litter and living moss; or
- more than 30cm of organic material resting directly on the bedrock or extremely stony material; and
- no overlying non-humose material mineral horizon that has a colour value of 4 or more and extends below 30cm depth.

Deep peat is applied to peats of 0.3m/0.4m based on the definition above.

Peat can be classed as two principal types, the acrotelm layer, and the catotelm layer as shown on Plate 1 and described in the following paragraphs.

Plate 1 Hydrological Layers in Bogland Habitat



The acrotelm layer is found in the upper layer of peat where conditions are drier and comprises living vegetation and partially decomposed plant material. Hydraulic conductivity in this layer tends to be higher in relation to distance from the water table.

The thickness of the acrotelm layer varies depending on topography such as steepness of slope, peat hags, and hummocks. In particular, the acrotelm layer can be affected during periods of drought or as a consequence of drainage. Fibrous in texture, the acrotelm layer has some tensile strength and is considered to be stable for storage and re-use.

The catotelm layer is found under the acrotelm layer and comprises decayed plant material and organisms and is denser and with a very low hydraulic conductivity. The catotelm layer sits below the water table resulting in permanent anaerobic conditions. The catotelm layer is amorphous and has very low tensile strength making it less suitable for storage, reinstatement, and reuse.

3.7 Peat Surveys and Investigations

Based on the potential presence of peat within the Proposed Development, peat depth surveys were undertaken to inform the design of the infrastructure layout, with development located away from areas with of peat where achievable.

Surveys were conducted in November 2021, March 2023, September 2023, and April to May 2024.

The works comprised Phase 1 peat probing resulted in probing on a 100m grid to allow for initial assessment of the Proposed Development which was used in preliminary site layout designs. Further phases of Phase 2 probing saw detailed probing undertaken across the Proposed Development, focussing on access tracks, turbine locations and other site infrastructure.

The thickness of the peat was assessed using a graduated peat probe, approximately 6 mm diameter and capable of probing depths of up to 10m. This was pushed vertically into the peat to refusal and the depth recorded, together with a unique location number and the co-ordinates from a handheld Global Positioning System instrument (GPS). The accuracy of the GPS was quoted as ±2m, which was considered sufficiently accurate for this survey. All data was uploaded into a GIS (Geographic Information System) database for incorporation into various drawings and analysis assessments.

Where the peat probing met refusal on a hard substrate, the 'feel' of the refusal can provide an insight into the nature of the substrate. An assessment of the substrate was made and recorded at each probe hole. The following criteria were used to assess material:

- Solid and abrupt refusal – rock;
- Solid but less abrupt refusal with grinding or crunching sound – sand or gravel or weathered rock;
- Rapid and firm refusal – clay; or
- Gradual refusal – dense peat or soft clay.

The relative stiffness of the peat was also assessed from the resistance to penetration of the probe and to the effort required to extract the probes (retrieval of the probe was often impossible for one person). In all instances refusal was met on obstructions allowing identification of subsurface geology.

The results of the probing survey are detailed within **Figure 3** with a summary of peat depths included within Table 3-4 below.

Table 3-4 Peat Probe Data

Peat Thickness (m)	No. of Probes*	Percentage (of total probes undertaken on-site)
0 (no peat)	37	0.9
>0-0.29	3017	76.3
>0.30-0.40	585	14.8
>0.40-1.00	312	7.9
>1.00-1.50	4	0.1
>1.50-2.00	1	0.03
>2.00-2.50	0	0.0
>2.50 -3.00	0	0.0
>3.00 - 3.50	0	0.0
>3.5 +	0	0.0

*includes SLR hand pit and auger locations

3.7.1 Peat Investigation Summary

SLR undertook a programme of hand pitting and soil augering to confirm the ground conditions and validate the peat depth probing. Peat Augers were targeted at areas of deeper soils and peat to characterise these areas with the hand pits focused on infrastructure footprints to validate the results of the peat probing and confirm the absence of peat soils at these locations.

SLR undertook the following intrusive works;

- 14 Peat Augers
- 22 No of Hand Pits

The Peat Auger and Hand Pit locations are shown along with the results of the peat probing provided in **Figure 3** and **Figure 4**.

The Peat Auger and Hand Pit logs and photographs are provided in Annex A.

3.7.1.1 Hand Pits

The hand pits confirmed the presence of organic soils with darker peaty soil horizons underlain by a thin horizon of softer silts, clays, and sand. Based on these softer mineral sediments underlying the soils and peaty horizons that the peat probing has overestimated the depths recorded during probing and therefore peat probe depths recorded are considered conservative.

Soils with a peaty organic horizon over mineral soil are often referred to as 'peaty' soils. These organo-mineral soils are extensive across the UK uplands, but do not meet recognised definitions of peat as they are either shallower than true peat or have a lower carbon density.

3.7.1.2 Peat Condition

Peat is described using BS5930[10] and the von Post classification[11]. Fourteen auger locations were advanced by SLR, using a peat auger, and used to inform interpretations of the soil and peat condition and underlying substrate.

Based on interpretations from probing and peat core samples, the soils within the Proposed Development are typically organo-mineral soils with some peaty horizons and localised deposits of peat in areas of flatter topography.

Based on field descriptions at augering points which recorded peat, most of the peat is fibrous and would be classified as between H1 and H4 in the von Post classification, showing insignificant to moderate decomposition.

3.7.1.3 Substrate

Where possible, in the SLR investigation, an assessment of the substrate was made, as described previously. From the evidence of the probing and sampling where available, the substrate falls into the following category:

- Granular (sand, silt, clay underlain by gravel/weathered rock), of glacial or bedrock origin.

3.7.2 Soil and Peat Depth Definition

Based on the definitions of peat detailed within Section 3.6 and review of the available site-specific investigation data a depth of 0.4m is considered appropriate for use in classifying peat soils at the Proposed Development due to the presence of silt, sands and clays and clear and established soil structure underlying the 'peaty' soils and peat. The depths presented are considered conservative as peat probing is likely to have overestimated peat depths in some areas. This is due to the presence of softer mineral soils comprising silts and clays which underlie the peat and organic rich soils and are difficult to disaggregate from peat soils by probing alone.

10 BS 5930:2015+A1:2020, Code of practice for ground investigations

11 Von Post, L. and Grunland, E., (1926), 'Sodra Sveriges torvillganger 1' Sverges Geol. Unders. Avh., C335, 1-127.

3.8 Recorded Peat Extents

From the review of peat depth data and investigation data, peat soils (>0.4m) of wider extents (i.e. with multiple peat depths >0.4m) have been identified at the Proposed Development but are localised within the following areas;

- Area north, east and west and adjacent to T1.
- Area north and west and adjacent to T2.
- Area north and west and adjacent to T3.
- Area north of T4.
- Area north and west and adjacent to T7.
- Area south, west and adjacent to T8
- Area south east, west and adjacent to T11
- Area of peat east of T12.
- Area south and adjacent to T13

3.8.1 Peat Hydrology and Hydrogeological Observations

The surface water receptors are detailed within the ES[12] and indicate limited surface water and drainage within the Proposed Development areas. The recent hand pitting works undertaken by SLR were typically recorded as dry indicating that the soils and peat are unsaturated with a very low water table which is consistent with previous observations[8] and previous assessments[13].

The previous assessments[13] which provide further detail on the peat hydrology indicate that based on the site conditions peat formation is limited and have confirmed that through implementation of appropriate mitigation measures impacts to peatland habitat can be avoided or minimized.

3.8.2 Peat Stability

Based on the avoidance of development within areas of peat within the Proposed Development and the implementation measures detailed in Section 5.0 there is a negligible to low risk of peat instability for the Proposed Development. As identified in Figures 03 and Figure 04, the areas of deeper peat are located on land with shallow / flat slopes and therefore where peat slide risk is negligible. Additionally, all proposed development is situated in areas where peat depths are less than 0.4m or on areas of no peat. A peat slide risk assessment is therefore not considered necessary.

3.9 Design Optimization and Peat Avoidance

As detailed in Section 1.3 the proposed development infrastructure should avoid peat as defined in the pre application consultation responses[2,3] within areas where peat is found.

For this assessment, a peat depth of 0.4m as detailed in Section 3.7.2 is considered appropriate. The Proposed Development has been designed to avoid areas of peat with depths greater than 0.4m where possible, considering other environmental and engineering constraints.

12 https://www.mynyddmaen-windfarm.co.uk/media/2644147/figure-91-drainage-catchment-areas-and-receptors.pdf

13 https://www.mynyddmaen-windfarm.co.uk/media/2644202/technical-appendix-95-ecohydrology-impact-assessment-remediation-on-gwdtes-peat.pdf

Where peat avoidance is not possible the mitigation measures as set out within this SPMP in Sections 5.0 should be adopted.

As shown below in Table 3-5 and Table 3-6 and **Figure 3** and **Figure 4** the locations have typically avoided peat soils >0.4m with all infrastructure located on peat/ soil depths of 0.26m or less.

Further detail regarding the average soil and peat depths in relation to proposed infrastructure is included in Annex B Excavated Materials Calculations.

Table 3-5 Peat Avoidance and Mitigation at Proposed Turbine Locations (Permanent and Temporary Hardstandings)

Turbine and Hardstanding No.	Avoidance	Average Peat / Soil Thickness (m) – Probing Data	SLR Investigation Locations
T1	T1 positioned to avoid peatland to the north and east.	0.13	HP6
T2	T2 positioned to avoid peatland to the north west and west.	0.13	HP7
T3	T3 positioned to avoid peat to the north, north and west. Where avoidance not possible the temporary hardstanding which will be reinstated has been positioned to minimize impact to peatland.	0.16	HP8
T4	T4 positioned to avoid peat to the north.	0.13	HP2, HP10
T5	T5 positioned to avoid peat to the north and south.	0.16	HP1, HP11
T6	Peat not present in footprint of infrastructure based on HP12 data, probe depths associated with softer mineral soils.	0.20	HP12
T7	T7 positioned to avoid peat to the west. Where avoidance not possible the temporary hardstanding which will be reinstated has been positioned to minimize impact to peatland.	0.12	HP13
T8	T8 positioned to avoid peatland to the north west and west. Peat >0.4m not present in footprint of infrastructure based on HP14 and TP8 data, probe depths associated with softer mineral soils underlying the peaty soils horizons.	0.26	HP14, Trial Pit T8
T9	T9 positioned to avoid peatland to the south. Peat >0.4m not present in footprint of infrastructure based on HP15 and HP16 data, probe depths associated with softer mineral soils underlying the peaty soils horizons.	0.16	HP15, HP16
T10	T10 positioned to avoid peat to the east. Peat >0.4m not present in footprint of infrastructure based on HP17 data, probe depths associated with softer mineral soils underlying the peaty soils horizons.	0.17	HP17

T11	T11 positioned to avoid peat to the south east and west. Where avoidance not possible the temporary hardstanding which will be reinstated has been positioned in areas of peat to minimize impact to peatland.	0.16	HP18, HP19
T12	T12 positioned to avoid peatland to the north east.	0.16	HP20
T13	T13 positioned to avoid peatland to the south.	0.15	HP21, HP22

Table 3-6 Peat Avoidance and Mitigation at Proposed Infrastructure (Permanent and Temporary Hardstandings)

Infrastructure	Avoidance	Average Peat / Soil Thickness (m) – Probing Data	SLR Investigation Locations
Borrow Pits	Positioned to avoid peat>0.4m where possible. Probe depths associated with softer mineral soils underlying the peaty soils horizons.	0.13	-
Access Track	Removed section of access track between T1 and T3 to avoid peat. Access track has avoided peat >0.4m where possible.	0.15	-
Temporary Construction Compound	Positioned to avoid peat>0.4m.	0.11	-
Substation	Substation positioned to avoid peat where possible. Probe depths associated with softer mineral soils underlying the peaty soils horizons. Position constrained by adjacent electrical infrastructure.	0.26	-

3.10 Soil and Peat Summary

In summary the peat depth probing, and investigations have shown that:

- The geomorphology of the peatland across much of the Proposed Development comprises thin soil deposits blanketing the steeper slopes and much of the gentler slopes with peat and peat soils localised within the plateaus with small, localised areas of thicker peat soils.
- Peat and soils thickness varies from zero to 1.6m across the site with an average depth of 0.2m;
- Based on the review of the hand pit and exploratory locations from previous investigations[8] the soils and peat soils are underlain by softer mineral sediments.
- There are limited peat deposits across the site with over 92% of probe and investigation locations identifying soil less than 0.4m in depth.
- The peat soils identified from the probing surveys and investigations undertaken by SLR identified the following profiles within and underlying the peat:
    - Soft from surface to the base of peat soils;

  - Firmer, vegetative root system at surface to approximately 0.25m (interpreted to be the maximum acrotelmic depth at the site, underlain by peat soil, then silt, clay, and sand.
  - Vegetation still present to base of peat and clearly identifiable; and
  - Peat generally not humified at depth.
  - Peat observed is fibrous.

- Based on the absence of groundwater observations within hand pits, the soils and peat are well drained, predominantly unsaturated with a very low water table within the majority of the Proposed Development.
- Peat forming habitat on most of the Proposed Development is limited to flatter topographic areas. The distribution of peat deposits as a series of discrete lobes indicates a degree of hydrological isolation with peat soil related to depressions in the underlying bedrock/substrate, (common within post glacial landscapes).
- The evidence from the soil profile indicates peat deposits represent the terrestrialisation of areas of standing water/puddling over time. As such it is expected that the catchment of such features would be highly localised and precipitation dependent. This is further evidenced by consistently low water tables and absence of groundwater during investigation, indicating a high dependence on seasonal changes in water balance and hyper-localised hydrology. This also explains the low abundance of peat soils elsewhere on the site.
- The proposed infrastructure is situated on land that is likely to comprise vegetation/turf and peaty soils underlain by mineral soil and over a thin horizon of silts and clays and weathered bedrock.
- Where excavation of peat soils is required, depths are generally less than 0.3m and likely to comprise acrotelmic peat. It is considered unlikely that there will be amorphous catotelmic peat excavated as part of the development proposals.

4.0 Potential Impacts on Soils and Peat from Construction Activities

The design process for development of the wind farm has minimised the potential for impact on peat and requirement for excavation of peat – while taking account of other constraints. This has been informed by desk study, walkover observations and targeted peat depth survey work.

The following activities are likely to generate excavation of soils and peat during the construction process:

- Wind turbine foundations;
- Crane hardstandings;
- Borrow pits;
- Substation and construction compounds;
- Access tracks; and
- Cable trenching.

4.1 Wind Turbines

Wind turbine foundations in peatlands would normally require full and permanent excavation of soils and peat to competent strata, with temporary excavation of peat from a wider diameter to enable safe access to the base of the excavation.

The resulting peat generated could be considered as a permanent loss unless satisfactory re-use could be achieved within the Proposed Development. Some of this soil and peat would normally be reused to partially reinstate track shoulders, around crane hardstandings and turbine bases, dependent on the suitability of excavated turf and acrotelmic peat and soils layers.

4.2 Crane Hardstandings

To assemble the wind turbine and enable servicing during operation, crane pads are constructed adjacent to each wind turbine. These must be sufficient to take the weight of both the crane and turbine components, and therefore excavation to underlying competent strata is required.

Crane pads must remain in place for the life of the Proposed Development to enable routine inspection and maintenance. Soil and peat generated from these excavations would be considered a permanent loss, unless satisfactory reuse could be achieved within the development, dependent on the suitability of excavated turf and acrotelmic peat and soils layers.

4.3 Substation and Temporary Construction Compound

Temporary compounds are provided during the construction phase to enable storage of construction materials, turbine components and fuel, concrete batching plant, siting of welfare facilities and site offices.

Should soil and peat be excavated during the construction of the proposed substation, this would be considered a permanent loss if it cannot be reinstated or reused onsite.

Due to their temporary nature, soils and peat excavated for compounds would normally be stored locally and then will be used to reinstate the temporary construction compound.

4.4 Access Tracks

Access tracks are required to enable passage of construction and servicing traffic around the Proposed Development. Over peatlands, the choice of access track design normally reflects the peat depths along the route, with shallow peat/organic soils <1.0m deep excavated to competent strata (cut and fill tracks), and deeper peats overlain by floating tracks (with no excavation). No floating tracks are anticipated as part of these development proposals as all access track is on soil and peat with depths less than 0.2m, and in most cases, less than this.

Access tracks are permanent infrastructure, soils and peat excavated for cut and fill would be considered a permanent loss, unless the soils and peat can be reused elsewhere within the Proposed Development.

In excavated tracks, the surface vegetation (i.e. habitat) would be lost unless stored and reused elsewhere, however the intention would be to reuse excavated turves on trackside verges and track shoulders and hardstandings to tie into adjacent habitats. Where areas of peat are identified, this would only be reused where the excavated acrotelm is already dry and where adjoining habitats to the area being restored is of the same dry habitat.

Access tracks have the potential to disrupt natural hydrological drainage pathways, appropriate drainage would be designed to mitigate this in accordance with previous assessments[13].

4.5 Cable Trenching

Electrical cabling is typically buried or ducted adjacent to the proposed access track network where practicable (cable trenching). The grid connection cable would similarly be buried or ducted within trenches along the final selected route. Where excavation is required for trenching, soils and peat generated from these works is normally reinstated at its point of origin, and therefore is not considered a volume loss and re-use for reinstatement is a certainty.

4.6 Borrow Pits

The Borrow Pit search areas have been selected to avoid peat soils where possible to avoid excavation and disturbance to peatland habitat and resource. The Borrow Pit search areas are located adjacent to areas of peatland and the final Borrow Pit locations would re-use surplus excavated soils and peat soils to undertake restoration of Borrow Pits to tie into existing habitats where possible.

5.0 Proposed Mitigation During Construction

There are four main types of impact on soils peat which can occur during construction. These are:

- Loss of structural integrity and peat strength, due to stripping off or damaging the surface vegetation turf, excavation, handling and transporting peat (particularly wet, subsurface peat);
- Erosion and gullying, caused by exposure and desiccation of bare soil and peat surfaces primarily caused by water erosion, due to surface runoff after rainfall;
- Contamination, caused by leaks, spillages, or inappropriate laydown of materials; and
- Soil and peat mass movements, caused by laying wet peat on top of wet peat, laying other heavy materials (including excavated mineral soil or other construction materials) on top of wet soils and peat or by inappropriate stockpiling, such as attempting to create stockpiles of soils and peat that are too high, without bunding, engineering or geotechnical support.

5.1 Development Specific Mitigation

There are several ways in which detailed design and construction activities can be specified to prevent or minimise these impacts from occurring. The following sections outline briefly the likely mitigation required to minimise impact, based on the re-use of soils and peat specific to key elements of the Proposed Development.

5.1.1 Specialist Contractor

As indicated above there are typically four main types of impact on peat which may occur during construction and a number of these can mitigated by using a specialist contractor who is experienced in undertaking construction in peatland areas. When combined with the support and guidance of an ECoW potential impacts to peat can be mitigated during the construction phase.

5.1.2 Wind Turbine Foundations

Wind turbine foundations represent permanent excavation, and the primary mitigation measure is to locate the wind turbines to avoid the areas of peat soils as detailed in Section 3.9, thereby reducing excavated volumes. Annex B details soil and peat depths in relation to proposed infrastructure.

5.1.3 Crane Hardstandings and Temporary Hardstands / Compounds

In relation to crane hardstanding, guidance is to avoid their full reinstatement post-construction, given the likelihood of re-use for maintenance activities associated with the wind turbines.

In relation to temporary compounds and areas of hardstands, the following good practice guidance applies:

- Soil and peat stripped from compound and hardstanding areas would not be stored higher than 1m and may require covering to prevent drying out, if stored for longer residence times;
- Stripped turves are used for final restoration, however where turves are insufficient or vegetation regeneration requires reseeding, temporary fencing may be considered around compound areas undergoing restoration to prevent grazing; and
- The choice of seed mix for reseeding should be appropriate to the ecological and hydrological conditions of the restored compound location and surrounding habitats and should be advised by the Ecological Clerk of works.

5.1.4 Access Tracks

In comparison to infrastructure specific to wind turbines, there is more guidance, as set out in Section 5.2.2 available to support access track design in peatlands. Guidance is focused on excavated and floating track designs and is summarised below.

For all types of track the following should be followed:

- Prior to construction works, the setting out the centreline of the proposed access track to identify any ground instability concerns or particularly wet zones;
- Identifying 'stop' rules, i.e. weather dependent criteria for cessation of access track construction based on local meteorological data; and
- Maximising the interval between material deliveries over newly constructed access tracks that are still observed to be within the primary consolidation phase.

The calculations at Annex B are based on an average depth of probing along the new excavated tracks. The average depth of probing is less than 0.2m, indicating that there is no peat along the track alignment.

5.1.4.1 Excavated Access Tracks

Excavated tracks require complete excavation of soil/peat to a competent substrate. Excavated tracks would be undertaken where peat depths are typically less than 1m. This peat/soil would require storage ahead of re-use elsewhere on site in line with storage guidance detailed in Section 5.2.2 which would ensure the integrity of the soil, that peat is retained and there is no peat loss.

Good practice guidance relating to drainage in association with excavated tracks:

- Trackside ditches should capture surface water (within the acrotelm) before it reaches the road;
- Interceptor drains should be shallow and flat bottomed (and preferably entirely within the acrotelm to limit drawdown of the water table);
- Any stripped soil and peat turves should be placed back in the invert and sides of the ditch to assist regeneration and prevent erosion to the soil and peat and wash out that could occur; and
- Culverts and cross drains should be installed under excavated tracks to maintain subsurface drainage pathways (such as natural hydrological pathways within peatland units (soil pipes or flushes)). Discharge from constructed drainage should allow for as much diffuse dispersion of clean (silt free) water as possible while minimising disturbance to existing peatland as far as possible. Silt mitigation measures will be incorporated into all constructed drainage.

Although excavation is normally undertaken in peat of minor thickness, there is a possibility of minor slippage from the cut face of the peat mass. Accordingly:

- Free faces should be inspected for evidence of instability (cracking, bulging, excessive discharge of water or sudden cessation in discharge); and
- Where significant depths of peat are to be stored adjacent to an excavation, stability analysis should be conducted to determine an acceptable factor of safety (FoS) adopted for loaded areas.

Regular routine monitoring should be scheduled post-construction to ensure that hydrological pathways and track integrity have been suitably maintained.

Use of Soil and Peat as Trackside Shoulders

Excavated soil will be reused on site for partial track shoulder reinstatement of constructed access tracks. Some limited reuse of peat for trackside verges can be considered using good practice at the margins of an access track under the following conditions:

- Peat is only re-used at the edges of tracks if:
  - there is valid need, and it provides an environmental benefit, e.g. reduces, or buffers runoff, encourages habitat restoration, stabilises verges, minimises visual impact;
  - re-used peat consists of turves and drier acrotelm peat only, which is anticipated on this site;
  - widths of reinstated verges are kept to a minimum, defined on a case-by-case basis, and be fully justified;
- Care should be taken when forming verges and landscaping with soil and peat so as not to over-deposit arisings to the detriment of the works. Therefore, low verges are used on the sides of the track to permit any surface water to drain naturally, and diffusely, where it arises;
- Reuse and reinstatement is only applied in stretches of low longitudinal track gradient (e.g. <5°) to ensure stability, with batters used to form stable slopes;
- Rapid revegetation of the soil and peat surface using stored turves or re-seeding is encouraged to stabilise the reuse and reinstated areas and minimise erosion;
- Buffer zones are maintained around surface water bodies where no soil/ peat reuse or reinstatement is carried out; and
- Verges may also be suitable locations for burying cables to avoid excavating cable trenches in undisturbed soil and peat material. If this is planned, then the verges should be constructed wider to accommodate the cabling.

Careful assessment and selection of peat by the ECoW to be used for reuse and reinstatement, in line with the guidelines set out above, will ensure that peat integrity is retained and there will be no loss of peat through this process.

5.1.5 Cable Trenches

Cable trenches either require soil/peat excavation specifically for this purpose, or they could be constructed within landscaping of shoulders adjacent to floating tracks. Guidance is as follows:

- Utilise trackside shoulders for cable lays where possible to minimise peat excavations specifically for this purpose,
- Minimise time between excavation of the cable trench and soil and peat reinstatement, preferably avoiding excavation until the electrical contractor has cables on-site ready for installation; and
- Avoid incorporating substrate materials in the excavation, to minimise contamination of the soils and peat to be reinstated. Replace excavated materials sequentially.

5.2 General Mitigation Measures

Where peat is to be re-used or reinstated with the intention that its supported habitat continues to be viable, the following general good practice for excavation, transport, and storage of peat, outlined below, applies.

5.2.1 Excavation

The acrotelmic (including the vegetated turves) layers of soils and peat should be recognised during excavation and reuse activities and stored separate to any catotelm peat

(if encountered) encountered during excavations. For excavation works the following good practice applies:

- Soils and peat should be excavated as turves, including the acrotelm (surface vegetation). Any adjoining catotelm (more humified peat) encountered will be stored as blocks of catotelm;
- The acrotelm should not be separated from its underlying peat;
- The turves should be as large as possible to minimise desiccation during storage, though the practicalities of handling should be considered;
- Contamination of excavated soils and peat with substrate materials to be avoided at all times through separate storage and transport; and
- Consider timing of excavation activities to avoid very wet weather and multiple handling to minimise the likelihood of excavated peat losing structural integrity.

If possible, extract intact full depth acrotelm layers from the top surface of the peat deposit. This technique would maintain connectivity between the surface vegetation and the partially decomposed upper layers of any catotelm present at lower levels.

5.2.2 Storage

Soil and peat storage will only be required where reinstatement or reuse is not immediately possible, and stored soils and peat should be reinstated at the end of the construction phase. Some temporary storage of peat for habitat restoration purposes may be required for slightly longer dependant on the proposed habitat restoration works.

Soil and peat storage residence times should be minimised by ensuring that the excavation and storage of soils and peat is considered at an early stage during the develop of the construction programme.

To ensure that the storage locations are suitable in terms of environment, construction practicality and safety, the precise location of temporary soil and peat stockpiles should be determined at a site level following consideration and assessment of suitable areas by the ECoW, geotechnical engineer and contractor using the guiding principles below:

- To minimise handling and haulage distances, excavated material should be stored local to the site of excavation or end point of reuse, reinstatement, or restoration;
- Soil and peat turves should be stored in wet conditions or irrigated to prevent desiccation (once dried, peat will not re-wet);
- Stockpiling of soil and peat should be in large volumes to minimise exposure to wind and sun (and desiccation), but with due consideration for slope stability (should not exceed 1m in height to maintain stability of stockpile);
- Stockpiles should be isolated from watercourses or surface drains with appropriate bunding to minimise pollution risks;
- Excavated peat and soil stored separately, should be stored to a maximum of 1m thickness;
- Stores of non-turf (catotelm) peat should be bladed off to reduce the surface area and desiccation of the stored peat; and
- Peat storage areas should be monitored during periods of very wet weather, or during snowmelt, to identify early signs of peat instability.

5.2.3 Temporary Storage around Infrastructure

Any peat soils to be removed during construction would require a temporary storage area near to the construction works/area of re-use. Where peat cannot be transferred immediately to an appropriate restoration area, short term storage will be required. In this case, the following good practice applies:

- Peat should be stored around the turbine perimeter at sufficient distance from the cut face to prevent overburden induced failure;
- Local gullies, diffuse drainage lines (or very wet ground) and locally steep slopes should be avoided for peat storage; and
- Drying of stored peat should be avoided by irrigation and/or by seeding (although this is unlikely to be an issue for peat materials stored less than two months).
- Any peat generated from crane pad locations should be transported directly to its allocated re-use or restoration location, to minimise the volume being stockpiled with the possibility of drying out;
- Stores of catotelmic peat (if encountered) should be bladed off to reduce their surface area and minimise desiccation;
- Where transport cannot be undertaken immediately, stored peat should be irrigated to limit drying and stored on a geotextile mat to promote stability; and
- Monitoring of large areas of peat storage during wet weather or snowmelt should be undertaken to identify any early signs of peat instability.

5.2.4 Transport

The following good practice applies to transport:

- Movement of turves should be kept to a minimum once excavated, and therefore it is preferable to transport peat planned for translocation and reinstatement to its destination at the time of excavation; and;
- If HGVs/dump trucks that are used for transporting non-peat material are also to be used for peat materials, measures should be taken to minimise cross-contamination of peat soils with other materials.

5.2.5 Handling

A detailed storage and handling plan would be provided as part of the detailed SPMP and should be prepared, including:

- Refined estimates for excavation volumes at each infrastructure location (including peat volumes split into area/volume of ‘acrotelm’ or ‘turf’ and volume of catotelm, if further ground investigations indicate any is present).
- Volume to be stored locally and volume to be transferred directly on excavation to restoration areas elsewhere (e.g. habitat restoration areas) to minimise handling;
- Location and size of storage area relative to turbine foundation, crane hardstanding and natural peat morphology / drainage features; and
- Irrigation requirements and methods to minimise desiccation of excavated peat during short term storage.

These parameters are best determined post-consent considering detailed ground investigation with the micro-siting areas for each element of infrastructure.

6.0 Site Based Peat Excavation and Management Assessment

This Stage 1 SPMP has been undertaken as part of the Environmental Impact Assessment Report for the Proposed Development to ensure that there is an understanding of the extent of peat on site, the total amount of soil and peat that might be excavated, a demonstration that the current design avoids areas peat where possible and that the reuse of the excavated materials is certain and minimised where possible, and in line with updated industry good practices and guidance.

The proposed development comprises thirteen wind turbines and associated crane hardstandings, access for construction traffic, on-site access tracks of cut construction (including upgrade to existing tracks), three borrow pits, temporary construction compound and permanent substation compound and underground cabling.

6.1 Estimated Soil and Peat Excavation and Re-use Volumes

Multiple phases of peat probing, and assessment have been undertaken by SLR. The results have been used to produce the Peat Depth Interpolation Plans provided in **Figure 3** and **Figure 4**.

A total of 3,956 probe locations were undertaken in areas of identified peaty soil/peat to determine the thickness thereof. Based on this mapping, the total predicted volume of excavated materials has been calculated, with estimates of reuse. These are summarised in Table 6-1 and detailed in Annex B.

Table 6-1 Peat Balance Assessment

Infrastructure	Volume of Peat/Peaty Soils Excavated (m^3)	Volume of Peat/Peaty Soils Reused and Reinstated (m^3)
New Access Track	5,971	6,369
Turbines - Permanent Hardstanding (Turbines and Crane Pads)	4,194	1,950
Turbines – Temporary Hardstanding (Laydown Areas)	6,921	6,921
Temporary Construction Compound	440	440
Substation Compound	2,345	157
Borrow Pits	6,999	15,274
Total	26,870	31,112

The total soil and peat volumes are based on a series of assumptions for the development and peat depth data averaged across discrete areas of the development. Such parameters can still vary over small scale and therefore topographic changes in the bedrock profile, historical ground disturbance etc. may impact the total accuracy of the volume calculations.

A calculation of the breakdown of the volumes of acrotelmic and catotelmic peat has been undertaken in Annex B. Based on site observations the acrotelm thickness of 0.3m has been used along with the average peat depth within the footprint of each area of infrastructure. The calculations indicate that excavated volumes of peat will be predominantly peaty soils/ acrotelmic peat.

Although there is anticipated to be very limited catotelmic peat excavated as part of the development, all material would be assessed by the ECoW on excavation and the live SPMP document would be revised where necessary should volumes of acrotelmic peat vary or areas of catotelmic peat be identified. The ECoW/Geotechnical engineer would also assess the suitability of material for reuse on excavation and update the SPMP accordingly if required.

The overall conclusion regarding peat stability is that there is negligible and low risk of peat instability across the Proposed Development.

6.1.1 Re-use of Soils and Peat

Excavated soils and peat from the construction process will be re-used in the following ways:

- Reinstatement of temporary infrastructure; and
- Appropriate reuse in areas of new infrastructure e.g. track sides, hardstanding edges, etc.; and
- Re-use in borrow pits for local habitat restoration.

7.0 Soil and Peat Excavation Considerations

This section of the stage 1 SPMP includes the method for dealing with catotelmic peat which could potentially be classified as waste. This is currently not anticipated as significant quantities of catotelmic peat, which cannot be re-used are not expected on site.

Based on the results presented in Table 7-1 it has been concluded that all the materials to be excavated on-site would fall within the non-waste classification as the soil and peaty soils would be re-used on site. Based on a detailed probing exercise and visual inspection of the peat, it is predominantly turves and fibrous peat which would be suitable to be re-used on site if good practice guidance is followed.

The excavated soils and peat are therefore considered to be entirely re-useable as it is predominantly fibrous and stable provided good practice guidance is followed for excavation, handling, and storage. This peat can be easily re-used on-site and there will be no loss of peat. The areas of peat identified during the probing have been avoided by design.

Table 7-1 Excavated Materials – Assessment of Suitability

Excavated Material	Indicative Volume on Site by % of total excavated soils	Is there a suitable use for material	Is the Material required for use on Site	Material Classified as Waste	Re-use Potential	Re-use on-site
Turf (Surface layer of vegetation and fibrous matt) soils / acrotelmic peat	95	Yes	Yes	Not classified as waste	Yes	Will be re-used in reinstatement of access track verges, cut, and fill verges, road verges, side slopes and check drains. Peripheral embankments of permanent hardstandings and reuse within borrow pits.
Catotelmic peat	05	Yes	Yes*	Not classified as waste	Yes	Will be re-used in reinstatement of access track verges, cut and fill verges, road verges, side slopes and check drains. Peripheral embankments of permanent hardstandings and reuse within borrow pits.
Amorphous Catotelmic Peat (amorphous material unable to stand unsupported	Not anticipated as it has been avoided by design.	Potentially	Potentially *	Potentially if not required as justifiable habitat creation in Borrow pits	Limited	If encountered may be suitable for habitat creation in borrow pits. If it is unsuitable for use without treatment, then it may be regarded as a

Excavated Material	Indicative Volume on Site by % of total excavated soils	Is there a suitable use for material	Is the Material required for use on Site	Material Classified as Waste	Re-use Potential	Re-use on-site
when stockpiled >1 m)						waste. However, every attempt to avoid this type of peat has been incorporated into the design.

8.0 Monitoring and Inspection

There would be frequent, routine, and regular inspections of peat in all temporary stockpiles and storage areas as part of the SPMP audit process. Inspections would assess in situ peat physical conditions, integrity of containment and temporary drainage conditions, and they would seek to confirm that stockpile design and management was adequate to prevent erosion and peat slide. These inspections would take place weekly (at a minimum) during stockpile creation and storage.

Should any problems be observed during regular visual inspections of peat stockpiles, this would invoke implementation of an appropriate corrective action which would be recorded and monitored for effectiveness. Types of corrective actions would include, but would not necessarily be limited to:

- modification of temporary drainage;
- additional or modified bunding;
- incorporating of sediment fencing if required; and
- light re-grading to correct any areas of surface erosion, etc.

Regular, frequent inspections of peat conditions during construction and borrow pit restoration phases of work would be carried out by the Geotechnical Engineer and ECoW as follows:

- Peat surface, peat profile and peat consistency conditions would be carried out as part of ground investigations prior to the start of construction. This information would provide detailed information on the baseline conditions for each part of the infrastructure footprint.
- Restored peat conditions would be inspected immediately after restoration to ensure that the methods detailed in the SPMP had been correctly implemented and to inform any corrective actions should they be required.
- The physical condition of peat would be retained as carefully as possible both at the peat storage and the peat restoration stages. This is particularly important for vegetation establishment.
- Within 3 months of completion of works in any area, the ECoW inspects the reuse and reinstatement efforts to determine satisfactory placement of sub-soil, topsoil, and turves.
- The ECoW (or other qualified person) undertakes a final inspection of all reuse and reinstated areas at the end of the first growing season following completion of reinstatement.
- The ECoW should complete a daily diary of onsite activities which would be compiled within a monthly ECoW report which will include information relating to peat reuse and reinstatement, these reports will be available at the request of the Planning Authority.

9.0 Conclusion

The outline SPMP follows the guiding principles and has been created in adherence with best practice guidance.

The SPMP addresses the following peat related issues:

- The depth and condition of peat deposits at site;
- The volumes of soils and peat that are predicted to be excavated and its suitability for reuse;
- The capacity to reuse the peat onsite;
- Peat handling and temporary storage; and
- Restoration and monitoring of peatland habitat.

The figures detailed within this report are to be considered indicative at this stage. The total peat volumes are based on a series of assumptions for the proposed development's layout and peat depth data averaged across discrete areas of the site. Such parameters can still vary over small scale and therefore topographic changes in the bedrock profile could impact the total accuracy of the volume calculations.

The accuracy of these predictions would be improved and updated with the results of further detailed peat probing data, to be carried out during refinement in accordance with guidance, as part of detailed ground investigation to be undertaken post-consent.

The figures shown in the tables suggest that most of the soil and peat excavated on-site would be re-used. Any surplus following reinstatement would be temporarily stored for re-use in future habitat restoration.

The proposed works are not anticipated to creating any materials which would require to be classified as waste. Post-consent, the Stage 1 SPMP would be updated with information obtained during detailed ground investigations and design stage.

These plans would be developed to support the CEMP (Construction Environmental Management Plan), with post-construction restoration plans. This would be reviewed and monitored along with the updated SPMP and CEMP to ensure compliance with method statements and to keep track of volumes.

Figures

Soil and Peat Management Plan

Mynydd Maen Wind Farm

Renewable Energy Systems Ltd

SLR Project No.: 428.013072.00001

17 June 2024

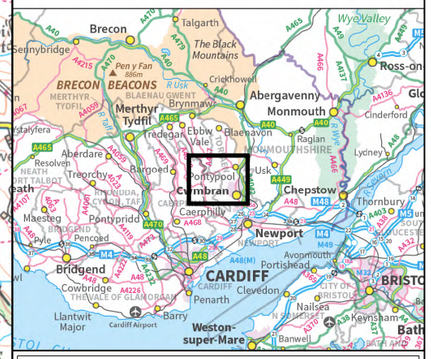
318500 322000 325500 329000

199500 196000 428.013072.00001.0015.0 Site Location

LEGEND

Site Boundary

N



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SLR

MYNYDD MAEN WIND FARM

SOIL & PEAT MANAGEMENT PLAN

SITE LOCATION

FIGURE 1

Scale 1:40,000 @ A3

Date MAY 2024

0 1 2 Kilometers

324000
325500
327000
199500
198000
196500

N

Cefn-Crib Farm
Ty Richard Jones' Farm
Cefn Crib Road
Tir-Shon-Shenkin
Crumlin Road
Old Washery
Coed Golynos
459 Twyn Calch
414 Ruarth Maen
A472
Hafodyrynys
Coed Llwyn-du
Coedcae Watkin Dafydd
Pen y Caeau Farm
Cwm Lleucu / Cwm Lickey
468 Mynydd Llwyn
Capel
Mynydd Twyn-glas
472
Little Greenmeadow Farm
Coed Gwaun-y-'ffeiriad
Mine Slope Cottage
Blaen-Bran
Upper Cwmbr
West Pc
Gelli-Gravog
Garn Wen Farm
Hafren Road
Cil-Lonydd
Nant Gwyddon-fach
459 Mynydd Maen
Nant Gwyddon
Coed Sara
Nant Carn
Shon-Farm
Blaengawney Farm

T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
T13

0
0.5
1
Kilometres

LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Watercourse Crossing
- Proposed Substation
- Proposed Temporary Construction Compound
- Proposed Borrow Pit Search Area
- Proposed Hardstanding
- Proposed Access Track

res

SLR

MYNYDD MAEN WIND FARM

SOIL & PEAT MANAGEMENT PLAN

SITE LAYOUT

FIGURE 2

Scale 1:15,000 @ A3

Date MAY 2024

428.013072.00001.0016.0 Site Layout

323500 324000 324500 325000 325500 326000 326500 327000 327500 328000

199000 198500 198000 197500 197000

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13

N

LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Watercourse Crossing
- Proposed Access Track
- Proposed Substation
- Proposed Temporary Construction Compound
- Proposed Borrow Pit Search Area
- Proposed Hardstanding
- Hand Pit Location
- Peat Auger Location
- Borehole Location
- Trial Pit Location
- Peat Probe Location

Peat Depth (m)

- 0 - 0.3
- > 0.3 - 0.4
- > 0.4 - 0.5
- > 0.5 - 1
- > 1 - 1.5
- > 1.5 - 2

Note:
All infrastructure symbology can be found on Figure 2.

res

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MYNYDD MAEN WIND FARM
SOIL & PEAT MANAGEMENT PLAN

PEAT DEPTH PLAN

FIGURE 3.1

Scale 1:15,000 @ A3

Date JUNE 2024

428.013072.00001.0017.0 Peat Depth

325000 325500 326000 326500

199000 198500

N

Twyn Calch
459m
Buarth Mawn
Mynydd Llwyd
468m
Cwm Lleucu / Cwm Lickey
Mynydd Maen
Ford
Track
Path
Mast
Collects
Spr
Sks
Iss

BH - T3
TP3
HP9
HP8
T3
T1
HP6
PA04
HP12
T6
HP7
T2
PA03
HP2
HP10
T4
HP11
HP1
T5
PA05
PA02
BH - T8
TP8
HP14
T8

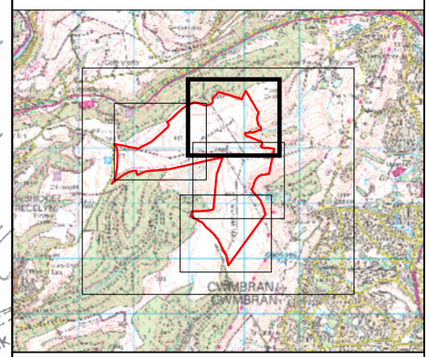
LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Watercourse Crossing
- Proposed Access Track
- Proposed Borrow Pit Search Area
- Proposed Hardstanding
- Hand Pit Location
- Peat Auger Location
- Borehole Location
- Trial Pit Location
- Peat Probe Location

Peat Depth (m)

- 0 - 0.3
- > 0.3 - 0.4
- > 0.4 - 0.5
- > 0.5 - 1

Note:
All infrastructure symbology can be found on Figure 2.



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SLR

MYNYDD MAEN WIND FARM
SOIL & PEAT MANAGEMENT PLAN

PEAT DEPTH PLAN

FIGURE 3.2

Scale 1:5,000 @ A3

Date JUNE 2024

428.013072.00001.0017.0 Peat Depth

324000 324500 325000

198500 198000

428.013072.00001.0017.0 Peat Depth

N

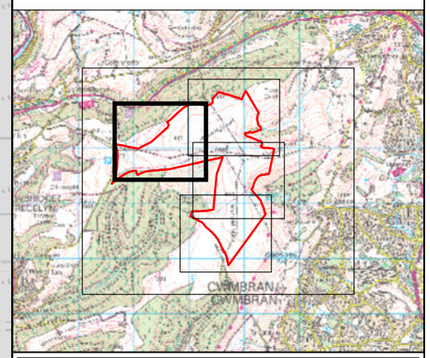
LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Watercourse Crossing
- Proposed Access Track
- Proposed Temporary Construction Compound
- Proposed Borrow Pit Search Area
- Proposed Hardstanding
- Hand Pit Location
- Peat Auger Location
- Borehole Location
- Trial Pit Location
- Peat Probe Location

Peat Depth (m)

- 0 - 0.3
- > 0.3 - 0.4
- > 0.4 - 0.5
- > 0.5 - 1

Note:
All infrastructure symbology can be found on Figure 2.



MYNYDD MAEN WIND FARM
SOIL & PEAT MANAGEMENT PLAN

PEAT DEPTH PLAN

FIGURE 3.3

Scale 1:5,000 @ A3

Date JUNE 2024

325500
326000
326500
198000
197500

HP16
HP15
T9
HP3
PA01
PA09
PA10
PA12
HP17
T10
HP19
PA11
HP18
T11
BH - T11
HP4
TP11

Mynydd Maen
472m
451m
459m
South Top
440m
Mast
Path
Track
Collects
Spr
Sprs
Iss
Sks
FB
Pit (dis)
Coed Gwern-E
Nant-Gwyddon
CWMBRAN
CWMBRAN

N

LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Proposed Access Track
- Proposed Substation
- Proposed Hardstanding
- Hand Pit Location
- Peat Auger Location
- Borehole Location
- Trial Pit Location
- Peat Probe Location

Peat Depth (m)

- 0 - 0.3
- > 0.3 - 0.4
- > 0.4 - 0.5
- > 0.5 - 1

Note:
All infrastructure symbology can be found on Figure 2.

res

SLR

MYNYDD MAEN WIND FARM
SOIL & PEAT MANAGEMENT PLAN

PEAT DEPTH PLAN

FIGURE 3.4

Scale	Date
1:5,000 @ A3	JUNE 2024

428.013072.00001.0017.0 Peat Depth

325000
325500
326000
326500
197000
196500

N

PA11
HP18
T11
BH - T11
TP11
HP4
HP20
T12
HP22
HP21
T13
HP5

South Top
459m

Fords
Track
Collects
Iss
Sks
Path

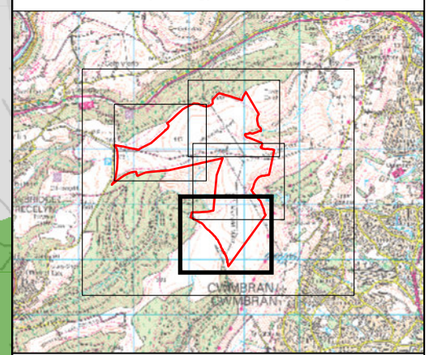
LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Proposed Access Track
- Proposed Hardstanding
- Hand Pit Location
- Peat Auger Location
- Borehole Location
- Trial Pit Location
- Peat Probe Location

Peat Depth (m)

- 0 - 0.3
- > 0.3 - 0.4
- > 0.4 - 0.5
- > 0.5 - 1
- > 1 - 1.5
- > 1.5 - 2

Note:
All infrastructure symbology can be found on Figure 2.



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SLR

MYNYDD MAEN WIND FARM
SOIL & PEAT MANAGEMENT PLAN

PEAT DEPTH PLAN

FIGURE 3.5

Scale 1:5,000 @ A3

Date JUNE 2024

428.013072.00001.0017.0 Peat Depth

323500 324000 324500 325000 325500 326000 326500 327000 327500 328000

199000 198500 198000 197500 197000

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13

N

LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Watercourse Crossing
- Proposed Access Track
- Proposed Substation
- Proposed Temporary Construction Compound
- Proposed Borrow Pit Search Area
- Proposed Hardstanding
- Hand Pit Location
- Peat Auger Location
- Borehole Location
- Trial Pit Location
- Peat Probe Location

Peat Depth (m)

- > 0.3 - 0.4
- > 0.4 - 0.5
- > 0.5 - 1
- > 1 - 1.5
- > 1.5 - 2

Note:
All infrastructure symbology can be found on Figure 2.

MYNYDD MAEN WIND FARM
SOIL & PEAT MANAGEMENT PLAN

PEAT DEPTH OVER 0.3 M

FIGURE 4.1

Scale 1:15,000 @ A3

Date JUNE 2024

428.013072.00001.0018.0 Peat Depth Over 0.3

325000 325500 326000 326500

199000 198500

428.013072.00001.0018.0 Peat Depth Over 0.3

N

Twyn Calch
459m
Buarth Mash
Ford
Track
Path
Iss
Mynydd Llwyd
468m
Cwm Lleucu / Cwm Lickey
Collects
Spr
Sks
Mast
Mynydd Maen
Cwmbran / Cwmbran

BH - T3
HP9
TP3
T3
HP8
T1
HP6
PA04
T6
HP12
PA03
HP7
T2
HP2
T4
HP10
T5
HP1
HP11
PA05
PA02
BH - T8
HP14
TP8
T8

LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Watercourse Crossing
- Proposed Access Track
- Proposed Borrow Pit Search Area
- Proposed Hardstanding
- Hand Pit Location
- Peat Auger Location
- Borehole Location
- Trial Pit Location
- Peat Probe Location

Peat Depth (m)

- > 0.3 - 0.4
- > 0.4 - 0.5
- > 0.5 - 1

Note:
All infrastructure symbology can be found on Figure 2.

res

SLR

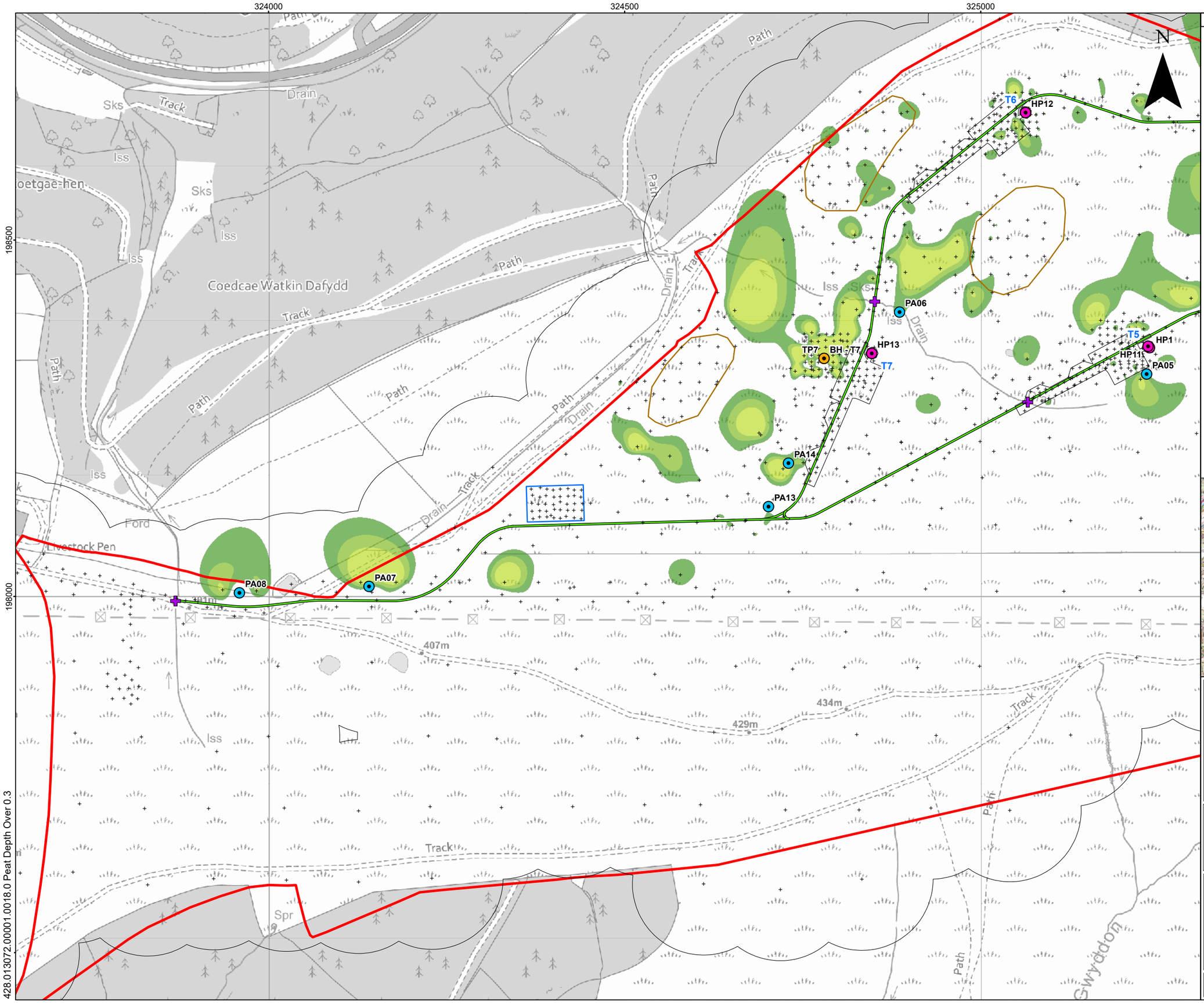
MYNYDD MAEN WIND FARM
SOIL & PEAT MANAGEMENT PLAN

PEAT DEPTH OVER 0.3 M

FIGURE 4.2

Scale 1:5,000 @ A3

Date JUNE 2024



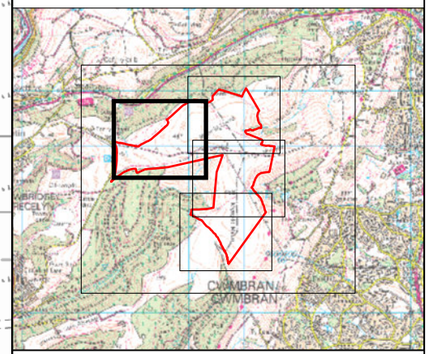
LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Watercourse Crossing
- Proposed Access Track
- Proposed Temporary Construction Compound
- Proposed Borrow Pit Search Area
- Proposed Hardstanding
- Hand Pit Location
- Peat Auger Location
- Borehole Location
- Trial Pit Location
- Peat Probe Location

Peat Depth (m)

- > 0.3 - 0.4
- > 0.4 - 0.5
- > 0.5 - 1

Note:
All infrastructure symbology can be found on Figure 2.



MYNYDD MAEN WIND FARM

SOIL & PEAT MANAGEMENT PLAN

PEAT DEPTH OVER 0.3 M

FIGURE 4.3

Scale	Date
1:5,000 @ A3	JUNE 2024

325500 326000 326500

198000 197500

N

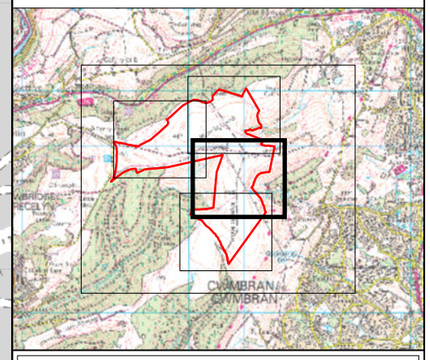
LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Proposed Access Track
- Proposed Substation
- Proposed Hardstanding
- Hand Pit Location
- Peat Auger Location
- Borehole Location
- Trial Pit Location
- Peat Probe Location

Peat Depth (m)

- > 0.3 - 0.4
- > 0.4 - 0.5
- > 0.5 - 1

Note:
All infrastructure symbology can be found on Figure 2.



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SLR

MYNYDD MAEN WIND FARM
SOIL & PEAT MANAGEMENT PLAN

PEAT DEPTH OVER 0.3 M

FIGURE 4.4

Scale 1:5,000 @ A3

Date JUNE 2024

428.013072.00001.0018.0 Peat Depth Over 0.3

325000
325500
326000
326500
197000
196500
428.013072.00001.0018.0 Peat Depth Over 0.3

PA11
T11
HP18
HP4
TP11
BH T11
T12
HP20
HP22
HP21
T13
HP5

South Top
459m

Track
Collects
Iss
Sks
Path

N

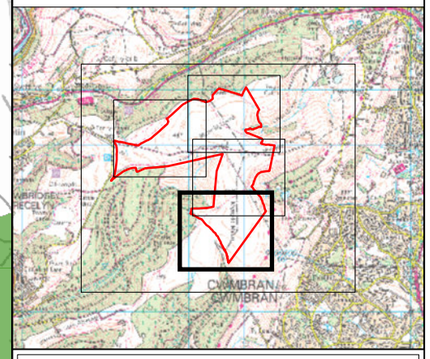
LEGEND

- Site Boundary
- Proposed Wind Turbine Location
- Proposed Access Track
- Proposed Hardstanding
- Hand Pit Location
- Peat Auger Location
- Borehole Location
- Trial Pit Location
- Peat Probe Location

Peat Depth (m)

- > 0.3 - 0.4
- > 0.4 - 0.5
- > 0.5 - 1
- > 1 - 1.5
- > 1.5 - 2

Note:
All infrastructure symbology can be found on Figure 2.



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SLR

MYNYDD MAEN WIND FARM
SOIL & PEAT MANAGEMENT PLAN

PEAT DEPTH OVER 0.3 M

FIGURE 4.5

Scale 1:5,000 @ A3

Date JUNE 2024

Annex A Exploratory Logs

Soil and Peat Management Plan

Mynydd Maen Wind Farm

Renewable Energy Systems Ltd

SLR Project No.: 428.013072.00001

17 June 2024

HAND PIT LOG

HAND PIT No
Hand Pit 01

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	12/09/2023		E325237 N198349	1 of 1

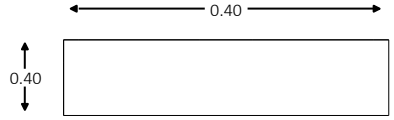
SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.10) 0.10	Roots, rootlets and grass (minimal soil present).	
							(0.10) 0.20	Dark brown sandy SILT. Sand is fine to coarse.	
0.2							0.25	Grey sandy SILT. Sand is fine to coarse.	
								Hand Dug Pit Complete at 0.25m	
0.4									
0.6									
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on granular substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support:

Stability:

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		IG	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 02

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	12/09/2023		E325613 N198412	1 of 1

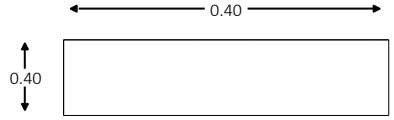
SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.10) 0.10	Roots, rootlets and grass (minimal soil present)	
0.2							(0.20) 0.30	Dark brown sandy SILT. Sand is fine to coarse.	
							0.35	Grey sandy SILT. Sand is fine to coarse.	
0.4								Hand Dug Pit Complete at 0.35m	
0.6									
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on granular substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support:

Stability:

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		IG	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 03

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	12/09/2023		E326178 N197664	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.10) 0.10	Roots, rootlets and grass (minimal soil present)	
							(0.12) 0.22	Dark brown sandy SILT. Sand is fine to coarse.	
							0.30	Grey sandy SILT. Sand is fine to coarse.	
								Hand Dug Pit Complete at 0.30m	

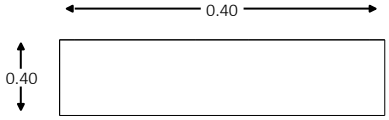
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on granular substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support:

Stability:

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		IG	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 04

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	12/09/2023		E325738 N196965	1 of 1

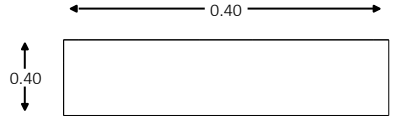
SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.10) 0.10	Roots, rootlets and grass (minimal soil present)	
							0.15	Grey sandy SILT. Sand is fine to coarse.	
								Hand Dug Pit Complete at 0.15m	
0.2									
0.4									
0.6									
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on granular substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support:

Stability:

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		IG	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 05

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	12/09/2023		E325731 N196357	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							0.05	Roots, rootlets and grass (minimal soil present)	
							0.10	Grey sandy SILT. Sand is fine to coarse.	
								Hand Dug Pit Complete at 0.10m	

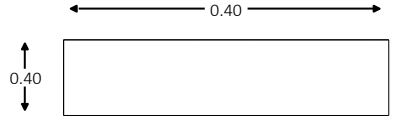
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on granular substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support:

Stability:

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		IG	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 06

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E325913 N198742	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.45)	Soft brown slightly sandy CLAY. Sand is fine. Moderate volume of organic material.	
							0.45		
							0.50	Brown slightly sandy clayey fine and medium GRAVEL of sub-angular sandstone. Sand is fine. Clay is soft.	
								Hand Dug Pit Complete at 0.50m	

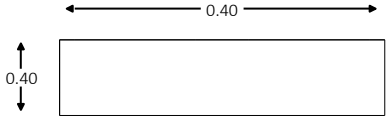
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 07

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E326059 N198524	1 of 1

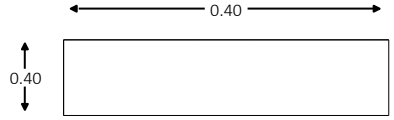
SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.18)	Soft brown slightly sandy CLAY. Sand is fine. Moderate volume of organic material.	
							0.18		
0.2							0.20	Brown clayey fine and medium GRAVEL of sub-angular and sub-rounded sandstone. Clay is soft.	
								Hand Dug Pit Complete at 0.20m	
0.4									
0.6									
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 08

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E325533 N198792	1 of 1

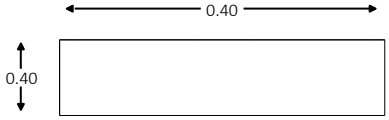
SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.20) 0.20	Turf over dark brown sandy SILT.	
0.2							(0.30) 0.50	Soft cream mottled light brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is fine and medium sub-angular sandstone.	
0.4								Hand Dug Pit Complete at 0.50m	
0.6									
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 09

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	01/05/2024		E325497 N198823	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.35) 0.35	Turf over dark brown sandy SILT.	
							(0.15) 0.50	Soft brown mottled light brown sandy CLAY. Sand is fine.	
								Hand Dug Pit Complete at 0.50m	

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:

Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 10

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E325637 N198388	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.25) 0.25	Turf over dark brown sandy SILT.	
							(0.15) 0.40	Soft cream mottled brown CLAY.	
							(0.10) 0.50	Cream clayey fine and medium GRAVEL of sub-angular and sub-rounded sandstone. Clay is soft.	
								Hand Dug Pit Complete at 0.50m	

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:

Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 11

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E325235 N198351	1 of 1

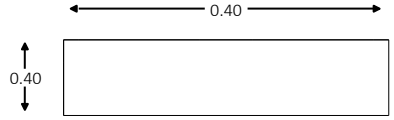
SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.13) 0.13	Turf over dark brown sandy SILT.	
0.2							(0.17) 0.30	Soft light brown slightly sandy CLAY. Sand is fine.	
0.4							(0.10) 0.40	Soft light brown slightly sandy gravelly CLAY. Sand is fine. Gravel is fine and medium sub-angular to sub-rounded sandstone.	
								Hand Dug Pit Complete at 0.40m	
0.6									
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 12

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E325063 N198679	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.25)	Turf over dark brown sandy SILT.	
							0.25		
							0.30	Soft brown slightly sandy gravelly CLAY. Sand is fine. Gravel is fine and medium sub-angular sandstone.	
								Hand Dug Pit Complete at 0.30m	

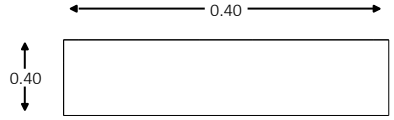
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 13

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E324847 N198341	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.30) 0.30	Turf over dark brown sandy SILT.	
							(0.15) 0.45	Soft light brown mottled brown CLAY.	
							0.50	Light brown clayey fine to medium GRAVEL of sub-angular sandstone. Clay is soft.	
								Hand Dug Pit Complete at 0.50m	

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:

Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 14

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E325883 N198185	1 of 1

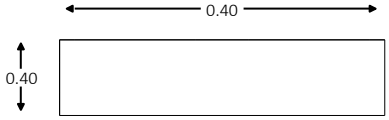
SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.27)	Turf over dark brown sandy SILT.	
0.2							0.27		
							(0.18)	Soft brown mottled light brown sandy CLAY. Sand is fine.	
0.4							0.45		
							0.50	Soft orange slightly sandy gravelly CLAY. Gravel is of fine and medium sub-angular and sub-rounded sandstone.	
0.6								Hand Dug Pit Complete at 0.50m	
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 15

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E326383 N197849	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.15) 0.15	Turf over dark brown sandy SILT.	
0.2							(0.25) 0.40	Soft brown slightly sandy CLAY. Sand is fine. Low volume of organic matter.	
0.4							(0.10) 0.50	Soft orangish brown sandy CLAY. Sand is fine.	
								Hand Dug Pit Complete at 0.50m	
0.6									
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:

Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 16

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	01/05/2024		E326370 N197869	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.35) 0.35	Soft dark brown slightly sandy CLAY. Sand is fine. High volume of organic material.	
							(0.15) 0.50	Soft brown sandy CLAY. Sand is fine.	
								Hand Dug Pit Complete at 0.50m	

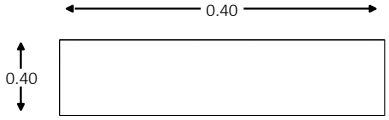
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 17

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	01/05/2024		E325567 N197285	1 of 1

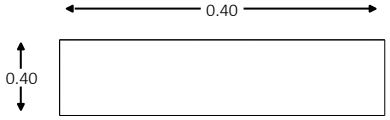
SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.18) 0.18	Turf over dark brown sandy SILT.	
0.2							(0.12) 0.30	Soft brown slightly sandy CLAY. Sand is fine.	
							0.35	Soft brown slightly sandy gravelly CLAY. Sand is fine. Gravel is fine and medium sub-angular sandstone.	
0.4								Hand Dug Pit Complete at 0.35m	
0.6									
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 18

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E325735 N197015	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.23)	Turf over dark brown sandy SILT.	
0.2							0.23		
							(0.15)	Soft orangish brown mottled brown CLAY.	
							0.38		
0.4							0.40	Orangish brown slightly sandy clayey fine to medium sub-rounded to sub angular GRAVEL of sandstone. Sand is fine. Clay is soft.	
								Hand Dug Pit Complete at 0.40m	
0.6									
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:

Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 19

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	01/05/2024		E325738 N197184	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.37) 0.37	Turf over dark brown sandy SILT.	
							(0.13) 0.50	Soft brown mottled light brown CLAY.	
								Hand Dug Pit Complete at 0.50m	

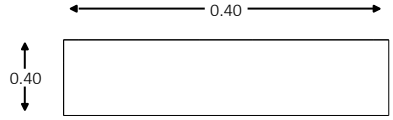
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 20

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E325720 N196716	1 of 1

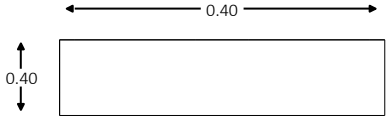
SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.15) 0.15	Turf over dark brown sandy SILT.	
0.2							(0.35) 0.50	Soft orangish brown mottled brown slightly gravelly CLAY. Gravel is of fine to medium sub-angular to sub-rounded sandstone.	
0.4								Hand Dug Pit Complete at 0.50m	
0.6									
0.8									
1.0									
1.2									
1.4									
1.6									
1.8									

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 21

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	30/04/2024		E325781 N196400	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.20) 0.20	Turf over dark brown sandy SILT.	
							(0.10) 0.30	Soft brown slightly sandy CLAY. Low volume of organic matter.	
							(0.45) 0.75	Soft greyish brown mottled brown slightly gravelly CLAY. Gravel is fine to medium sub-angular sandstone.	
								Hand Dug Pit Complete at 0.75m	

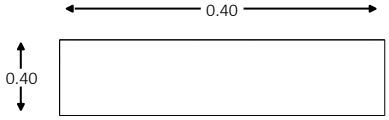
0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:



Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

HAND PIT LOG

HAND PIT No
Hand Pit 22

Client:
Renewable Energy Systems Ltd

Project:
Mynydd Maen Wind Farm

Project No:	Date:	Ground Level:	Co-ordinates:	Sheet
428.013072.00001	01/05/2024		E325759 N196442	1 of 1

SAMPLES & TESTS				Water	STRATA				Instrument Backfill
Depth	Type No	Test Type	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
							(0.25) 0.25	Turf over dark brown sandy SILT.	
							(0.15) 0.40	Soft dark brown mottled brown slightly sandy CLAY. Sand is fine.	
							0.45	Soft light brown mottled brown slightly sandy CLAY. Sand is fine.	
								Hand Dug Pit Complete at 0.45m	

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8

GENERAL REMARKS:

Hand pit excavated to confirm peat depths. Hand pit terminated on substrate.

KEY
V = Hand Vane Shear Strength
PP = Pocket Penetrometer Shear Strength
J = Jar Sample
D = Disturbed Sample
B = Large Bulk Sample
HS = Head Space Measurement

Hand Pit Dimensions:

Shoring/Support: None

Stability: Stable

All dimensions in metres	Contractor:	Method: Inspection pit	Logged By:	Approved By:
Scale 1:13	Plant: Hand Tools		KB	RW

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015+A2:2020

Hand Pit 01

Hand Pit 02

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

Project No. :- 428.013072.00001

Date :- September 2023

Hand Pit 03

Hand Pit 04

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

Project No. :- 428.013072.00001

Date :- September 2023

Hand Pit 05

End of September 2023 Photographs

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

Project No. :- 428.013072.00001

Date :- September 2023

Hand Pit 06
0.00m – 0.50m

Hand Pit 07
0.00m – 0.20m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.03539.00015

Date :- April 2024 – May 2024

Hand Pit 08
0.00m – 0.50m

Hand Pit 09
0.00m – 0.50m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.03539.00015

Date :- April 2024 – May 2024

Hand Pit 10
0.00m – 0.50m

Hand Pit 11
0.00m – 0.40m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.03539.00015

Date :- April 2024 – May 2024

Hand Pit 12
0.00m – 0.30m

Hand Pit 13
0.00m– 0.50m

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

Project No. :- 428.03539.00015

Date :- April 2024 – May 2024

Hand Pit 14
0.00m – 0.50m

Hand Pit 15
0.00m – 0.50m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.03539.00015

Date :- April 2024 – May 2024

Hand Pit 16
0.00m – 0.50m

Hand Pit 17
0.00m – 0.35m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.03539.00015

Date :- April 2024 – May 2024

Hand Pit 18
0.00m – 0.40m

Hand Pit 19
Spoil 0.00m – 0.50m

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

Project No. :- 428.03539.00015

Date :- April 2024 – May 2024

Hand Pit 20
0.00m – 0.50m

Hand Pit 21
0.00m – 0.75m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.03539.00015

Date :- April 2024 – May 2024

Hand Pit 22
0.00m – 0.45m

End of April 2024 - May 2024 Photographs

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

Project No. :- 428.03539.00015

Date :- April 2024 – May 2024

Peat Core Log

Hole No.
Peat Auger 01
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 325957.00 N: 197504.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description
	0.00 - 0.35	C	0.00 - 0.35	Recovery = 100%	0.30			Dark brown fibrous PEAT. Plant structure still identifiable, very slight decomposition and some amorphous material identified (H3, B2).
					0.35			Soft brown very sandy peaty CLAY. Sand is fine grained.
								Peat Core Complete at 0.35m

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 02
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 325759.00 N: 198199.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description	
	0.00 - 1.00				0.50			Brown fibrous PEAT. Plant structure easily identified, insignificant decomposition identified and slight amorphous material identified (H3, B2).	
					1.00			Brown fibrous PEAT. Plant structure mostly identifiable, slight decomposition and some amorphous material identified (H4, B3).	
	1	C	0.00 - 1.00	Recovery = 100%				Peat Core Complete at 1.00m	1

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 03
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 325484.00 N: 198486.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description
	0.00 - 0.40	C	0.00 - 0.40	Recovery = 100%	0.15			Dark brown fibrous PEAT. Plant structure easily identified, insignificant decomposition identified and very slight amorphous material identified (H2, B2).
					0.26			Dark brown fibrous PEAT. Plant structure still identifiable, very slight decomposition and some amorphous material identified (H3, B2).
					0.40			Soft orangish brown very sandy peaty CLAY. Sand is fine grained.
								Peat Core Complete at 0.40m

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 04
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 325605.00 N: 198696.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description	
	0.00 - 0.38	C	0.00 - 0.38	Recovery = 100%	0.38			Dark brown fibrous PEAT. Plant structure still identifiable, very slight decomposition and some amorphous material identified (H3, B2).	
	1							Peat Core Complete at 0.38m	1

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 05
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 325233.00 N: 198312.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description
	0.00 - 0.46	C	0.00 - 0.46	Recovery = 100%	0.17			Dark brown fibrous PEAT. Plant structure still identifiable, very slight decomposition and some amorphous material identified (H3, B2).
					0.23			Reddish brown fibrous PEAT. Plant structure easily identified, insignificant decomposition identified and very slight amorphous material identified (H2, B2).
					0.30			Dark brown fibrous PEAT. Plant structure still identifiable, very slight decomposition and some amorphous material identified (H3, B2).
					0.46			Soft orangish brown very sandy peaty CLAY.
								Peat Core Complete at 0.46m

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 06
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 324886.00 N: 198399.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description	
	0.00 - 0.33	C	0.00 - 0.33	Recovery = 100%	0.33			Dark brown fibrous PEAT. Plant structure easily identified, insignificant decomposition identified and very slight amorphous material identified (H2, B2).	
								Peat Core Complete at 0.33m	
	1								1

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 07
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 324141.00 N: 198014.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description	
	0.00 - 0.43	C	0.00 - 0.43	Recovery = 100%	0.30			Brownish black fibrous PEAT. Plant structure easily identified, insignificant decomposition identified and very slight amorphous material identified (H2, B2).	
					0.43			Firm brown very sandy peaty CLAY. Sand is fine to medium grained.	
	1							Peat Core Complete at 0.43m	1

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 08
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 323959.00 N: 198005.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description
	0.00 - 0.22	C	0.00 - 0.22	Recovery = 100%	0.07			Soft brown very sandy peaty CLAY. Sand is fine grained.
					0.22			Light brown very sandy peaty CLAY. Sand is fine to medium grained.
								Peat Core Complete at 0.22m

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 09
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 325997.00 N: 197517.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description	
	0.00 - 0.25	C	0.00 - 0.25	Recovery = 100%	0.25			Dark brown fibrous PEAT. Plant structure still identifiable, very slight decomposition and some amorphous material identified (H3, B2).	
	1							Peat Core Complete at 0.25m	1

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 10
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 325958.00 N: 197503.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description	
	0.00 - 0.42	C	0.00 - 0.42	Recovery = 100%	0.42			Dark brown fibrous PEAT. Plant structure mostly identifiable, slight decomposition, some amorphous material identified and residue somewhat pasty (H4, B3).	
	1							Peat Core Complete at 0.42m	1

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 11
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 325833.00 N: 197053.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description
	0.00 - 0.25	C	0.00 - 0.25	Recovery = 100%	0.25			Dark brown clayey fibrous PEAT. Plant structure recognisable but vague, moderate decomposition, some amorphous material identified and residue slightly pasty (H5) PEAT
								Peat Core Complete at 0.25m
	1							1

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 12
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 325779.00 N: 197440.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description	
	0.00 - 0.30	C	0.00 - 0.30	Recovery = 100%	0.30			Dark brown fibrous PEAT. Plant structure still identifiable, very slight decomposition and some amorphous material identified (H3) PEAT	
	1							Peat Core Complete at 0.30m	1

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 13
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 324702.00 N: 198126.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description	
	0.00 - 0.27	C	0.00 - 0.27	Recovery = 100%	0.27			Dark brown fibrous PEAT. Plant structure still identifiable, very slight decomposition and some amorphous material identified (H3) PEAT	
	1							Peat Core Complete at 0.27m	1

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Core Log

Hole No.
Peat Auger 14
Sheet 1 of 1

Project: Mynydd Maen Wind Farm	Client: Renewable Energy Systems Ltd		Dates: 16-03-2023
Project No: 428.013072.00001	Logger: FS	Approved By:	Coordinates: E: 324730.00 N: 198187.00
Location: Mynydd Maen	Hole Type: HA	Level:	Vertical Scale: 1:10

Water	Depth (m)	Sample Type	Depth	Recovery (%)	Depth (m) / Discontinuity Detail	Level (mAOD)	Legend	Stratum Description	
	0.00 - 0.43	C	0.00 - 0.43	Recovery = 100%	0.43			Dark brown fibrous PEAT. Plant structure still identifiable, very slight decomposition and some amorphous material identified (H3) PEAT	
	1							Peat Core Complete at 0.43m	1

Remarks:

Peat core recovered using peat sampler. Peat coring refused on granular substrate.

Peat Auger 1
0 – 0.35m

Peat Auger 2
0 – 0.5m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
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Project : Mynydd Maen Wind Farm

res

Project No. :- 428.013072.00001

Date :- March 2023

Peat Auger 2
0.5 – 1.0m

Peat Auger 3
0 – 0.4m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.013072.00001

Date :- March 2023

Peat Auger 4
0 – 0.38m

Peat Auger 5
0 – 0.46m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.013072.00001

Date :- March 2023

Peat Auger 6
0 – 0.33m

Peat Auger 7
0 – 0.43m

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

Project No. :- 428.013072.00001

Date :- March 2023

Peat Auger 8
0 – 0.22m

Peat Auger 9
0 – 0.25m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.013072.00001

Date :- March 2023

Peat Auger 10
0 – 0.42m

Peat Auger 11
0 – 0.25m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.013072.00001

Date :- March 2023

Peat Auger 12
0 – 0.3m

Peat Auger 13
0 – 0.27m

SLR

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

res

Project No. :- 428.013072.00001

Date :- March 2023

Peat Auger 14
0 – 0.43m

End of Photographs

Floor 2
4/5 Lochside View
Edinburgh Park
Edinburgh
EH12 9DH

Tel: 0131 335 6830
Fax: 0131 335 6831
Web: www.slrconsulting.com

Project : Mynydd Maen Wind Farm

Project No. :- 428.013072.00001

Date :- March 2023

Annex B Materials Calculator

Soil and Peat Management Plan

Mynydd Maen Wind Farm

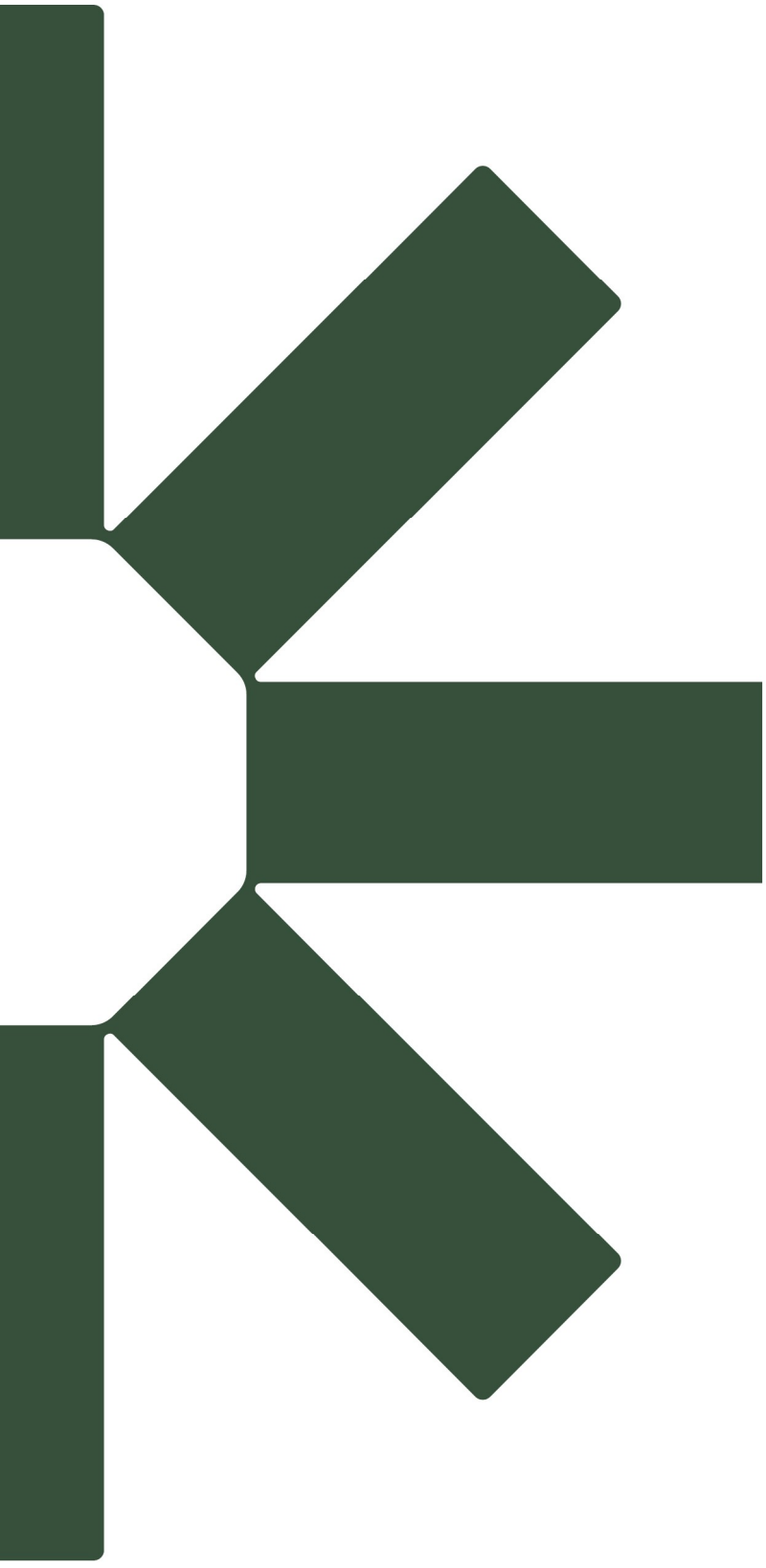
Renewable Energy Systems Ltd

SLR Project No.: 428.013072.00001

17 June 2024

Infrastructure	Length (m)	Width (m)	Area (m^2)	Average Depth of Soils/Peat (m)	Number	Total Excavated Volume of Soils/ Acrotelm Peat (m^3)	Total Excavated Volume Catotelm Peat (m^3)	Total Excavated Volume Soils/ Peat (m^3)	Length (m)	Width (m)	Area (m^2)	Average Thickness of Soils/ Peat (m)	Number	Total Re-use Volume of Soils/ Acrotelm Peat (m^3)	Total Re-use Volume Catotelm Peat (m^3)	Total Re-use Volume of Peat (m^3)	Notes
New Access Track	7962	5	39808	0.15	1	5971	-	5971	7962	2	15923	0.20	2	6369	-	6369	Assumes re-use of soils and peat on 2m wide strip either side of excavated track for verge restoration to tie into adjacent habitats.
Turbine 1 - Temporary hardstanding	-	-	3099	0.13	1	411	-	411	-	-	3099	0.13	1	411	-	411	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 2 - Temporary hardstanding	-	-	3099	0.18	1	547	-	547	-	-	3099	0.18	1	547	-	547	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 3 -Temporary hardstanding	-	-	3099	0.14	1	440	-	440	-	-	3099	0.14	1	440	-	440	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 4 - Temporary hardstanding	-	-	3099	0.13	1	398	-	398	-	-	3099	0.13	1	398	-	398	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 5 - Temporary hardstanding	-	-	3099	0.19	1	581	-	581	-	-	3099	0.19	1	581	-	581	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 6 - Temporary hardstanding	-	-	3099	0.26	1	803	-	803	-	-	3099	0.26	1	803	-	803	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 7 - Temporary hardstanding	-	-	3099	0.12	1	380	-	380	-	-	3099	0.12	1	380	-	380	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 8 - Temporary hardstanding	-	-	3099	0.30	1	924	-	924	-	-	3099	0.30	1	924	-	924	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 9 - Temporary hardstanding	-	-	3099	0.14	1	429	-	429	-	-	3099	0.14	1	429	-	429	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 10 - Temporary hardstanding	-	-	3099	0.18	1	565	-	565	-	-	3099	0.18	1	565	-	565	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 11 - Temporary hardstanding	-	-	3099	0.13	1	409	-	409	-	-	3099	0.13	1	409	-	409	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 12 - Temporary hardstanding	-	-	3099	0.17	1	528	-	528	-	-	3099	0.17	1	528	-	528	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 13 - Temporary hardstanding	-	-	3099	0.16	1	508	-	508	-	-	3099	0.16	1	508	-	508	Assumes temporary storage of excavated soils then reinstatement of temporary hardstands.
Turbine 1 - Permanent hardstanding	-	-	2157	0.13	1	275	-	275	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 2 - Permanent hardstanding	-	-	2157	0.08	1	182	-	182	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 3 - Permanent hardstanding	-	-	2157	0.19	1	402	-	402	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 4 - Permanent hardstanding	-	-	2157	0.12	1	269	-	269	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 5 - Permanent hardstanding	-	-	2157	0.14	1	296	-	296	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 6 - Permanent hardstanding	-	-	2157	0.13	1	282	-	282	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 7 - Permanent hardstanding	-	-	2157	0.12	1	259	-	259	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 8 - Permanent hardstanding	-	-	2157	0.22	1	485	-	485	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 9 - Permanent hardstanding	-	-	2157	0.18	1	390	-	390	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 10 - Permanent hardstanding	-	-	2157	0.16	1	355	-	355	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 11 - Permanent hardstanding	-	-	2157	0.17	1	376	-	376	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 12 - Permanent hardstanding	-	-	2157	0.15	1	321	-	321	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Turbine 13 - Permanent hardstanding	-	-	2157	0.14	1	302	-	302	-	-	150	0.20	1	150	-	150	Assumes re-use of soils and peat on 1m wide strip around the permanent hardstanding perimeter to tie into adjacent habitat.
Substation	110	82	9018	0.26	1	2345	-	2345	-	-	604	0.26	1	157	-	157	Assumes re-use of soils and peat on 2m wide strip around the substation perimeter to tie into adjacent peatland.
Temporary Construction Compound	50	80	4000	0.11	1	440	-	440	-	-	4000	0.11	1	440	-	440	Assumes temporary storage of excavated soils then reinstatement of compound area.
BP1	-	-	9624	0.15	1	1444	-	1444	-	-	9624	0.40	1	3850	-	3850	Assumes re-use of soils and peat in the borrow pit for restoration of the borrow pit and habitat creation.
BP2	-	-	13792	0.21	1	2896	-	2896	-	-	13792	0.40	1	5517	-	5517	Assumes re-use of soils and peat in the borrow pit for restoration of the borrow pit and habitat creation.
BP3	-	-	14770	0.18	1	2659	-	2659	-	-	14770	0.40	1	5908	-	5908	Assumes re-use of soils and peat in the borrow pit for restoration of the borrow pit and habitat creation.
Totals						**26870**	**0**	**26870**						**31112**	**0**	31112	

Total Excavated Volume Acrotelm Peat (m^3)	**26870**
Total Excavated Volume Catotelm Peat (m^3)	**0**
Total Excavated Volume Soils/ Peat (m^3)	**26870**
Total Re-use Volume Soils/ Acrotelm Peat (m^3)	**31112**
Total Re-use Volume Catotelm Peat (m^3)	**0**
Total Re-use Volume of Peat (m^3)*	31112
Net Balance (m^3)	**-4242**



Making Sustainability Happen