Rigged Hill Windfarm Repowering

Technical Appendix A7.1: Peat Slide Risk Assessment

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ARCUS

RIGGED HILL WINDFARM REPOWERING

PEAT SLIDE RISK ASSESSMENT

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1 INTRODUCTION

1.1 Background

Arcus Consultancy Services were commissioned by ScottishPower Renewables to carry out a Peat Slide Risk Assessment (PSRA) for the proposed repowering of Rigged Hill Windfarm (the Development). The Development will consist of the following key infrastructure:

- Seven turbines up to 137 m tip;
- Approximately 4.8km of new access tracks and 1.75km of upgrade to existing tracks;
- Permanent compound, 55m x 35m, occupying substation and Energy Storage Unit; and
- 2 x temporary compounds, main compound split into two areas (110m x 30m and other 90m x 35m) and the smaller compound near the Site entrance (approximately 50m x 50m).

The proposed layout of the Development is shown on **Figure 1** appended with this report.

1.2 Scope and Purpose

This PSRA provides factual information on the peat survey results relating to the proposed Development infrastructure locations. The desk-based information and site surveys have been utilised to assess the potential risk of any peat slide. The methodology adopted and details on the assessment are outlined in Sections 3, 4 and 5. The assessment has been undertaken in accordance with Scottish Government (SG), 2017 'Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments[1] in assessing the likelihood and consequence of such an event as recommended in Irish Wind Energy Association, 2012 Best Practice Guidance for the Irish Wind Energy Industry[2].

[1] Scottish Government, 2006. Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments.
[2] Irish Wind Energy Association, 2012. Best Practice Guidance for the Irish Wind Energy Industry. Available at: http://www.iwea.com/iweabestpracticeguidelines

2 SITE INFORMATION

2.1 Site Description and Topography

The Site is located to the west of Cam Forest and is situated on the ridge of Rigged Hill. The Site lies at an elevation of approximately 370m AOD in the east of the Site then falling towards the west to a lower elevation of approximately 130m AOD, centred approximately at Irish National Grid Reference (INGR) 274767, 420381.

2.2 Published Geology

2.2.1 Superficial Soils

The online Geological Survey of Northern Ireland (GSNI) information indicates the most easterly Site (the Study Area) area to be underlain by peat within the vicinity of the operational windfarm turbines. Locally, areas of the hillside are vacant of superficial soils, particularly the western face of Rigged Hill. The remainder of the Study Area is indicated to be underlain predominantly by glacial till. Peat dominates the immediate easterly surroundings. **Figure 2** illustrates the GSNI published 'Superficial Soils'.

2.2.2 Solid Geology

The underlying bedrock was indicated to belong mainly to the Upper Basalt Formation comprising Palaeogene aged Basalt. Within the Study Area, localised areas were recorded to belong to the Ballykelly Formation, comprising Psammite and Pelite, respectively. Shallow rock is anticipated in the upland slopes. **Figure 3** illustrates the 'Solid Geology'.

2.2.3 Hydrology and Hydrogeology

The Development is located in the overall catchments of the Castle River (a tributary of the River Roe) which is in the North West River Basin District and the Aghadowey River, which is located in the Neagh Bann River Basin District. A review of the River Basin Management Plan (RBMP) data indicates that there are two classified water bodies within the wider Study Area namely the Castle River and the Aghadowey River. The Castle River, located approximately 1.7 km to the west of the Study Area, is classified as possessing good overall status while the Aghadowey River, located approximately 5.8 km east of the Study Area, is classified as having moderate overall status.

The groundwater body under the Study Area is an unnamed waterbody within extrusive rocks of palaeogene age, which is classified by the DAERA as 'moderately productive aquifer'.

2.2.4 Geomorphology

The geomorphological characteristics of the Site are typical of upland peat areas in Northern Ireland. The elevated terrain comprises relatively steep hillside areas with a large flatter, and locally gently sloping, plateau. Blanket peat covers large sections of the landscape with exception of steeper ground or areas of disturbance and degraded peat. There was evidence of flushes on the south-western and southern crest of Rigged Hill.

2.3 Sources of Information

- Irish Wind Energy Association, 2012 – 'Best Practice Guidance for the Irish Wind Energy Industry' March 2012;
- Scottish Government (SG) - 'Peat Landslide Hazard and Risk Assessments' December 2017;
- The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017;
- NI Planning Service, 2009. Planning Policy Statement 18: Renewable Energy;

- Geological Survey of Northern Ireland - Online GeoIndex;
- Ordnance Survey (OS) topographical information;
- Assessments by other EIA specialists (specifically hydrology and ecology for data on sensitive receptors); and
- Aerial and Satellite photography.

3 GUIDANCE AND METHODOLOGY

3.1 General Guidance on Peat Failure

The SG guidance divides peat instability into two categories, 'peat slides' and 'bog bursts'. The guidance states that peat slides have a greater risk of occurrence in areas where:

- Peat is encountered at or near to ground surface level;
- The thicknesses are recorded in the region of 2.0m (above which, in general terms, peat instability would increase with peat thickness); and
- The slope gradients are steep (between 5° and 15°).

Bog bursts are considered to have a greater risk of occurrence in areas where:

- Peat depth is greater than 1.5m; and
- Slope gradients are shallow (between 2° and 10°).

Reports of bog bursts are generally restricted to the Republic of Ireland and Northern Ireland.

Preparatory factors which affect the stability of peat slopes in the short to medium-term include:

- Loss of surface vegetation (deforestation);
- Changes in sub-surface hydrology;
- Increase in the mass of peat through accumulation, increase in water content and growth of tree planting or
- Reduction in shear strength of peat or substrate due to chemical or physical weathering, progressive creep and tension cracking.

Triggering factors which can have immediate effect on peat stability and act on susceptible slopes include:

- Intensive rainfall or snow melt causing pressures along existing or potential peat/substrate interfaces;
- Snow melt;
- Alterations to drainage patterns, both surface and sub-surface;
- Peat extraction at the toe of the slope reducing the support of the upslope material;
- Peat loading (commonly due to stockpiling) causing an increase in shear stress; and
- Earthquakes or rapid ground accelerations such as blasting or mechanical movement.

Consideration of peat stability should form an integral part of the design of a windfarm development. While peat does not wholly provide a development constraint, areas of deep peat or peat deposits on steep slope should be either avoided through design and micro-siting or mitigation measures should be designed to avoid potential instability and movement.

3.2 Assessment Approach

This PSRA has been carried out in accordance with the Irish Wind Energy Association, 2012. Best Practice Guidance for the Irish Wind Energy Industry and Energy Consents Unit, Scottish Government (SG) guidance of 2017 titled 'Peat Landslide Hazard and Risk Assessments - Best Practice Guide for Proposed Electricity Generation Developments', Scottish Government.

The design of the Development is likely be influenced by the presence of peat, both as a physical consideration in terms of stability and engineering properties, and as a habitat resource. Active peatland is identified as a priority habitat in accordance with the EC Council Directive 92/43/EEC Conservation of Natural Habitats and Wild Fauna and Flora (the Habitats Directive) which is implemented by law in Northern Ireland through Article 3 of the Planning (Northern Ireland) Order 1991 and PPS18, August 2009 by Department of the

Environment (DOENI). On this basis, the survey works undertaken comprised the following:

- Desk based assessment;
- Site visits;
- An initial enhanced phase 1 peat probing scheme;
- A second phase of probing comprising infrastructure specific probing; and
- A hazard and risk ranking assessment.

The area of the development subject to assessment was determined by the emerging development layout which considered initial findings from desk studies and anticipated peat deposits as well as other physical and environmental constraints in conjunction with the early stage ecological surveys and the potential for active peat.

3.3 Peat Probing Methodology

3.3.1 Phase 1

Acknowledging the influence that peat classification will have on Development design, an enhanced peat depth survey would form the basis for the preliminary probing. The enhanced peat survey would include a probing rationale provisionally defined active peat areas from aerial mapping and desk-based assessments by the project ecologist, as follows:

- Likely active peat areas: Probes at 50 m spacing at the boundary with possibly active peat/transition zones and further probes within the active peat zone for verification;
- Possibly active peat: 50 m peat probe and inspection grid; and
- Not active peat: 100 m peat probe and inspection grid.

The enhanced Phase 1 peat depth survey included a visual inspection of characteristics at or adjacent to each probe location, a photographic record, and recording of the following data:

- Peat depth;
- Proximity to shallow (less than 0.3 m) or deep (greater than 0.3 m) surface water drainage;
- Presence of common cottongrass (Eriophorum angustifolium) and the categorising of it as abundant, little or absent;

3.3.2 Phase 2

Following the interim design freeze more intensive probing would be undertaken concentrated on the Site layout design. The spacing of probing would be between 10m (at turbine locations) and 25m centres (along and adjacent to proposed tracks).

3.3.3 Development of Hazard Rank

The early stages of the PSRA includes desk study of existing data and considers site visits and peat probing were carried out in parallel with the assessment of wider constraints and the design of the Development layout. Following identification of peat depths within the Site, the assessment was carried out to determine the potential effects on the peat resource of construction activities which would include:

- Construction of tracks;
- Excavation of turbine bases;
- Foundation construction;
- Construction of hardstanding; and
- Temporary Storage of peat

An assessment of the peat probing data and a review against desk study information was undertaken and a hazard rank was calculated for different zones across the Site reflecting risk of peat instability / constraint to construction.

Where practical, the Development layout was progressed to avoid areas of a risk score above 'low'. Where this has not been achieved, areas effected have been discussed in both the EIA as having significant effect, with relative mitigation measures proposed to reduce this, and recorded on a risk register which sets out specific mitigation measures which are considered necessary to reduce the risk of inducing instability.

4 SITE SURVEYS

4.1 Introduction

Onsite surveys took place at a pre-scoping stage to ascertain the extent and nature of peat within the Study Area, through a robust investigation approach suitable to the identification of active peat characteristics. Initial desk-based researches and co-ordination with the project ecologist defined extents of active, possibly active and not-active peat. This approach informed an enhanced Phase 1 peat probing and National Vegetation Classifications (NVC) survey.

The Phase 1 peat survey was undertaken by Arcus and NM Ecology through April, May and June 2017, totalling 331 probes. Phase 2 surveys were undertaken over several phases by Arcus and NM Ecology, through May, July, and November 2018 and again in May and June 2019, totalling a further 780. During the course of the peat probing investigations, a total of 1111 probes were sunk.

4.2 Site Walkover

Much of the Site area at the top of Rigged Hill was occupied by the existing windfarm infrastructure. A relatively-large expanse of blanket bog was found on the crest of Rigged Hill towards the east which forms part of a larger peatland unit over the upland areas to the north, south and east of the Site.

Indications of man-made changes to the natural landscape as a result of historical management activities including peat cutting, livestock grazing and drainage was noted during the Site walkover. Localised areas within the blanket bog areas were noted to be of a degraded nature. Photographs from the Site visit are included in Appendix B.

4.3 Peat Depths

Peat was generally thickest in the flatter topographic areas at the crest of Rigged Hill within the most eastern area of the existing windfarm where a maximum depth of 3.1m was recorded. Peat depths in this area generally exceeded 1.5m in depth consistently while generally thinner conditions were encountered in areas of steeper topography, namely towards the north-west and west where peat was in the region of 1.0m-1.5m and 0-0.5m respectively. The average peat depth across the entire Site area was recorded as 0.55m.

Phase 2 peat probing supplemented Phase 1 covering the proposed infrastructure in this Table 1 indicates the average peat depths encountered at each proposed turbine locations while Table 2 summarises the total peat depths recorded.

Table 1 – Peat Depths at Turbines

Turbine No.	Easting	Northing	Average Peat Depth (m)
1	275417	420790	0.50
2	275450	420290	0.50
3	275581	419544	0.40
4	275120	419351	0.50
5	274972	419804	0.40
6	274906	420334	0.40
7	275017	420957	0.40

Table 2 – Peat Depth Summary

Peat Depth Range (m)	No of peat probes	Percentage of Total (%)
0 - 0.50m	813	73.2
0.51m - 1.00m	174	15.7
1.01m - 1.50m	46	4.1
1.51m - 2.00m	54	4.9
2.01m - 2.50m	17	1.5
2.51m – 3.00m	6	0.5
3.01m – 3.50m	1	0.1

The 'Peat Probe Locations' are shown on **Figure 4** while 'Interpolated Peat Depths' are shown on **Figure 5**. It is apparent that from Table 1 and the interpolated peat depths that approximately 73% of the Study Area returned peat depths 0.5m or less.

To assess the relationship between peat thicknesses and slope gradient, **Figure 6 –** 'Slope Gradient' has been prepared.

4.4 Substrate

Although there were some exposures of the substrate at ground level, there is insufficient data to accurately map the distribution and composition of the substrate beneath the peat. Typically, the peat soils will overlie one of the following;

- Clay;
- Weathered Rock/Sand and Gravel; or
- Rock; and
- Not proven

For the purposes of this PSRA, the substrate parameters have been assessed as 'not proven' as the most conservative approach in the Hazard and Exposure Assessment in Section 5 of this report.

4.5 Peat Workings

There was evidence of peat workings in the south-eastern Site area, where there was extensive evidence of historic peat cutting along with a drainage network at 10m spacing covering much of this part of the Site. An old peat bank separates the south-eastern area from the central-eastern area where the ground level was notably higher by almost 1.0m, in turn meaning peat depths were also greater. See Appendix B for Site photographs.

5 HAZARD AND EXPOSURE ASSESSMENT

5.1 Background

A 'Hazard Ranking' system has been applied across the site based on the analysis of risk of peat slide as outlined in the Scottish Government guidance. This is applied on the principle:

Hazard Ranking = Hazard x Exposure

Where 'Hazard' represents the likelihood of any peat slide event occurring and 'Exposure' being the impact or consequences that a peat slide may have on sensitive receptors that exist on and around the Study Area.

5.2 Methodology

The determination of Hazard and Exposure values is based on a number of variables which impact the likelihood of a peat slide (the Hazard), and the relative importance of these variables specific to the Site.

Similarly, the consequences or Exposure to receptors is dependent on variables including the particular scale of a peat slide, the distance it will travel and the sensitivity of the receptor.

In the absence of a predefined system, the approach to determining and categorising Hazard and Exposure is determined on a site by site basis. The particular system adopted for the Development PSRA assessment is outlined in the following sub sections.

5.3 Hazard Assessment

The potential for a peat slide to occur during the construction of a windfarm depends on several factors, the importance of which can vary from site to site. The factors requiring considerations would typically include:

- Peat depth;
- Slope gradient;
- Substrate material;
- Evidence of instability or potential instability;
- Vegetation cover; and
- Hydrology.

Of these, peat depth and slope gradient are considered to be principal factors. Without a sufficient peat depth and a prevailing slope, peat slide hazard would be negligible. For the Development, the substrate material has been assessed as unknown, therefore a conservative approach in this regard has been adopted.

5.4 Hazard Rating

When several factors may impact on the Hazard potential, a relative ranking process is applied attributing different weighting to each factor as shown below.

Table 3: Coefficients for Slope Gradients

Slope Angle (degrees)	Slope Angle Coefficients
Slope < 2°	1
2° < Slope < 4°	2
4° < Slope < 8°	4
8° < Slope < 15°	6
Slope >15°	8

Table 4: Coefficients for Peat Thickness and ground conditions

Peat Thickness	Ground Conditions Coefficients
Peaty or organic soil (<0.5m)	1
Thin Peat (0.5 – 1.0m)	2
Deep Peat (>1.0m)	3*
Deep Peat (>3.0)	8

* - Note that thicker peat generally occurs in areas of shallow gradient and records indicate that thick peat does not generally occur on the steeper gradients.

Table 5: Coefficients for Substrate

Substrate Material	Substrate Coefficients
Sand/gravel	1
Rock	1.5
Clay	2
Not proven	2
Slip material (Existing materials)	5

The Hazard Rating Coefficient for a particular location is calculated using the following equation:

Hazard Rating Coefficient = Slope Gradient x Peat Thickness x Substrate

From the Hazard Rating Coefficient, the risk to stability can be ranked as set out in Table 6.

Table 6: Hazard Rating

Hazard Rating Co-efficient	Potential Stability Risk (Pre-Mitigation)
<5	Negligible
5 to 15	Low
16 to 30	Medium
31 to 50	High
> 50	Very High

5.5 Peat Stability Assessment

The likelihood of a particular slope or hillside failing can be expressed as a Factor of Safety. For any potential failure surface, there is a balance between the weight of the potential landslide (driving force or shear force) and the inherent strength of the soil or rock within the hillside (shear resistance).

The guidance states that the 'Infinite Slope' method of analysis, after Skempton and DeLory (1957), is the most well established and commonly applied method for the assessment of peat slope stability. The stability of a slope can be assessed by calculating the factor of safety F, which is the ratio of the sum of resisting forces (shear strength) and the sum of the destabilising forces (shear stress):

$$F = \frac{c' + (\gamma - m\gamma_w) z \cos^2 \beta \tan \phi'}{\gamma z \sin \beta \cos \beta}$$

where c' is the effective cohesion, γ is the bulk unit weight of saturated peat, γ_w is the unit weight of water, m is the height of the water table as a fraction of the peat depth, z is the peat depth in the direction of normal stress, β is the angle of the slope to the horizontal and ϕ' is the effective angle of internal friction. Values of F < 1 indicate a slope would have undergone failure under the conditions modelled; values of F > 1 suggest conditions of stability.

Assumed geotechnical parameters have been utilised in the formula to inform the stability assessment, based on literature values to inform the stability analysis, as included in Table 7.

Table 7 – Literature For Geotechnical Parameters of Peat

Reference	Effective Cohesion C′ (kPa)	Effective Angle of Friction ϕ (°)	Unit Weight ϒ (kN/m2)	Comments
Hanrahan et al (1967)	5.5 – 6.1	36.6 - 43.5	-	Remoulded H4 Sphagnum peat
Hollingshead and Raymond (1972)	4.0	34	-	-
Hollingshead and Raymond (1972)	2.4 – 4.7	27.1 – 35.4	-	Sphagnum peat (H3, mainly fibrous)
Carling (1986)	6.52	0	10	-
Kirk (2001)	2.7 – 8.2	26.1 – 30.4		Ombrotrophic blanket peat
Warburton et al (2003)	5.0	23	9.68	Basal Peat
Warburton et al (2003)	8.74	21.6	9.68	Fibrous Peat
Dykes and Kirk (2006)	3.2	30.4	9.61	Acrotelm
Dykes and Kirk (2006)	4.0	28.8	9.71	Catotelm

C′ – effective cohesion (kPa), typically ranging from 2.5 to 8.5 therefore 5.0 has been adopted for the purposes of the assessment.

ϕ – effective angle of friction (°), typically ranging from 21.6 to 43.5 therefore 29.6 has been adopted for the purposes of the assessment.

ϒ – unit weight (kN/m2), typically ranging from 9.61 to 10, therefore 10 has been adopted for the purposes of the assessment.

In accordance with the best practice method, F values of <1.0 indicate slopes that would experience failure under the modelled conditions and as such are considered areas of high risk. However, Boylan et al (2008) indicate that a relatively high value of F=1.4 should be used to identify slopes with the potential for instability. Adopting this approach, high risk areas area indicated where F is <1.0, medium risk areas are indicated as 1.01 to 1.50 and >1.5 are low risk.

Using digital terrain modelling and GPS co-ordinates of each peat probe, a factor of Safety, 'F' has been calculated for each probe locations which has been interpolated through ArcGIS Spatial Analyst tools. The 'Indicative Factor of Safety Plan' is shown on **Figure 7**.

5.6 Exposure Assessment

The main Exposure receptors identified within the site and surrounding area which could potentially be affected in the event of a peat slide were existing windfarm infrastructure, watercourses and associated tributaries.

The impact of a peat slide on receptors can be assessed on a relative scale based on the potential for loss of habitat, a historical feature or disruption/danger to the public. To effectively assess the impact, the assessment of Exposure effect must also consider the distance between the hazard and the receptor, and the relative elevation between the two.

5.7 Exposure Rating

Similar to the Hazard Rating, the Exposure Ratings were determined using relative ranking process by attributing the different weighting systems to each factor as shown below:

Table 8: Coefficients for Receptor Type

Receptor	Receptor Coefficients
Tracks/footpaths	2
Non-critical infrastructure, minor/private roads	3
Minor watercourses and tributaries, critical infrastructure (pipelines, motorways, dwellings, business properties).	6
Residential Properties/Community, Watercourses/Lochs, important habitat	8

Table 9: Coefficients for Distance from Receptor

Distance from Receptor	Distance Coefficients
> 1 km	1
100m to 1 km	2
10m to 100m	3
<10m	4

Table 10: Coefficients for Receptor Impact

Receptor Elevation	Impact Coefficients
Very Low (Unlikely, no significant effects, very low potential to cause harm)	1

Low (Minor damage or delay, indirect impact on unclassified unprotected area, very low repair costs, short term effect)	2
Moderate (Damage or delay with moderate repair costs, temporary measures required, impacts sensitive receptors requiring restoration.)	3
High (Major damage or delay with high repair costs, temporary measures required, impacts sensitive receptors)	4
Very High (Major damage to infrastructure likely to be serious, very costly, potential for loss of life, needs replacement and long-term measures)	5

The Exposure Rating Coefficient for a particular location is calculated using the following equation:

Exposure Rating Coefficient = Receptor x Distance x Impact

From the Exposure Rating Coefficient, the risk to stability can be ranked as set out in Table 11.

Table 11: Exposure Rating

Exposure Rating Co-efficient	Potential Stability Risk (Pre-Mitigation)
<10	Very Low
11 to 20	Low
21 to 30	High
31 to 50	Very High
>50	Extremely High

5.8 Rating Normalisation

In order to achieve an overall Hazard Ranking in accordance with the Scottish Government Guidance, the Hazard and Exposure Rating Coefficient derived from the coefficient tables are normalised as shown in Table 12.

Table 12: Rating Normalisation

Hazard Rating		Exposure Rating	
Current Scale	**Normalised Scale**	**Current Scale**	**Normalised Scale**
< 5 Negligible	1	<10 Very Low	1
5 to 15 Low	2	11 to 20 Low	2
15 to 31 Medium	3	21 to 30 High	3
31 to 50 High	4	31 to 50 Very High	4
>50 Very high	5	>50 Extremely High	5

The record of the Hazard Rank Assessment is included in Appendix C of this report.

6 HAZARD RANKING

Having identified the rating coefficients as defined in Section 5 of this report, it is possible to categorise areas of the site with a Hazard Ranking by multiplying the Hazard and Exposure Rating. Hazard Ranking and associated suggested actions matrix are shown in Tables 13 and 14 below:

Table 13- Hazard Ranking and Suggested Actions

Hazard Ranking		Action Suggested in the Scottish Executive Guidance
17-25	High	Avoid project development at these locations.
11-16	Medium	Project should not proceed unless hazard can be avoided or mitigated at these locations, without significant environmental impact, in order to reduce hazard ranking to low or less
5-10	Low	Project may proceed pending further investigation to refine assessment. Mitigation of hazards maybe required through micro-siting or re-design at these locations.
1-4	Negligible	Project should proceed with monitoring and mitigation of peat landslide hazards at these locations as appropriate.

Table 14 - Hazard Ranking Matrix

Hazard Rating	5	Low	Low	Medium	High	High
	4	Negligible	Low	Medium	Medium	High
	3	Negligible	Low	Low	Medium	Medium
	2	Negligible	Negligible	Low	Low	Low
	1	Negligible	Negligible	Negligible	Negligible	Low
		1	2	3	4	5
		Exposure Rating				

Receptor exposure was assessed for each of the eight hazard zones using the approach in Section 5. A summary of the Hazard Ranking result for each identified area is summarised in Table 15 and is presented in **Figure 8** 'Hazard Ranking Zonation Plan'.

7 SLIDE RISK AND MITIGATION

7.1 General

The PSRA has shown the Site to be of generally negligible and low hazard ranking. A single area was recorded as medium risk; however, no infrastructure was proposed here. On this basis a Development specific risk register has been prepared below in Table 15.

Where the hazard ranking has been lowered through mitigation measures, the original ranking will remain in the overall hazard zoning plan and this should be acknowledged should there be future amendments to the infrastructure layout.

While the specific recommended mitigation in the low and medium ranked areas are proposed and are embedded in the design at EIA stage, it remains necessary for detailed design and construction of the Development infrastructure to be undertaken in a competent and controlled manner.

The embedded mitigation and good practice measures are set out in Section 7.2. It should be noted that the mitigation measures defined are not exclusive and other forms of mitigation may well be required and should be developed by designers and implemented during construction of the scheme.

Table 15 - Risk Register

Hazard Area and Infrastructure		**Unmitigated Hazard**		**Mitigated Hazard**	
Hazard Area	**Infrastructure Affected**	**Ranking**	**Key Aspects**	**Specific Actions**	**Ranking**
H1	No Infrastructure proposed.	Negligible	Location and topography: north of Rigged Hill, sloping north west. Hydrology: Small unnamed tributaries flowing in a north-west direction. Peat Depth: (min) 0.3m - (max) 1.70m. Generally, <1.00m Slope Gradient: 0° to 5° Exposure: Unnamed tributaries.	None	Negligible
H2	T1, Tracks, Hardstanding, Construction Compound and Substation.	Low	Location and topography: North eastern face of Rigged Hill – sloping downward in a northern direction. Hydrology: drain feature to the immediate north.	Best Practice Measures for excavation, management and storage of peat and peaty soils. Compensation through localised peat bog restoration and implementation	Negligible

Hazard Area and Infrastructure		**Unmitigated Hazard**		**Mitigated Hazard**	
			Peat Depth: (min) 0.00m - (max) 3.00m. Generally, <0.40m Slope Gradient: 0° to 10° Exposure: Watercourse Minor	of remediation/compensation in line with the measures outlined with the Draft HMP. Where possible, micrositing onto thinner peat or shallower is recommended to further reduce any impact on peat and peaty soils. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted.	
H3	No Infrastructure Proposed	Low	Location and topography: East of the crest of Rigged Hill. Hydrology: No hydrological features within this area. Peat Depth: (min) 0.00m - (max) 2.00m. Generally, <2.00 m Slope Gradient: 0° to 5° Exposure: Watercourse minor.	Best Practice Measures for excavation, management and storage of peat and peaty soils. Compensation through localised peat bog restoration and implementation of remediation/compensation in line with the measures outlined with the Draft HMP. Where possible, micrositing onto thinner peat or shallower is recommended to further reduce any impact on peat and peaty soils. In areas where peat depths exceed 1m, it is recommended that floating track	Negligible

Hazard Area and Infrastructure		Unmitigated Hazard		Mitigated Hazard	
				construction methods should be adopted.	
H4	T2 Hardstandings and Tracks	Negligible	Location and topography: Eastern face of Rigged Hill. Steeply sloping west. Hydrology: No hydrological features within this area. Peat Depth: (min) 0.0m - (max) 2.00. Generally, <1.00m Slope Gradient: 0° to 5° Exposure: Proposed turbines, tracks, hardstandings and existing tracks.	Best Practice Measures for excavation, management and storage of peat and peaty soils. Compensation through localised peat bog restoration and implementation of remediation/compensation in line with the measures outlined with the Draft HMP. Where possible, micrositing onto thinner peat or shallower is recommended to further reduce any impact on peat and peaty soils. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted.	Negligible
H5	Tracks	Low	Location and topography: Flat lying topographic area on the crest of Rigged Hill. Hydrology: Unnamed tributary. Peat Depth: (min) 0.20m - (max) 3.10m. Generally, <2.50m Slope Gradient: 0° to 10°	Best Practice Measures for excavation, management and storage of peat and peaty soils. Compensation through localised peat bog restoration and implementation of remediation/compensation in line with the measures	Negligible

Hazard Area and Infrastructure		Unmitigated Hazard		Mitigated Hazard	
			Exposure: Proposed tracks and water course minor.	outlined with the Draft HMP. Where possible, micrositing onto thinner peat or shallower is recommended to further reduce any impact on peat and peaty soils. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted.	
H6	T3 Hardstandings and Tracks	Negligible	Location and topography: Southern face of Rigged Hill. Smoothly sloping south. Hydrology: No hydrological features within this area. Peat Depth: (min) 0.0m - (max) 0.80. Generally, <0.50m Slope Gradient: 0° to 10° Exposure: Proposed turbines, tracks, hardstandings and existing tracks.	Best Practice Measures for excavation, management and storage of peat and peaty soils. Compensation through localised peat bog restoration and implementation of remediation/compensation in line with the measures outlined with the Draft HMP. Where possible, micrositing onto thinner peat or shallower is recommended to further reduce any impact on peat and peaty soils. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted.	Negligible

Hazard Area and Infrastructure		Unmitigated Hazard		Mitigated Hazard	
H7	T4, Tracks and Hardstanding	Low	Location and topography: South western face of rigged hill, sloping gently south west. Peat Depth: (min) 0.00m - (max) 1.00m. Generally, <1.00m Hydrology: Minor watercourse. Slope Gradient: 0° to 10° Exposure: Proposed infrastructure, watercourse minor	Best Practice Measures for excavation, management and storage of peat and peaty soils. Compensation through localised peat bog restoration and implementation of remediation/compensation in line with the measures outlined with the Draft HMP. Where possible, micrositing onto thinner peat or shallower is recommended to further reduce any impact on peat and peaty soils. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted.	Negligible

Hazard Area and Infrastructure		Unmitigated Hazard		Mitigated Hazard	
H8	T6, T7, Hardstandings and Tracks	Negligible	Location and topography: Western face of Rigged Hill. Steeply sloping west. Hydrology: No hydrological features within this area. Peat Depth: (min) 0.0m - (max) 0.50. Generally, <0.50m Slope Gradient: 0° to 15° Exposure: Proposed turbines, tracks, hardstandings and existing tracks.	Best Practice Measures for excavation, management and storage of peat and peaty soils. Compensation through localised peat bog restoration and implementation of remediation/compensation in line with the measures outlined with the Draft HMP. Where possible, micrositing onto thinner peat or shallower is recommended to further reduce any impact on peat and peaty soils. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted.	Negligible

Hazard Area and Infrastructure		Unmitigated Hazard		Mitigated Hazard	
H9	T5, Tracks and Hardstanding	Low	Location and topography: Western face of Rigged Hill. Hydrology: No hydrological features. Peat Depth: (min) 0.20m - (max) 1.70m. Generally, <1.00m Slope Gradient: 0° to 10° Exposure: Proposed turbine and associated infrastructure	Best Practice Measures for excavation, management and storage of peat and peaty soils. Compensation through localised peat bog restoration and implementation of remediation/compensation in line with the measures outlined with the Draft HMP. Where possible, micrositing onto thinner peat or shallower is recommended to further reduce any impact on peat and peaty soils. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted.	Negligible

Hazard Area and Infrastructure		Unmitigated Hazard		Mitigated Hazard	
H10	Tracks	Negligible	Location and topography: The crest of Rigged Hill. Smoothly sloping west. Hydrology: No hydrological features within this area. Peat Depth: (min) 0.0m - (max) 1.70. Generally, <0.50m Slope Gradient: 0° to 15° Exposure: Proposed tracks and existing tracks.	Best Practice Measures for excavation, management and storage of peat and peaty soils. Compensation through localised peat bog restoration and implementation of remediation/compensation in line with the measures outlined with the Draft HMP. Where possible, micrositing onto thinner peat or shallower is recommended to further reduce any impact on peat and peaty soils. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted.	Negligible
H11	Tracks	Low	Location and topography: Western face of Rigged Hill, sloping smoothly West. Hydrology: Drains and unnamed surface watercourse. Peat Depth: (min) 0.10m - (max) 1.10m. Generally, <0.50m Slope Gradient: 0° to 10° Exposure: Proposed tracks and water courses minor.	Best Practice Measures for excavation, management and storage of peat and peaty soils. Compensation through localised peat bog restoration and implementation of remediation/compensation in line with the measures outlined with the Draft HMP. Where possible, micrositing onto thinner peat or	Negligible

Hazard Area and Infrastructure		Unmitigated Hazard		Mitigated Hazard	
				shallower is recommended to further reduce any impact on peat and peaty soils. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted.	
H12	Access Track	Negligible	Location and topography: Access track at south west of rigged hill, sloping north west towards site entrance. Peat Depth: Ground investigations for operational track recorded no significant peat and the habitat assessments indicated no signs of peatlands in this area of the site. Hydrology: Various unnamed tributaries. Slope Gradient: 0° to 15° Exposure: Proposed track and water course minor	Best Practice Measures for excavation, management and storage of peat and peaty soils.	Negligible

7.2 Embedded Mitigation

Embedded mitigation includes measures taken during design of the Development to reduce the potential for peat slide risk. In summary the principal measures that have been taken are:

- Locating infrastructure on shallower slopes, where possible; and
- Locating infrastructure on areas of shallow peat (or no peat) where possible.

7.3 Peat Slide Mitigation Recommendations

The following mitigation measures should be adopted post consent stage to validate the PSRA and influence the detailed design of the Development:

- Ground investigations prior to detailed design;
- Identification of areas sensitive to changes in drainage regime prior to detailed design;
- Update the PSRA as necessary following detailed ground investigations;
- Development of a drainage strategy that will not create areas of concentrated flow and will not affect the current peatland hydrology;
- Design of a development drainage system for tracks and hardstanding that will require minimal ongoing maintenance during the operation of the windfarm;
- Inspection and maintenance of the drainage systems during construction and operation;
- Identification of suitable areas for stockpiling material during construction prior to commencement of works; and
- Consideration of specific construction methods appropriate for infrastructure in peat land (i.e. geogrids) as part of Development design.

8 CONCLUSIONS

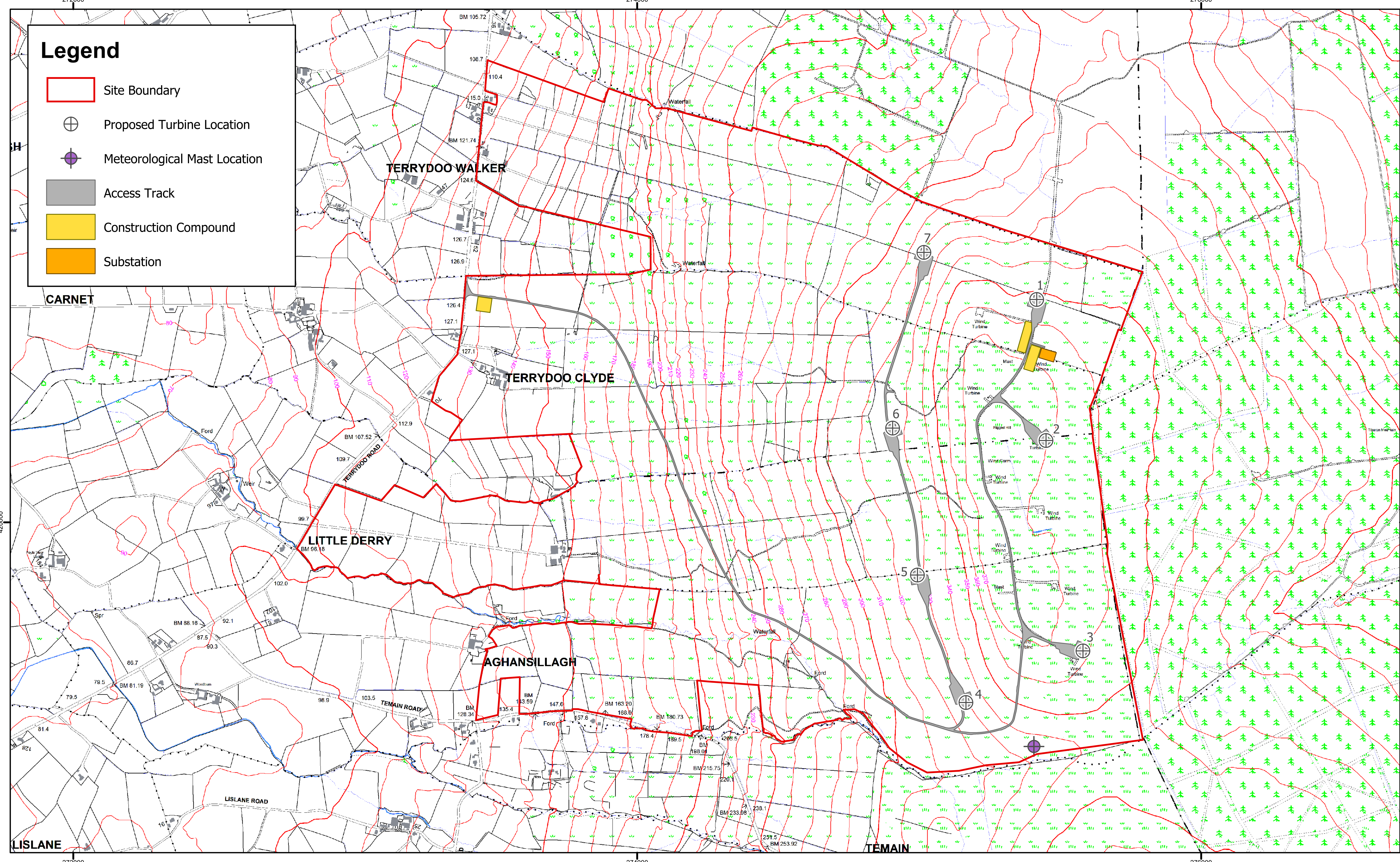
This PSRA has been undertaken for the Development in accordance with guidance. The early stages of the assessment included a desk study and site walkover followed by an Enhanced Phase 1 intrusive investigation exercise with peat probes sunk at 50 metre centres in areas where active Peat would likely exist/might have existed and at 100 metre (m) centres where active Peat did not exist, followed by a Phase 2 intrusive investigation exercise with peat probes sunk between 10 and 25m centres in proximity to infrastructure associated with the Development. The information gathered during this investigation was used to develop a Hazard Ranking across Development layout.

Through desk study site visit and peat depth survey, it has been demonstrated that peat was generally thickest in the flatter topographic areas at the crest of Rigged Hill, within the most eastern area of the existing windfarm where a maximum depth of 3.1m was recorded.

Based on the scope of the study, the PSRA shows the Site to be generally of negligible or low hazard, with no medium or high-risk areas.

The Development has been designed where practicable to avoid areas with a hazard ranking above 'low'. Notwithstanding this, infrastructure should be checked on Site and micrositing adopted if required in order to maintain the design objective of avoiding peat slide risk.

APPENDIX A - DRAWINGS



Rev	Date	By	Comment
A	08/07/2019	SC	First Issue.

Rigged Hill Windfarm Repowering

Site Layout Plan

Figure 1

Drawing Number: 2607-REP-069

Datum TM65

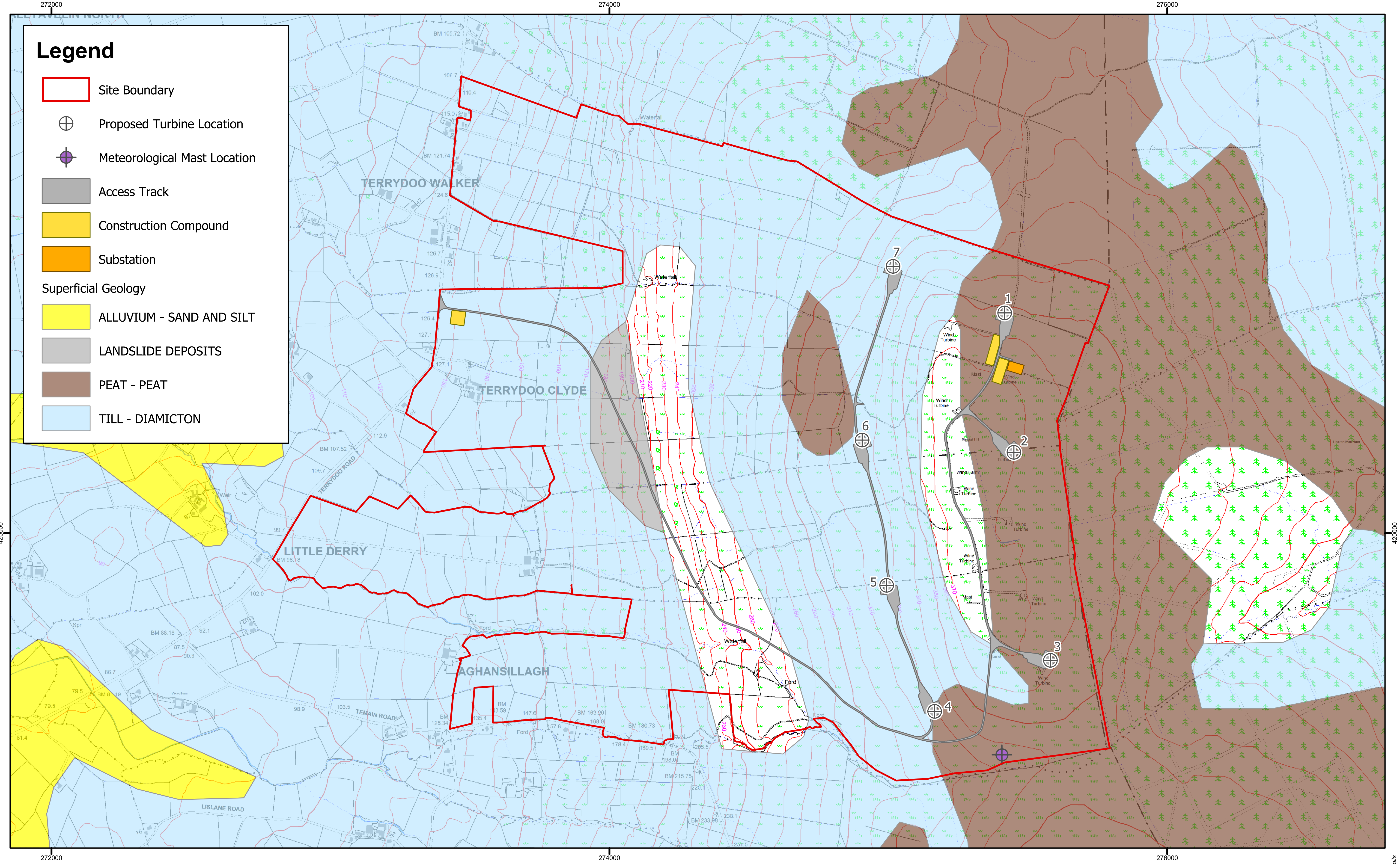
Projection TM

Scale @ A3 1:12,500

Drawing produced by Arcus Consultancy Services

SCOTTISHPOWER RENEWABLES

2607-REP-069 Fig01 Site Layout Plan



Rev	Date	By	Comment
A	08/07/2019	SC	First Issue.

0 0.13 0.25 0.5 km

Rigged Hill Windfarm Repowering
Superficial Soils
Figure 2

SCOTTISHPOWER RENEWABLES

Drawing Number: 2606-REP-070

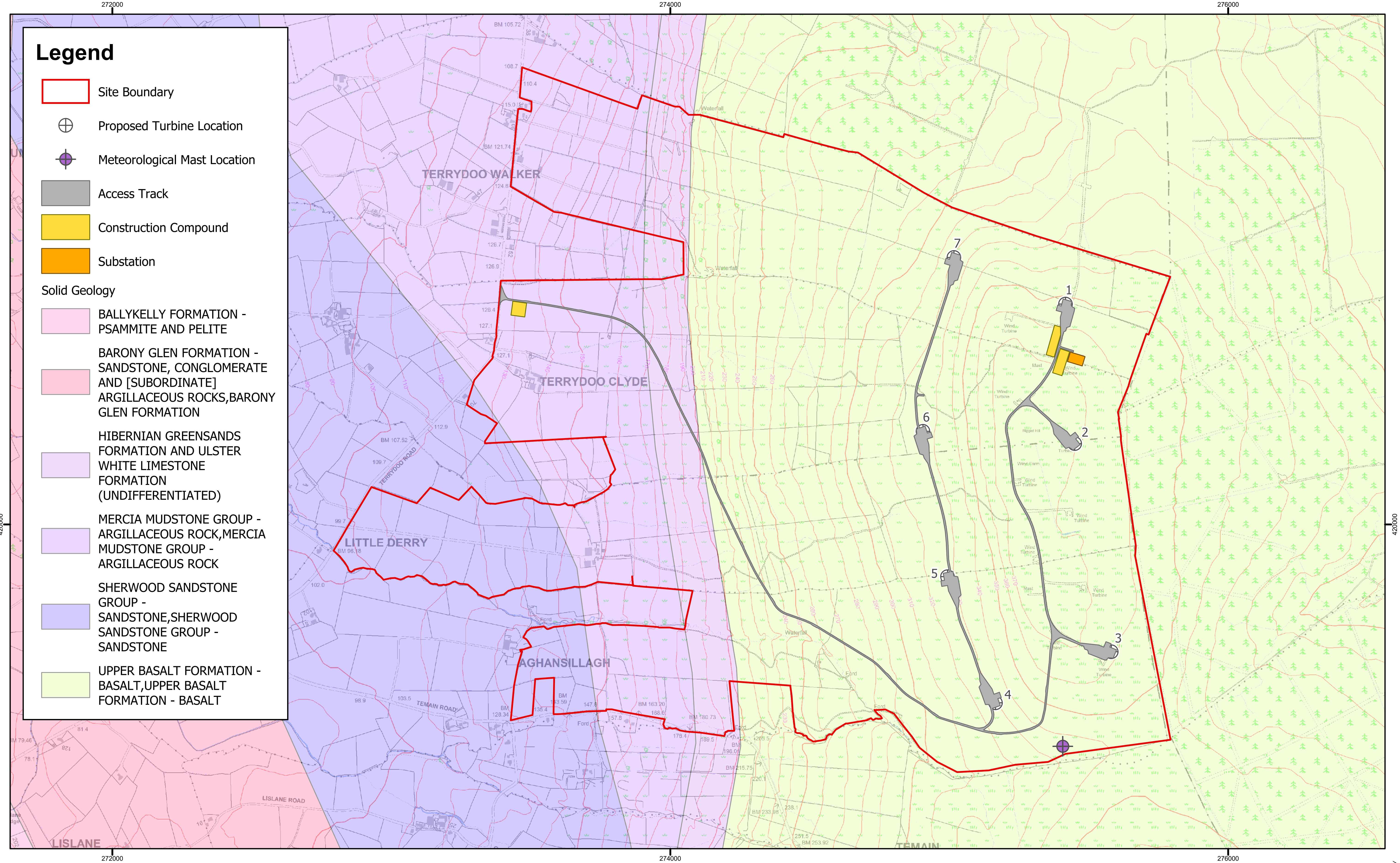
Datum TM65

Projection TM

Scale @ A3 1:12,500

Drawing produced by Arcus Consultancy Services

2607-REP-070 Fig02 Superficial Soils



Rev	Date	By	Comment
A	08/07/2019	SC	First Issue.

0 0.13 0.25 0.5 km

Rigged Hill Windfarm Repowering
Solid Geology
Figure 3

Drawing Number: 2606-REP-071

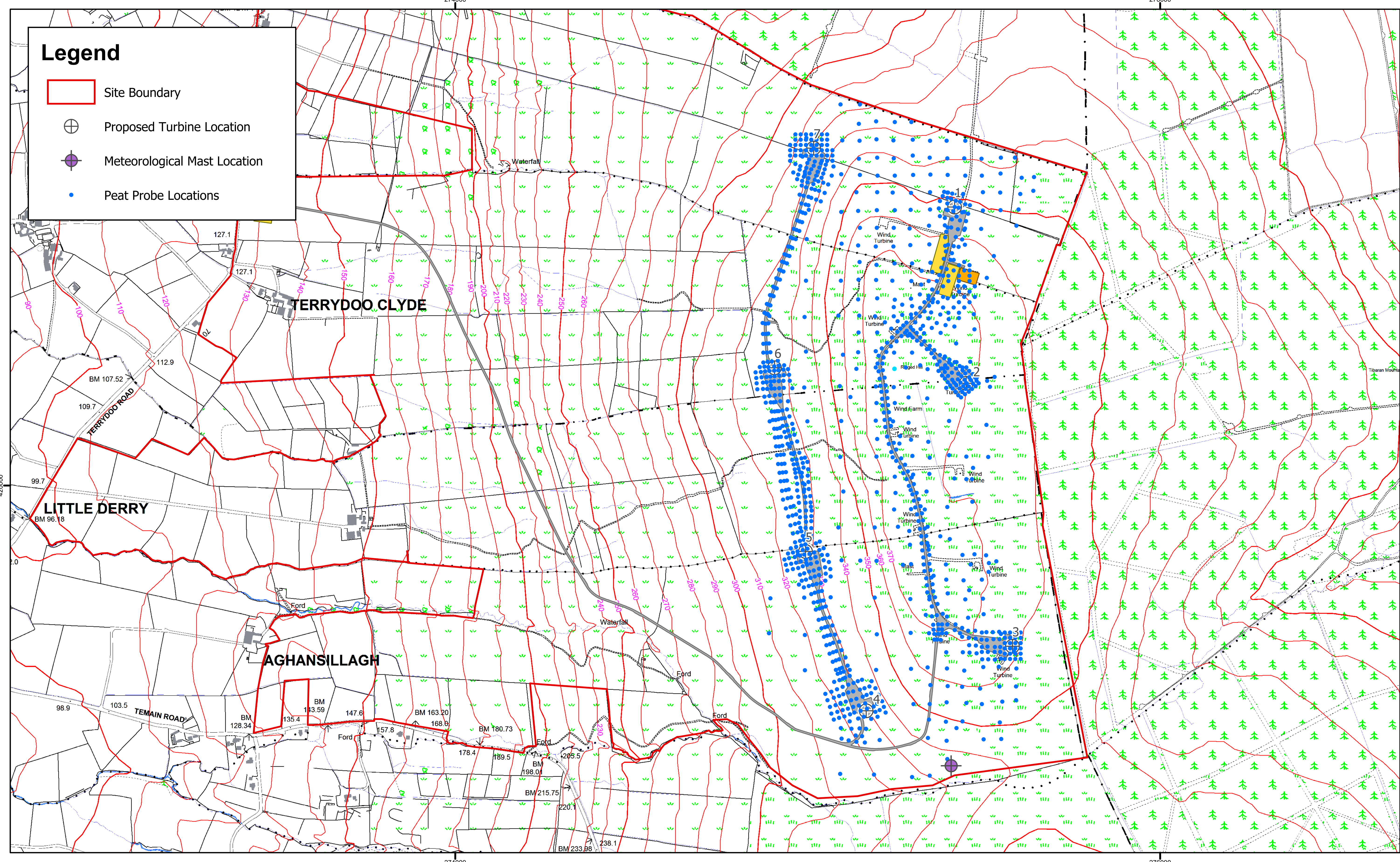
Datum TM65

Projection TM

Scale @ A3 1:12,500

Drawing produced by Arcus Consultancy Services

2607-REP-071 Fig03 Solid Geology



A	08/07/2019	SC	First Issue.
Rev	Date	By	Comment

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Rigged Hill Windfarm Repowering

Peat Probe Locations

Figure 4

Drawing Number: 2606-REP-072

Datum: TM65

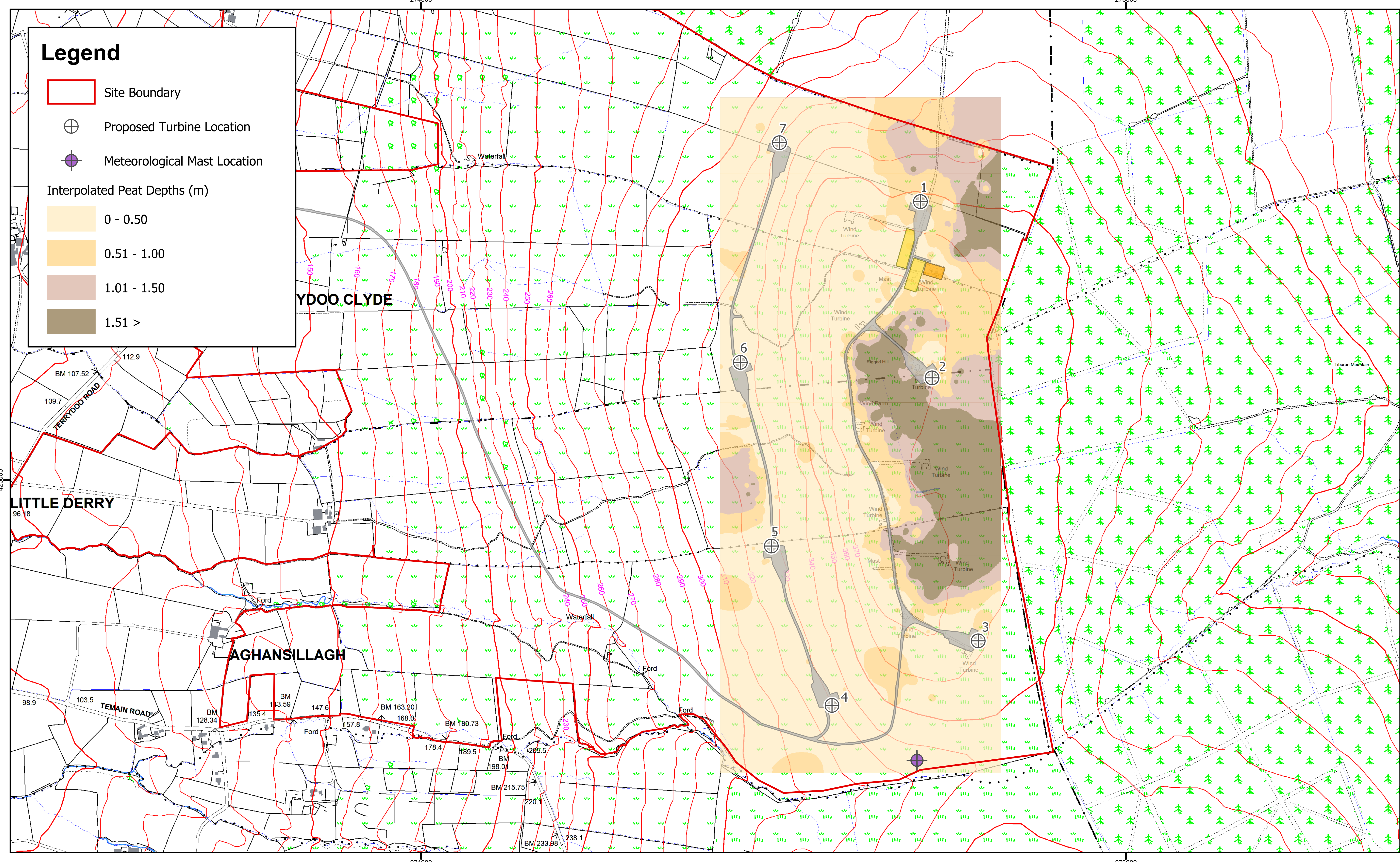
Projection: TM

Scale @ A3: 1:10,000

Drawing produced by Arcus Consultancy Services

SCOTTISHPOWER RENEWABLES

2607-REP-072 Fig04 Peat Probe Locations



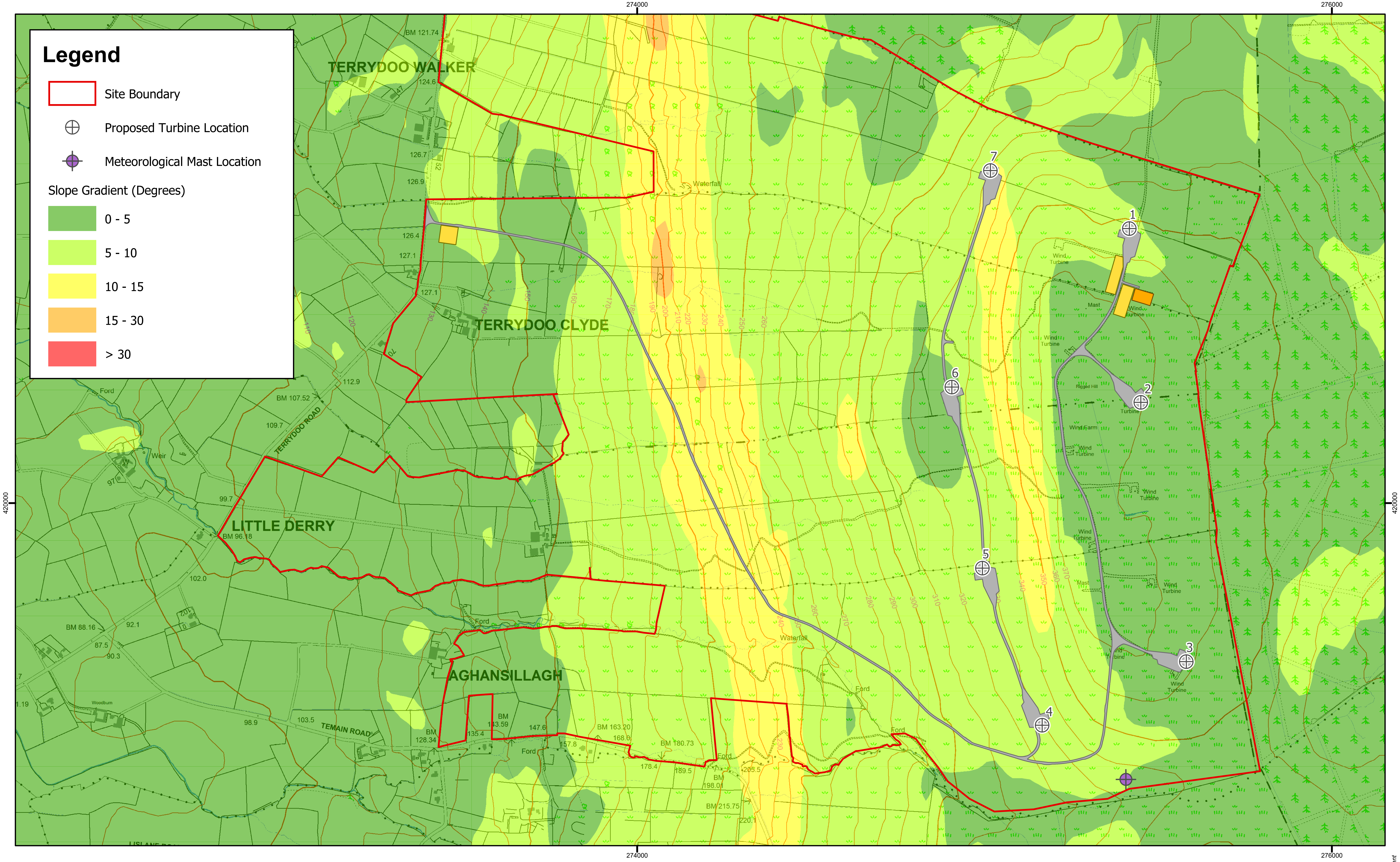
SCOTTISHPOWER RENEWABLES				
	A	08/07/2019	SC	First Issue.
	Rev	Date	By	Comment

0 0.13 0.25 0.5 km

Rigged Hill Windfarm Repowering
Interpolated Peat Depths
Figure 5

Drawing Number: 2607-REP-073	Datum TM65	Projection TM
Scale @ A3 1:10,000	Drawing produced by Arcus Consultancy Services	

2607-REP-073 Fig05 Interpolated Peat Depths



A	08/07/2019	SC	First Issue.
Rev	Date	By	Comment

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SCOTTISHPOWER RENEWABLES

Rigged Hill Windfarm Repowering

Slope Gradient

Figure 6

Drawing Number: 2606-REP-074

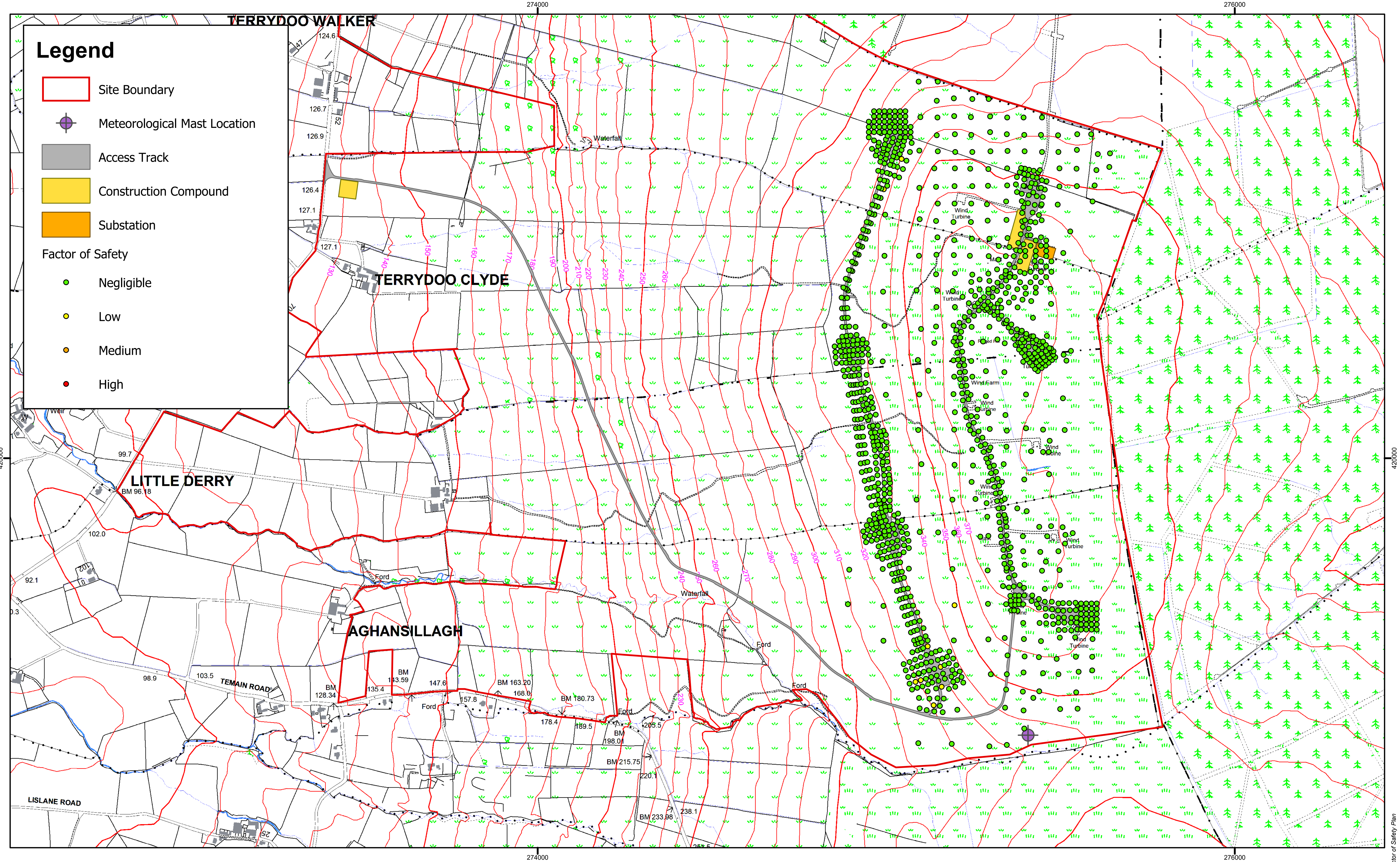
Datum TM65

Projection TM

Scale @ A3 1:10,000

Drawing produced by Arcus Consultancy Services

2607-REP-074 Fig06 Slope Gradient



Rev	Date	By	Comment
A	08/07/2019	SC	First Issue.

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Rigged Hill Windfarm Repowering
Indicative Factor of Safety Plan
Figure 7

Drawing Number: 2607-REP-075

Datum TM65

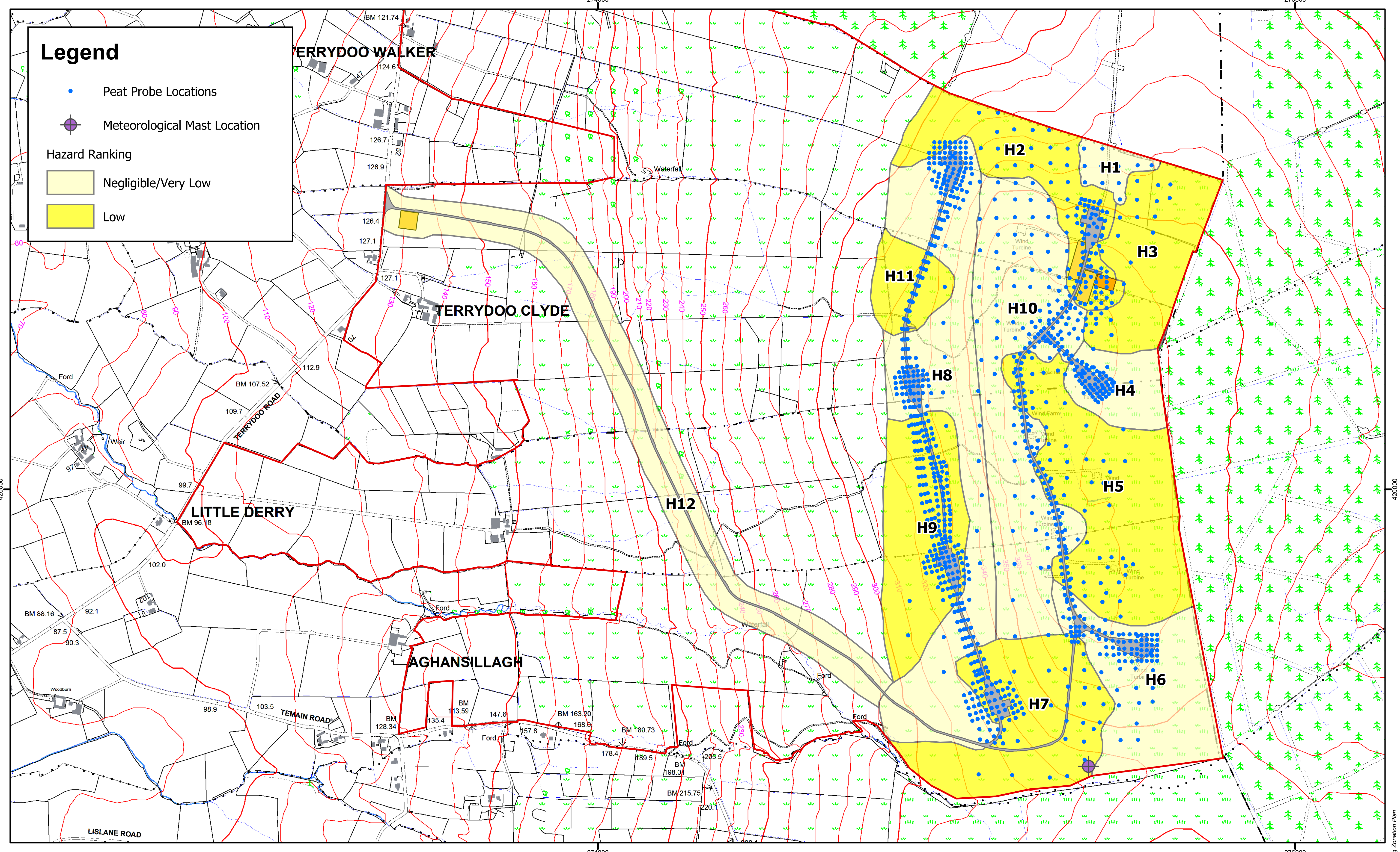
Projection TM

Scale @ A3 1:10,000

Drawing produced by Arcus Consultancy Services

SCOTTISHPOWER RENEWABLES

2607-REP-075 Fig07 Indicative Factor of Safety Plan



A	08/07/2019	SC	First Issue.
Rev	Date	By	Comment

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Rigged Hill Windfarm Repowering

Hazard Ranking Zonation Plan

Figure 8

Drawing Number: 2606-REP-076

Datum TM65

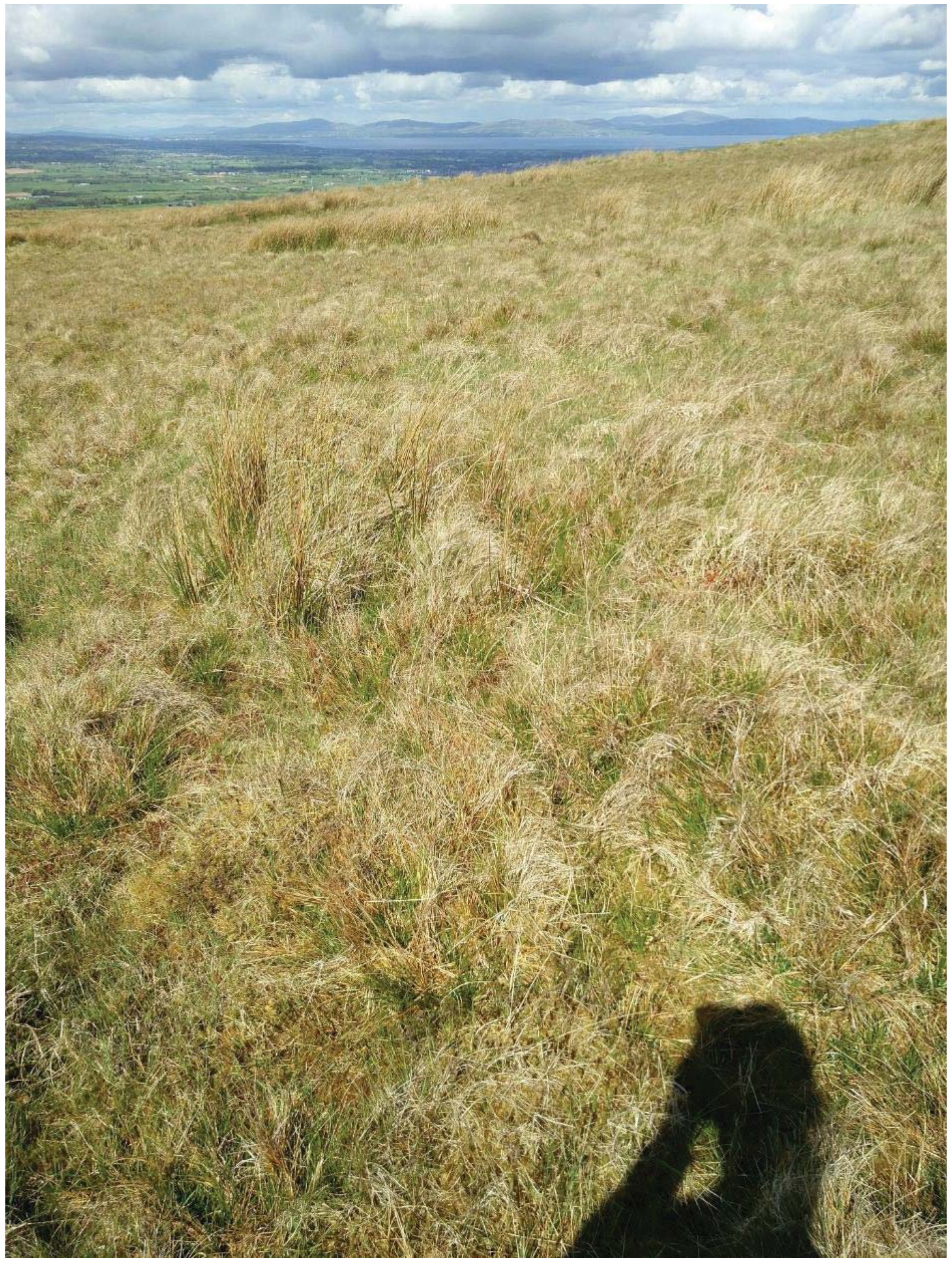
Projection TM

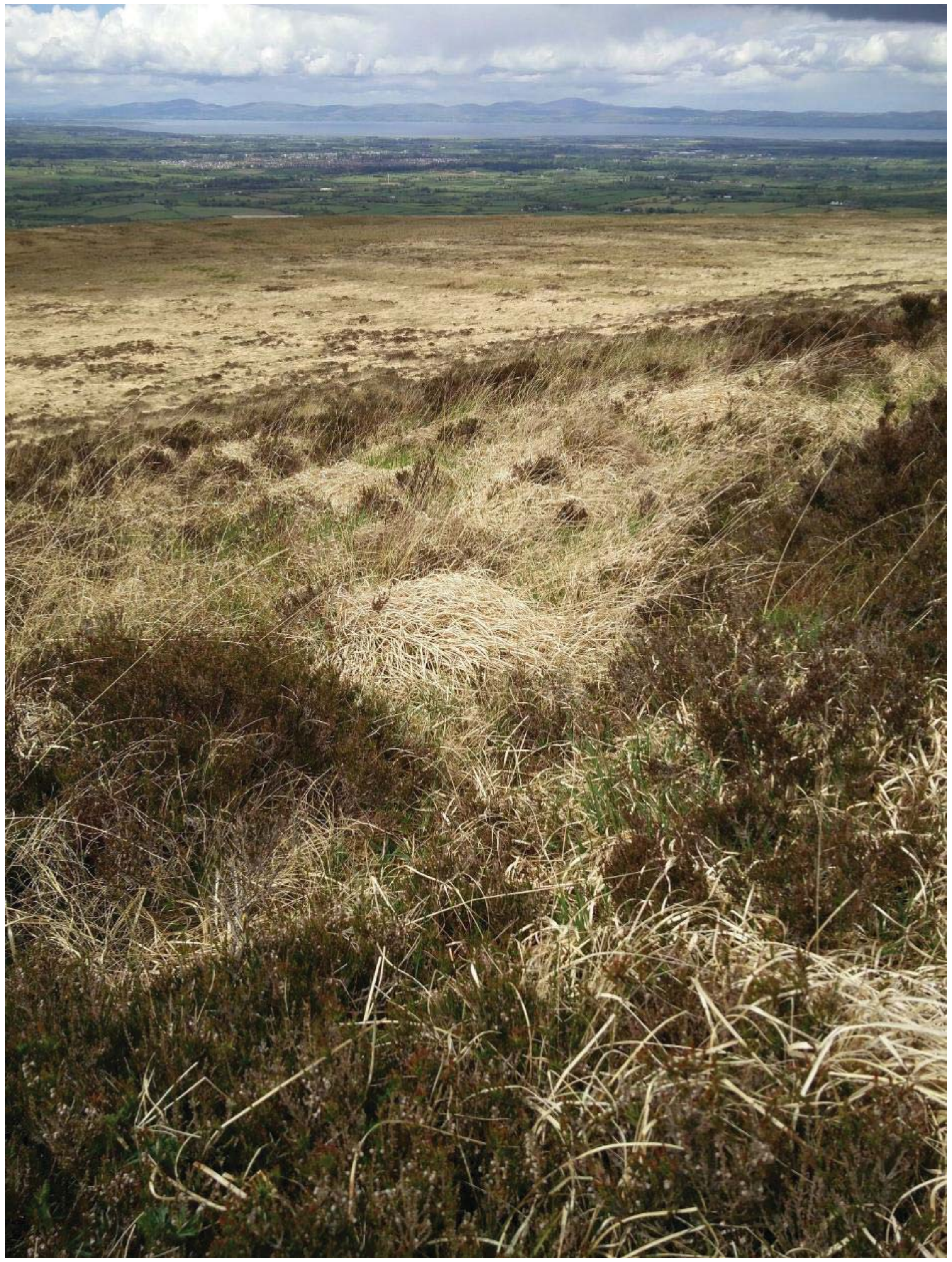
Scale @ A3 1:10,000

Drawing produced by Arcus Consultancy Services

2607-REP-076 Fig08 Hazard Ranking Zonation Plan

APPENDIX B – SITE PHOTOGRAPHS





APPENDIX C - HAZARD RANK ASSESSMENT RECORDS

2607- Rigged Hill Wind Farm Repowering - PSRA - Tabulated Peat Probe Data

ARCUS

ID	X	Y	SLOPE	Slope Co-efficient	PEAT DEPTH	Peat Co-efficient	Gen Substrate	Substrate Co-eff.	Risk Rating Coefficient	Risk Rating Normalisation	Receptor	Receptor Co-eff.	Distance	Receptor Dist Co-eff.	Impact Rating	Impact Rating Normalisation	Hazard Ranking
1	275296	419173	6.18	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	90.47	3	9	2	4
2	275346	419177	5.62	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	101.49	3	9	2	4
3	275188	419180	5.17	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	68.11	3	9	2	4
4	275092	419182	4.57	4	1.00	2	not proven	2	16	3	Wind Farm Layout	3	80.89	3	9	2	6
5	275396	419224	5.52	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	92.21	3	9	2	4
6	275162	419271	7.25	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	14.88	3	9	2	4
7	275138	419273	6.89	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	1.39	4	12	2	4
8	275394	419276	6.51	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	62.81	3	9	2	4
9	275116	419277	6.63	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	5.36	4	12	2	4
10	275204	419278	7.45	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	24.20	3	9	2	4
11	275499	419280	5.50	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	163.07	3	9	2	4
12	275549	419281	4.90	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	211.55	3	9	2	4
13	275096	419282	6.42	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	10.56	3	9	2	4
14	275341	419284	6.70	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	11.80	3	9	2	4
15	275154	419289	7.50	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	2.06	4	12	2	4
16	275136	419291	7.23	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	6.88	4	12	2	4
17	275124	419310	7.39	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	27.30	3	9	2	4
18	275165	419310	7.92	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	5.74	4	12	2	4
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20	275094	419312	6.88	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	38.71	3	9	2	4
21	275422	419312	6.41	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	80.85	3	9	2	4
22	275545	419328	5.08	4	0.20	1	not proven	2	8	2	Roads, Tracks, Paths	2	167.96	3	6	1	2
23	275392	419330	6.30	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	47.95	3	9	2	4
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54	275552	419387	4.39	4	0.50	1	not proven	2	8	2	Roads, Tracks, Paths	2	108.91	3	6	1	2
55	275056	419391	6.96	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	56.63	3	9	2	4
56	275123	419391	8.01	6	0.50	1	not proven	2	12	2	Wind Farm Layout	3	6.19	4	12	2	4
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74	275397	419431	5.04	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	41.98	3	9	2	6
75	275348	419434	5.29	4	0.70	2	not proven	2	16	3	Wind Farm Layout	3	3.06	4	12	2	6
76	275115	419435	8.08	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	3.76	4	12	2	4
77	275130	419440	8.42	6	0.10	1	not proven	2	12	2	Wind Farm Layout	3	2.24	4	12	2	4
78	275075	419443	7.38	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	34.36	3	9	2	4
79	275142	419445	8.65	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	10.44	3	9	2	4
80	275090	419448	7.68	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	19.08	3	9	2	4
81	275100	419452	7.92	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	8.85	4	12	2	4
82	275106	419455	8.07	6	0.10	1	not proven	2	12	2	Wind Farm Layout	3	2.68	4	12	2	4
83	275119	419460	8.37	6	0.10	1	not proven	2	12	2	Wind Farm Layout	3	0.37	4	12	2	4
84	275085	419466	7.70	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	20.86	3	9	2	4
85	275093	419469	7.90	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	12.33	3	9	2	4
86	275102	419472	8.12	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	2.84	4	12	2	4
87	275444	419475	4.52	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	83.36	3	9	2	4
88	274992	419476	6.89	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	105.92	3	9	2	4
89	275080	419477	7.68	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	22.13	3	9	2	4
90	275194	419477	8.98	6	0.00	1	not proven	2	12	2	Wind Farm Layout	3	71.36	3	9	2	4
91	275090	419480	7.92	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	11.69	3	9	2	4
92	275293	419480	7.52	4	0.80	2	not proven	2	16	3	Wind Farm Layout	3	62.60	3	9	2	6
93	275395	419481	5.02	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	34.72	3	9	2	4
94	275592	419481	3.95	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	40.43	3	9	2	2
95	275097	419483	8.10	6	0.70	2	not proven	2	24	3	Wind Farm Layout	3	4.11	4	12	2	6
96	275340	419484	5.34	4	0.70	2	not proven	2	16	3	Wind Farm Layout	3	16.29	3	9	2	6
97	275498	419485	3.72	2	0.30	1	not proven	2	4	1	Roads, Tracks, Paths	2	48.63	3	6	1	1
98	275542	419486	3.65	2	0.10	1	not proven	2	4	1	Roads, Tracks, Paths	2	12.79	3	6	1	1
99	275071	419500	7.64	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	23.39	3	9	2	4
100	275080	419504	7.81	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	13.59	3	9	2	4
101	275531	419506	3.51	2	0.40	1	not proven	2	4	1	Roads, Tracks, Paths	2	9.93	4	8	2	2
102	275531	419506	3.51	2	0.40	1	not proven	2	4	1	Roads, Tracks, Paths	2	9.93	4	8	2	2
103	275089	419507	8.04	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	4.10	4	12	2	4
104	275495	419507	3.63	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	29.76	3	9	2	2
105	275512	419507	3.49	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	23.41	3	9	2	2
106	275548	419509	3.75	2	0.00	1	not proven	2	4	1	Roads, Tracks, Paths	2	4.40	4	8	2	2
107	275062	419523	7.51	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	24.66	3	9	2	4
108	275479	419524	3.69	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	24.33	3	9	2	2
109	275459	419526	3.84	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	38.31	3	9	2	2
110	275072	419527	7.69	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	13.91	3	9	2	4
111	275393	419527	4.66	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	27.77	3	9	2	4
112	275440	419527	3.92	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	49.23	3	9	2	2
113	275494	419528	3.53	2	0.10	1	not proven	2	4	1	Wind Farm Layout	3	10.76	3	9	2	2
114	275511	419528	3.48	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	4.31	4	12	2	2
115	275530	419528	3.59	2	0.00	1	not proven	2	4	1	Wind Farm Layout	3	2.79	4	12	2	2
116	275546	419528	3.80	2	0.00	1	not proven	2	4	1	Wind Farm Layout	3	8.76	4	12	2	2
117	275081	419530	7.86	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	4.42	4	12	2	4
118	275585	419530	4.03	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	5.74	4	12	2	4
119	275494	419542	3.45	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	4.16	4	12	2	2
120	275531	419542	3.64	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	16.15	3	9	2	2
121	275546	419542	3.85	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	20.25	3	9	2	2
122	275510	419543	3.45	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	9.23	4	12	2	2
123	275477	419546	3.49	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	11.45	3	9	2	2
124	275053	419547	7.29	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	25.03	3	9	2	4
125	275458	419547	3.54	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	23.97	3	9	2	2
126	275063	419550	7.45	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	14.63	3	9	2	4
127	275072	419554	7.60	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	4.79	4	12	2	4
128	275377	419562	4.45	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	7.34	4	12	2	6
129	275508	419562	3.37	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	9.04	4	12	2	2
130	275359	419563	4.64	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	4.61	4	12	2	4
131	275367	419563	4.55	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	2.70	4	12	2	4
132	275493	419563	3.33	2	0.00	1	not proven	2	4	1	Wind Farm Layout	3	9.69	4	12	2	2
133	275527	419564	3.59	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	4.98	4	12	2	2
134	275544	419564	3.84	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	0.59	4	12	2	2

1 TO 4	Negligible
5 TO 10	Low
11 TO 16	Medium
17 TO 25	High

135	275476	419566	3.30	2	0.00	1	not proven	2	4	1	Wind Farm Layout	3	0.07	4	12	2	2
136	275457	419568	3.27	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	4.85	4	12	2	2
137	275046	419571	7.11	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	22.15	3	9	2	4
138	275438	419571	3.14	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	9.31	4	12	2	4
139	275055	419574	7.15	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	12.70	3	9	2	4
140	274992	419576	6.88	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	69.67	3	9	2	4
141	275064	419576	7.32	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	3.65	4	12	2	4
142	275077	419577	7.58	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	2.67	4	12	2	4
143	275196	419578	9.31	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	113.90	3	9	2	4
144	275359	419579	4.41	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	6.86	4	12	2	4
145	275370	419579	4.26	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	4.07	4	12	2	4
146	275548	419579	3.87	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	12.44	3	9	2	2
147	274890	419581	8.14	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	160.87	3	9	2	4
148	275344	419581	4.84	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	21.99	3	9	2	6
149	275381	419581	4.08	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	1.43	4	12	2	4
150	275393	419581	3.75	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	9.35	4	12	2	2
151	275432	419581	2.95	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	2.35	4	12	2	2
152	275292	419582	8.33	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	73.69	3	9	2	4
153	275494	419583	3.20	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	10.29	3	9	2	2
154	275507	419584	3.25	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	12.71	3	9	2	2
155	275525	419584	3.49	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	14.68	3	9	2	2
156	275543	419585	3.77	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	18.52	3	9	2	2
157	275455	419588	2.99	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	6.05	4	12	2	2
158	275475	419588	3.07	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	13.18	3	9	2	2
159	275417	419590	3.04	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	0.26	4	12	2	2
160	275357	419591	4.21	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	9.81	4	12	2	4
161	275371	419592	3.99	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	4.15	4	12	2	2
162	275381	419592	3.85	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	6.67	4	12	2	2
163	275039	419595	6.96	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	19.00	3	9	2	4
164	275438	419596	2.74	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	5.98	4	12	2	2
165	275049	419598	7.00	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	8.63	4	12	2	4
166	275056	419600	7.04	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	1.41	4	12	2	4
167	275356	419605	3.92	2	0.00	1	not proven	2	4	1	Wind Farm Layout	3	10.81	3	9	2	2
168	275370	419606	3.70	2	0.00	1	not proven	2	4	1	Wind Farm Layout	3	3.22	4	12	2	2
169	275381	419606	3.55	2	0.00	1	not proven	2	4	1	Wind Farm Layout	3	14.21	3	9	2	2
170	275396	419606	3.20	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	5.92	4	12	2	4
171	275419	419606	2.73	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	6.69	4	12	2	4
172	275031	419619	6.86	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	16.76	3	9	2	4
173	275042	419622	6.92	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	5.48	4	12	2	4
174	275050	419624	6.98	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	2.66	4	12	2	4
175	275455	419625	2.37	2	0.60	2	not proven	2	8	2	Active Peat	6	35.16	3	18	3	6
176	275395	419628	2.70	2	0.80	2	not proven	2	8	2	Active Peat	6	4.55	4	24	3	6
177	275352	419629	3.44	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	12.05	3	9	2	4
178	275366	419632	3.10	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	2.26	4	12	2	2
179	275335	419633	3.97	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	27.87	3	9	2	2
180	275499	419635	2.78	2	0.70	2	not proven	2	8	2	Active Peat	6	30.03	3	18	3	6
181	275383	419636	2.77	2	0.30	1	not proven	2	4	1	Active Peat	6	3.84	4	24	3	3
182	275023	419648	6.81	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	13.95	3	9	2	4
183	275033	419651	6.87	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	3.51	4	12	2	4
184	275042	419654	6.98	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	0.03	4	12	2	4
185	275352	419657	2.79	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	4.70	4	12	2	2
186	275368	419664	2.36	2	0.40	1	not proven	2	4	1	Active Peat	6	5.12	4	24	3	3
187	275017	419668	6.78	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	14.49	3	9	2	4
188	275028	419670	6.85	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	3.33	4	12	2	4
189	275037	419673	6.96	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	0.12	4	12	2	4
190	275345	419677	2.67	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	5.13	4	12	2	2
191	275447	419677	1.54	1	2.10	3	not proven	2	6	2	Active Peat	6	28.33	3	18	3	6
192	275291	419678	7.89	4	0.00	1	not proven	2	8	2	Wind Farm Layout	3	57.18	3	9	2	4
193	275497	419679	2.42	2	1.00	2	not proven	2	8	2	Active Peat	6	11.93	3	18	3	6
194	274894	419680	7.71	4	1.00	2	not proven	2	16	3	Wind Farm Layout	3	126.11	3	9	2	6
195	274990	419682	6.66	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	38.18	3	9	2	4
196	275190	419682	10.19	6	0.30	1	not proven	2	12	2	Roads, Tracks, Paths	2	117.66	3	6	1	2
197	275065	419683	7.54	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	29.60	3	9	2	4
198	275361	419683	2.08	2	0.50	1	not proven	2	4	1	Active Peat	6	4.78	4	24	3	3
199	275345	419685	2.51	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	3.05	4	12	2	2
200	275010	419692	6.70	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	16.64	3	9	2	4
201	275397	419694	1.20	1	0.90	2	not proven	2	4	1	Active Peat	6	0.33	4	24	3	3
202	275020	419696	6.78	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	6.07	4	12	2	4
203	275339	419697	2.48	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	6.25	4	12	2	4
204	275031	419699	6.89	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	0.70	4	12	2	4
205	275356	419700	1.79	1	0.50	1	not proven	2	2	1	Active Peat	6	4.94	4	24	3	3
206	275458	419703	1.54	1	2.10	3	not proven	2	6	2	Active Peat	6	18.42	3	18	3	6
207	274989	419711	6.55	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	29.58	3	9	2	4
208	275003	419715	6.59	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	15.24	3	9	2	4
209	275338	419717	2.03	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	4.00	4	12	2	2
210	275014	419718	6.69	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	4.04	4	12	2	4
211	274975	419719	6.46	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	38.68	3	9	2	4
212	275354	419720	1.43	1	0.50	1	not proven	2	2	1	Active Peat	6	5.49	4	24	3	3
213	275025	419721	6.81	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	7.16	4	12	2	4
214	275037	419723	7.00	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	1.96	4	12	2	4
215	274983	419730	6.41	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	26.68	3	9	2	4
216	275442	419731	1.39	1	2.40	3	not proven	2	6	2	Active Peat	6	31.75	3	18	3	6
217	274995	419733	6.48	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	14.58	3	9	2	4
218	275393	419733	0.79	1	2.10	3	not proven	2	6	2	Active Peat	6	19.40	3	18	3	6
219	275494	419733	2.28	2	2.00	3	not proven	2	12	2	Active Peat	6	20.21	3	18	3	6
220	275336	419737	1.56	1	0.70	2	not proven	2	4	1	Wind Farm Layout	3	3.57	4	12	2	2
221	275008	419738	6.57	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	0.70	4	12	2	4
222	275351	419739	1.17	1	0.60	2	not proven	2	4	1	Active Peat	6	4.93	4	24	3	3
223	275020	419742	6.73	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	11.84	3	9	2	4
224	275357	419744	1.03	1	0.50	1	not proven	2	2	1	Active Peat	6	8.15	4	24	3	3
225	275032	419746	6.90	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	6.43	4	12	2	4
226	274978	419747	6.27	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	23.75	3	9	2	4
227	274990	419751	6.35	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	11.21	3	9	2	4
228	275513	419755	2.72	2	1.80	3	not proven	2	12	2	Active Peat	6	15.51	3	18	3	6
229	275004	419756	6.47	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	3.57	4	12	2	4
230	275331	419757	1.14	1	0.60	2	not proven	2	4	1	Roads, Tracks, Paths	2	5.90	4	8	2	2
231	274942	419759	6.09	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	36.61	3	9	2	4
232	275017	419759	6.66	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	16.57	3	9	2	4
233	275348	419760	0.98	1	0.50	1	not proven	2	2	1	Active Peat	6	4.61	4	24	3	3
234	274958	419763	6.04	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	21.47	3	9	2	4
235	275032	419764	6.89	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	7.31	4	12	2	4
236	274973	419766	6.11	4	0.70	2	not proven	2	16	3	Wind Farm Layout	3	12.16	3	9	2	6
237	274986	419771	6.20	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	9.15	4	12	2	6
238	274938	419775	5.92	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	35.24	3	9	2	4
239	274998	419775	6.34	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	2.95	4	12	2	4
240	275270	419775	7.62	4	0.00	1	not proven	2	8	2	Roads, Tracks, Paths	2	29.93	3	6	1	2
241	275329	419776	0.96	1	1.00	2	not proven	2	4	1	Wind Farm Layout	3	5.81	4	12	2	2
242	275392	419776	1.44	1	2.30	3	not proven	2	6	2	Roads, Tracks, Paths	2	13.46	3	6	1	2
243	275462	419776	2.09	2	2.40	3	not proven	2	12	2	Roads, Tracks, Paths	2	8.51	4	8	2	4
244	275293	419777	5.67	4	0.20	1	not proven	2	8	2	Roads, Tracks, Paths	2	26.80	3	6	1	2
245	274953	419778	5.88	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	19.96	3	9	2	4
246	275009	419778	6.50	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	14.29	3	9	2	4
247	275345	419778	0.90	1	1.00	2	not proven	2	4	1	Active Peat	6	3.92	4	24	3	3
248	274996	419780	6.30	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	1.79	4	12	2	4
249	275514	419780	2.55	2	1.20	2	not proven	2	8	2	Active Peat	6	19.88	3	18	3	6
250	274967	419781	5.95	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	5.66	4	12	2	4
251	275026	419782	6.78	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	10.28	3	9	2	4
252	274980	419785	6.04	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	5.64	4	12	2	4
253	275535	419785	2.70	2	1.80	3	not proven	2	12	2	Active Peat	6	41.45	3	18	3	6
254	275195	419786	10.22	6	0.30	1	not proven	2	12	2	Roads, Tracks, Paths	2	98.09	3	6	1	2
255	275149	419787	11.56	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	111.87	3	9	2	4
256	275096	419788	9.60	6	0.50	1	not proven	2	12	2	Wind Farm Layout	3	59.75	3	9	2	4
257	274934	419790	5.78	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	36.74	3	9	2	4
258	274995	419790	6.25	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	8.48	4	12	2	4
259	275008	419793	6.46	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	18.12	3	9	2	4
260	274947	419794	5.76	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	23.26	3	9	2	4
261	275328	419796	0.73	1	0.80	2	not proven	2	4	1	Wind Farm Layout	3	4.38	4	12	2	2
262	274963	419797	5.82	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	6.99	4	12	2	4
263	275022	419797	6.69	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	11.78	3	9	2	4
264	274978	419801	5.96	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	1.75	4	12	2	4
265	275506	419802	2.24	2	1.20	2	not proven	2	8	2	Active Peat	6	17.05	3	18	3	6
266	275345	419803	0.87	1	1.80	3	not proven	2	6	2	Active Peat	6	3.28	4	24	3	6
267	275439	419803	1.95	1	2.10	3	not proven	2	6	2	Active Peat	6	10.57	3	18	3	6
268	274972	419804	5.88	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	5.69	4	12	2	4
269	274990	419804	6.13	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	7.80	4	12	2	4
270	275473	419805	2.02	2	2.00	3	not proven	2	12	2	Active Peat	6	11.36	3	18	3	6
271	275005	419806	6.39	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	14.80	3	9	2	4
272	274944	419807	5.66	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	27.49	3	9	2	6
273	274958	419810	5.70	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	17.00	3	9	2	4

274	275018	419810	6.60	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	5.08	4	12	2	4
275	274971	419813	5.84	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	9.45	4	12	2	4
276	275325	419816	1.05	1	1.00	2	not proven	2	4	1	Wind Farm Layout	3	4.94	4	12	2	2
277	274986	419817	6.04	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	6.00	4	12	2	4
278	275343	419818	0.98	1	1.80	3	not proven	2	6	2	Active Peat	6	5.55	4	24	3	6
279	274999	419821	6.27	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	8.21	4	12	2	4
280	274952	419822	5.63	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	26.73	3	9	2	4
281	274967	419826	5.76	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	11.58	3	9	2	4
282	275342	419829	1.17	1	2.00	3	not proven	2	6	2	Active Peat	6	6.58	4	24	3	6
283	274982	419830	5.95	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	4.04	4	12	2	4
284	275290	419832	4.90	4	0.50	1	not proven	2	8	2	Roads, Tracks, Paths	2	33.98	3	6	1	2
285	274993	419833	6.15	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	4.75	4	12	2	4
286	275323	419836	1.55	1	1.10	2	not proven	2	4	1	Wind Farm Layout	3	4.51	4	12	2	2
287	275339	419837	1.19	1	1.60	3	not proven	2	6	2	Active Peat	6	5.10	4	24	3	6
288	274964	419839	5.70	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	20.08	3	9	2	4
289	274978	419843	5.88	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	17.58	3	9	2	4
290	274989	419846	6.07	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	7.95	4	12	2	4
291	275403	419848	2.05	2	0.60	2	not proven	2	8	2	Active Peat	6	55.41	3	18	3	6
292	275322	419856	1.80	1	1.70	3	not proven	2	6	2	Wind Farm Layout	3	3.09	4	12	2	4
293	275376	419856	2.13	2	1.70	3	not proven	2	12	2	Wind Farm Layout	3	44.51	3	9	2	4
294	275336	419857	1.35	1	1.50	2	not proven	2	4	1	Wind Farm Layout	3	4.93	4	12	2	2
295	274958	419864	5.56	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	35.21	3	9	2	4
296	274996	419865	6.19	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	2.48	4	12	2	4
297	274971	419867	5.75	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	21.91	3	9	2	4
298	274982	419870	5.93	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	10.62	3	9	2	4
299	275288	419871	4.38	4	0.30	1	not proven	2	8	2	Roads, Tracks, Paths	2	16.13	3	6	1	2
300	275318	419877	1.85	1	0.00	1	not proven	2	2	1	Wind Farm Layout	3	4.33	4	12	2	2
301	275332	419878	1.07	1	0.30	1	not proven	2	2	1	Wind Farm Layout	3	3.66	4	12	2	2
302	274994	419880	6.16	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	2.08	4	12	2	4
303	275087	419881	9.06	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	88.52	3	9	2	4
304	275190	419881	9.94	6	0.00	1	not proven	2	12	2	Roads, Tracks, Paths	2	112.68	3	6	1	2
305	275256	419883	5.29	4	0.00	1	not proven	2	8	2	Roads, Tracks, Paths	2	46.66	3	6	1	2
306	275340	419883	1.24	1	0.10	1	not proven	2	2	1	Wind Farm Layout	3	12.33	3	9	2	2
307	274951	419887	5.46	4	1.10	2	not proven	2	16	3	Wind Farm Layout	3	40.55	3	9	2	6
308	274964	419891	5.62	4	0.70	2	not proven	2	16	3	Wind Farm Layout	3	27.38	3	9	2	6
309	274975	419894	5.81	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	16.25	3	9	2	4
310	274995	419897	6.21	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	2.13	4	12	2	4
311	275314	419899	1.80	1	0.70	2	not proven	2	4	1	Wind Farm Layout	3	4.54	4	12	2	2
312	275327	419901	0.90	1	0.20	1	not proven	2	2	1	Wind Farm Layout	3	2.61	4	12	2	2
313	274945	419912	5.42	4	1.00	2	not proven	2	16	3	Wind Farm Layout	3	45.38	3	9	2	6
314	274957	419915	5.51	4	0.90	2	not proven	2	16	3	Wind Farm Layout	3	33.26	3	9	2	6
315	274967	419918	5.70	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	23.13	3	9	2	6
316	275310	419918	1.89	1	0.70	2	not proven	2	4	1	Wind Farm Layout	3	4.42	4	12	2	2
317	275324	419921	0.89	1	0.60	2	not proven	2	4	1	Active Peat	6	3.26	4	24	3	3
318	274995	419929	6.37	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	0.62	4	12	2	4
319	275245	419932	4.52	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	64.01	3	9	2	4
320	275332	419932	0.39	1	0.30	1	not proven	2	2	1	Active Peat	6	12.99	3	18	3	3
321	275293	419933	3.17	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	17.27	3	9	2	2
322	274938	419935	5.41	4	1.60	3	not proven	2	24	3	Wind Farm Layout	3	51.13	3	9	2	6
323	275305	419938	2.18	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	4.41	4	12	2	2
324	274951	419939	5.48	4	1.00	2	not proven	2	16	3	Wind Farm Layout	3	37.89	3	9	2	6
325	275396	419939	1.43	1	1.10	2	not proven	2	4	1	Water Feature Minor	6	27.37	3	18	3	3
326	275320	419941	1.08	1	0.60	2	not proven	2	4	1	Active Peat	6	3.52	4	24	3	3
327	274960	419942	5.61	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	28.69	3	9	2	4
328	275467	419954	1.61	1	1.80	3	not proven	2	6	2	Water Feature Minor	6	21.93	3	18	3	6
329	275301	419957	2.44	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	3.57	4	12	2	2
330	274930	419960	5.36	4	1.70	3	not proven	2	24	3	Wind Farm Layout	3	56.80	3	9	2	6
331	275315	419961	1.41	1	0.50	1	not proven	2	2	1	Active Peat	6	3.50	4	24	3	3
332	274943	419964	5.44	4	1.30	2	not proven	2	16	3	Wind Farm Layout	3	43.42	3	9	2	6
333	274953	419966	5.51	4	1.30	2	not proven	2	16	3	Wind Farm Layout	3	33.26	3	9	2	6
334	274993	419968	6.68	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	0.70	4	12	2	4
335	275297	419975	2.58	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	2.86	4	12	2	2
336	275249	419979	3.98	2	0.00	1	not proven	2	4	1	Roads, Tracks, Paths	2	46.39	3	6	1	1
337	275309	419979	1.75	1	0.50	1	not proven	2	2	1	Active Peat	6	2.78	4	24	3	3
338	275196	419981	8.25	6	0.30	1	not proven	2	12	2	Roads, Tracks, Paths	2	34.56	3	6	1	2
339	274989	419982	6.69	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	1.50	4	12	2	4
340	275101	419983	10.59	6	0.20	1	not proven	2	12	2	Roads, Tracks, Paths	2	77.23	3	6	1	2
341	275337	419983	0.34	1	0.80	2	not proven	2	4	1	Active Peat	6	30.62	3	18	3	3
342	274927	419985	5.35	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	56.38	3	9	2	6
343	274938	419987	5.41	4	1.60	3	not proven	2	24	3	Wind Farm Layout	3	45.21	3	9	2	6
344	275292	419987	2.81	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	4.14	4	12	2	2
345	274946	419989	5.49	4	1.60	3	not proven	2	24	3	Wind Farm Layout	3	36.99	3	9	2	6
346	275287	419999	3.05	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	4.84	4	12	2	2
347	274991	420003	7.07	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	3.70	4	12	2	4
348	275301	420004	2.12	2	0.80	2	not proven	2	8	2	Active Peat	6	3.02	4	24	3	6
349	274923	420012	5.29	4	1.10	2	not proven	2	16	3	Wind Farm Layout	3	55.41	3	9	2	6
350	274933	420013	5.34	4	1.60	3	not proven	2	24	3	Wind Farm Layout	3	45.42	3	9	2	6
351	274941	420014	5.46	4	1.20	2	not proven	2	16	3	Wind Farm Layout	3	37.38	3	9	2	6
352	275280	420018	3.34	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	3.82	4	12	2	2
353	275450	420018	2.05	2	2.20	3	not proven	2	12	2	Active Peat	6	12.71	3	18	3	6
354	275466	420018	2.10	2	2.50	3	not proven	2	12	2	Active Peat	6	25.49	3	18	3	6
355	275416	420020	1.68	1	2.00	3	not proven	2	6	2	Active Peat	6	10.83	3	18	3	6
356	275295	420023	2.35	2	0.60	2	not proven	2	8	2	Active Peat	6	3.97	4	24	3	6
357	275247	420025	3.61	2	0.20	1	not proven	2	4	1	Roads, Tracks, Paths	2	27.23	3	6	1	1
358	275299	420031	2.03	2	0.60	2	not proven	2	8	2	Active Peat	6	11.12	3	18	3	6
359	275345	420033	0.62	1	0.50	1	not proven	2	2	1	Active Peat	6	14.55	3	18	3	3
360	275271	420035	3.30	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	4.09	4	12	2	2
361	274920	420036	5.15	4	1.20	2	not proven	2	16	3	Wind Farm Layout	3	52.91	3	9	2	6
362	274983	420036	7.10	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	2.34	4	12	2	4
363	274929	420037	5.20	4	1.10	2	not proven	2	16	3	Wind Farm Layout	3	43.94	3	9	2	6
364	274938	420038	5.36	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	34.97	3	9	2	4
365	275284	420040	2.90	2	0.00	1	not proven	2	4	1	Active Peat	6	1.73	4	24	3	3
366	275469	420050	2.15	2	3.00	3	not proven	2	12	2	Active Peat	6	27.01	3	18	3	6
367	275261	420052	3.20	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	4.44	4	12	2	4
368	275276	420059	2.94	2	0.70	2	not proven	2	8	2	Active Peat	6	2.47	4	24	3	6
369	274916	420061	4.93	4	1.10	2	not proven	2	16	3	Roads, Tracks, Paths	2	36.06	3	6	1	3
370	274926	420061	5.02	4	1.60	3	not proven	2	24	3	Roads, Tracks, Paths	2	37.58	3	6	1	3
371	274970	420061	6.52	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	1.79	4	12	2	4
372	274934	420062	5.15	4	0.90	2	not proven	2	16	3	Wind Farm Layout	3	32.59	3	9	2	6
373	275251	420070	3.12	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	4.30	4	12	2	2
374	275265	420077	2.87	2	0.80	2	not proven	2	8	2	Active Peat	6	4.73	4	24	3	6
375	274992	420079	7.95	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	21.85	3	9	2	4
376	275346	420079	0.90	1	1.40	2	not proven	2	4	1	Water Feature Minor	6	14.49	3	18	3	3
377	275241	420080	3.11	2	0.00	1	not proven	2	4	1	Wind Farm Layout	3	8.10	4	12	2	2
378	275092	420081	10.41	6	0.70	2	not proven	2	24	3	Roads, Tracks, Paths	2	16.50	3	6	1	3
379	275512	420081	1.79	1	2.10	3	not proven	2	6	2	Active Peat	6	73.56	3	18	3	6
380	275195	420082	6.99	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	48.56	3	9	2	4
381	275450	420082	2.17	2	2.00	3	not proven	2	12	2	Active Peat	6	23.93	3	18	3	6
382	275297	420084	1.61	1	0.70	2	not proven	2	4	1	Active Peat	6	30.24	3	18	3	3
383	274913	420086	4.73	4	1.10	2	not proven	2	16	3	Roads, Tracks, Paths	2	10.90	3	6	1	3
384	275401	420086	1.51	1	1.00	2	not proven	2	4	1	Active Peat	6	28.36	3	18	3	3
385	274923	420087	4.83	4	1.10	2	not proven	2	16	3	Roads, Tracks, Paths	2	11.55	3	6	1	3
386	274932	420088	4.95	4	1.10	2	not proven	2	16	3	Roads, Tracks, Paths	2	11.21	3	6	1	3
387	274959	420089	5.78	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	1.15	4	12	2	4
388	275237	420095	2.98	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	4.90	4	12	2	4
389	275251	420102	2.81	2	0.60	2	not proven	2	8	2	Active Peat	6	3.51	4	24	3	6
390	274948	420110	5.25	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	5.98	4	12	2	4
391	274910	420111	4.58	4	0.60	2	not proven	2	16	3	Roads, Tracks, Paths	2	14.26	3	6	1	3
392	274919	420111	4.67	4	0.20	1	not proven	2	8	2	Roads, Tracks, Paths	2	13.24	3	6	1	2
393	274928	420113	4.75	4	0.40	1	not proven	2	8	2	Roads, Tracks, Paths	2	13.69	3	6	1	2
394	275230	420118	2.77	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	3.30	4	12	2	2
395	275260	420119	2.54	2	0.30	1	not proven	2	4	1	Active Peat	6	19.13	3	18	3	3
396	275244	420121	2.63	2	0.60	2	not proven	2	8	2	Active Peat	6	4.69	4	24	3	6
397	275342	420124	1.07	1	1.70	3	not proven	2	6	2	Water Feature Minor	6	7.70	4	24	3	6
398	275293	420130	1.54	1	0.80	2	not proven	2	4	1	Active Peat	6	40.15	3	18	3	3
399	275197	420132	6.28	4	0.00	1	not proven	2	8	2	Wind Farm Layout	3	32.00	3	9	2	4
400	274907	420136	4.48	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	38.30	3	9	2	4
401	274916	420137	4.55	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	29.37	3	9	2	4
402	274924	420138	4.60	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	21.40	3	9	2	4
403	275225	420139	2.97	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	3.23	4	12	2	2
404	275262	420140	2.27	2	0.80	2	not proven	2	8	2	Active Peat	6	7.65	4	24	3	6
405	274905	420161	4.44	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	33.38	3	9	2	6
406	274913	420161	4.49	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	25.68	3	9	2	6
407	274921	420163	4.54	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	17.44	3	9	2	6
408	275220	420166	3.15	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	4.67	4	12	2	2
409	275236	420169	2.07	2	0.00	1	not proven	2	4	1	Active Peat	6	3.90	4	24	3	3
410	275507	420172	2.09	2	2.20	3	not proven	2	12	2	Wind Farm Layout	3	113.42	3	9	2	4
411	275286	420178	1.43	1	2.00	3	not proven	2	6	2	Active Peat	6	31.86	3	18	3	6
412	274892	420182	4.26	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	40.13	3	9	2	4

413	274999	420182	8.68	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	56.77	3	9	2	4
414	275242	420182	1.90	1	1.00	2	not proven	2	4	1	Active Peat	6	12.55	3	18	3	3
415	275095	420183	10.64	6	0.30	1	not proven	2	12	2	Roads, Tracks, Paths	2	73.98	3	6	1	2
416	275401	420183	1.61	1	2.70	3	not proven	2	6	2	Water Feature Minor	6	63.66	3	18	3	6
417	275193	420184	6.45	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	29.41	3	9	2	4
418	274901	420186	4.39	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	30.38	3	9	2	4
419	274909	420186	4.48	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	22.69	3	9	2	4
420	275218	420186	3.11	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	4.35	4	12	2	2
421	274917	420188	4.55	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	14.45	3	9	2	4
422	275233	420188	1.89	1	0.50	1	not proven	2	2	1	Active Peat	6	4.35	4	24	3	3
423	275216	420207	3.05	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	3.91	4	12	2	2
424	275230	420208	1.76	1	0.80	2	not proven	2	4	1	Active Peat	6	3.81	4	24	3	3
425	274898	420210	4.35	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	25.86	3	9	2	4
426	274906	420210	4.47	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	19.00	3	9	2	4
427	274913	420211	4.56	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	12.00	3	9	2	4
428	275212	420227	3.30	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	5.57	4	12	2	2
429	275228	420228	1.87	1	0.80	2	not proven	2	4	1	Active Peat	6	4.26	4	24	3	3
430	275195	420234	5.51	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	21.64	3	9	2	4
431	275247	420234	1.71	1	2.30	3	not proven	2	6	2	Active Peat	6	23.85	3	18	3	6
432	274881	420235	4.02	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	22.36	3	9	2	4
433	274895	420236	4.27	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	14.83	3	9	2	4
434	274903	420236	4.41	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	7.26	4	12	2	4
435	274909	420237	4.51	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	1.44	4	12	2	4
436	274922	420239	4.73	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	7.43	4	12	2	4
437	275211	420246	3.34	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	4.36	4	12	2	2
438	275339	420247	0.69	1	2.00	3	not proven	2	6	2	Water Feature Minor	6	19.00	3	18	3	6
439	275226	420248	2.08	2	0.80	2	not proven	2	8	2	Active Peat	6	4.40	4	24	3	6
440	275286	420250	1.50	1	2.20	3	not proven	2	6	2	Water Feature Minor	6	31.70	3	18	3	6
441	275435	420250	2.23	2	1.80	3	not proven	2	12	2	Wind Farm Layout	3	18.83	3	9	2	4
442	275121	420251	10.01	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	93.17	3	9	2	4
443	274877	420252	3.89	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	16.77	3	9	2	2
444	274891	420254	4.15	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	2.84	4	12	2	4
445	274907	420256	4.46	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	6.46	4	12	2	4
446	275427	420256	2.08	2	1.70	3	not proven	2	12	2	Wind Farm Layout	3	18.45	3	9	2	4
447	274921	420257	4.71	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	7.51	4	12	2	4
448	275446	420259	2.44	2	1.30	2	not proven	2	8	2	Wind Farm Layout	3	7.67	4	12	2	4
449	275209	420266	3.49	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	4.04	4	12	2	2
450	275419	420266	1.94	1	2.00	3	not proven	2	6	2	Wind Farm Layout	3	6.48	4	12	2	4
451	275438	420266	2.28	2	1.30	2	not proven	2	8	2	Wind Farm Layout	3	3.93	4	12	2	4
452	275457	420266	2.64	2	0.90	2	not proven	2	8	2	Wind Farm Layout	3	8.30	4	12	2	4
453	275224	420267	2.34	2	0.60	2	not proven	2	8	2	Active Peat	6	4.30	4	24	3	6
454	274857	420273	3.47	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	29.32	3	9	2	2
455	274873	420274	3.78	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	13.79	3	9	2	2
456	274885	420274	4.01	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	2.38	4	12	2	4
457	275448	420274	2.47	2	0.80	2	not proven	2	8	2	Wind Farm Layout	3	3.56	4	12	2	4
458	275466	420274	2.75	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	7.60	4	12	2	2
459	274897	420275	4.25	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	9.34	4	12	2	4
460	274906	420275	4.43	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	17.90	3	9	2	4
461	275411	420275	1.81	1	1.40	2	not proven	2	4	1	Wind Farm Layout	3	3.19	4	12	2	2
462	275431	420275	2.14	2	1.80	3	not proven	2	12	2	Wind Farm Layout	3	0.63	4	12	2	4
463	274919	420276	4.68	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	8.54	4	12	2	4
464	274932	420277	4.96	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	4.49	4	12	2	4
465	275393	420277	1.54	1	1.90	3	not proven	2	6	2	Wind Farm Layout	3	15.61	3	9	2	4
466	274990	420278	8.54	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	60.72	3	9	2	4
467	275244	420279	1.96	1	1.90	3	not proven	2	6	2	Active Peat	6	25.40	3	18	3	6
468	275517	420280	1.99	1	1.70	3	not proven	2	6	2	Wind Farm Layout	3	48.11	3	9	2	4
469	275193	420281	5.44	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	18.19	3	9	2	4
470	275457	420281	2.63	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	3.48	4	12	2	2
471	275091	420282	10.19	6	0.40	1	not proven	2	12	2	Roads, Tracks, Paths	2	117.41	3	6	1	2
472	275441	420282	2.33	2	0.70	2	not proven	2	8	2	Wind Farm Layout	3	10.86	3	9	2	4
473	275476	420282	2.87	2	1.00	2	not proven	2	8	2	Wind Farm Layout	3	7.96	4	12	2	4
474	275206	420283	3.70	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	5.04	4	12	2	2
475	274895	420284	4.20	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	10.22	3	9	2	4
476	275221	420284	2.65	2	0.70	2	not proven	2	8	2	Active Peat	6	3.25	4	24	3	6
477	275404	420284	1.72	1	1.70	3	not proven	2	6	2	Wind Farm Layout	3	2.64	4	12	2	4
478	275422	420284	2.00	2	1.20	2	not proven	2	8	2	Wind Farm Layout	3	9.52	4	12	2	4
479	275421	420286	1.99	1	1.20	2	not proven	2	4	1	Wind Farm Layout	3	11.63	3	9	2	2
480	275469	420289	2.77	2	1.30	2	not proven	2	8	2	Wind Farm Layout	3	1.46	4	12	2	4
481	274855	420290	3.43	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	25.98	3	9	2	2
482	275449	420290	2.49	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	13.61	3	9	2	2
483	275451	420290	2.53	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	12.04	3	9	2	2
484	275485	420290	2.82	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	16.14	3	9	2	2
485	274873	420292	3.77	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	8.24	4	12	2	2
486	275415	420292	1.92	1	1.10	2	not proven	2	4	1	Wind Farm Layout	3	10.95	3	9	2	2
487	275433	420292	2.20	2	1.00	2	not proven	2	8	2	Wind Farm Layout	3	15.67	3	9	2	4
488	274883	420293	3.97	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	1.58	4	12	2	2
489	275397	420293	1.67	1	1.60	3	not proven	2	6	2	Wind Farm Layout	3	2.55	4	12	2	4
490	274895	420295	4.21	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	13.61	3	9	2	4
491	274905	420296	4.41	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	18.00	3	9	2	4
492	274918	420296	4.68	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	5.70	4	12	2	4
493	274931	420297	4.96	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	6.92	4	12	2	4
494	274949	420297	5.67	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	18.19	3	9	2	4
495	275479	420297	2.89	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	14.26	3	9	2	4
496	275509	420297	2.29	2	1.00	2	not proven	2	8	2	Wind Farm Layout	3	41.12	3	9	2	4
497	275463	420299	2.70	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	2.95	4	12	2	2
498	275410	420300	1.88	1	0.50	1	not proven	2	2	1	Active Peat	6	4.88	4	24	3	3
499	275445	420300	2.43	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	10.55	3	9	2	2
500	275426	420301	2.10	2	0.80	2	not proven	2	8	2	Active Peat	6	16.19	3	18	3	6
501	275204	420303	3.90	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	3.81	4	12	2	2
502	275389	420303	1.63	1	1.50	2	not proven	2	4	1	Wind Farm Layout	3	2.62	4	12	2	2
503	274854	420305	3.43	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	22.30	3	9	2	2
504	275218	420306	2.92	2	0.90	2	not proven	2	8	2	Active Peat	6	3.47	4	24	3	6
505	275475	420306	2.84	2	0.80	2	not proven	2	8	2	Wind Farm Layout	3	14.55	3	9	2	4
506	274869	420307	3.71	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	7.42	4	12	2	2
507	275458	420307	2.65	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	2.74	4	12	2	2
508	275480	420307	2.89	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	18.34	3	9	2	4
509	274883	420308	3.98	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	6.21	4	12	2	2
510	275530	420308	1.57	1	1.70	3	not proven	2	6	2	Wind Farm Layout	3	64.47	3	9	2	4
511	274894	420309	4.20	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	16.98	3	9	2	4
512	274906	420310	4.44	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	15.00	3	9	2	4
513	275436	420310	2.28	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	7.56	4	12	2	2
514	275398	420311	1.78	1	0.20	1	not proven	2	2	1	Active Peat	6	1.88	4	24	3	3
515	274919	420312	4.72	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	5.93	4	12	2	4
516	275381	420312	1.60	1	1.60	3	not proven	2	6	2	Wind Farm Layout	3	3.32	4	12	2	4
517	274932	420313	5.03	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	2.68	4	12	2	4
518	274947	420314	5.68	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	6.67	4	12	2	4
519	275473	420315	2.82	2	1.40	2	not proven	2	8	2	Wind Farm Layout	3	9.63	4	12	2	4
520	275468	420316	2.77	2	0.80	2	not proven	2	8	2	Wind Farm Layout	3	4.80	4	12	2	4
521	275427	420317	2.15	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	6.13	4	12	2	2
522	275447	420318	2.49	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	7.29	4	12	2	2
523	275409	420320	1.96	1	0.00	1	not proven	2	2	1	Active Peat	6	9.14	4	24	3	3
524	274852	420321	3.47	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	22.08	3	9	2	4
525	274867	420322	3.72	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	8.51	4	12	2	2
526	275389	420322	1.76	1	1.30	2	not proven	2	4	1	Active Peat	6	0.11	4	24	3	3
527	274879	420324	3.94	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	2.58	4	12	2	2
528	275201	420324	4.27	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	2.63	4	12	2	4
529	274891	420325	4.18	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	7.31	4	12	2	4
530	275371	420325	1.57	1	2.00	3	not proven	2	6	2	Wind Farm Layout	3	4.30	4	12	2	4
531	275458	420325	2.67	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	2.15	4	12	2	2
532	274905	420326	4.46	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	16.32	3	9	2	4
533	274917	420327	4.71	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	4.64	4	12	2	4
534	275213	420327	3.26	2	1.00	2	not proven	2	8	2	Active Peat	6	1.57	4	24	3	6
535	275439	420327	2.36	2	0.70	2	not proven	2	8	2	Wind Farm Layout	3	4.73	4	12	2	4
536	274931	420329	5.03	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	1.85	4	12	2	4
537	274944	420330	5.64	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	8.95	4	12	2	4
538	275340	420330	1.14	1	2.00	3	not proven	2	6	2	Wind Farm Layout	3	33.89	3	9	2	4
539	275138	420331	8.87	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	63.81	3	9	2	4
540	275246	420331	2.20	2	3.10	3	not proven	2	12	2	Active Peat	6	34.80	3	18	3	6
541	275379	420332	1.74	1	1.50	2	not proven	2	4	1	Wind Farm Layout	3	4.83	4	12	2	2
542	275385	420332	1.80	1	0.00	1	not proven	2	2	1	Active Peat	6	7.79	4	24	3	3
543	275421	420332	2.13	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	1.52	4	12	2	2
544	275396	420333	1.90	1	0.00	1	not proven	2	2	1	Active Peat	6	1.87	4	24	3	3
545	275193	420335	5.21	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	8.68	4	12	2	4
546	275278	420335	1.79	1	2.00	3	not proven	2	6	2	Water Feature Minor	6	50.81	3	18	3	6
547	275439	420335	2.38	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	11.01	3	9	2	2
548	275450	420335	2.56	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	4.67	4	12	2	4
549	274864	420336	3.74	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	18.34	3	9	2	2
550	274888	420336	4.16	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	5.52	4	12	2	4
551	274877	420337	3.96	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	5.31	4	12	2	2

552	274905	420338	4.50	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	10.94	3	9	2	4
553	275431	420339	2.26	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	10.65	3	9	2	2
554	274918	420340	4.78	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	0.50	4	12	2	4
555	274933	420341	5.17	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	9.11	4	12	2	4
556	275319	420341	0.84	1	2.00	3	not proven	2	6	2	Water Feature Minor	6	48.47	3	18	3	6
557	275390	420341	1.88	1	0.80	2	not proven	2	4	1	Active Peat	6	3.37	4	24	3	3
558	275408	420342	2.05	2	0.70	2	not proven	2	8	2	Wind Farm Layout	3	0.76	4	12	2	4
559	275367	420343	1.61	1	1.80	3	not proven	2	6	2	Wind Farm Layout	3	4.99	4	12	2	4
560	275198	420346	4.60	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	3.10	4	12	2	4
561	275212	420346	3.35	2	0.90	2	not proven	2	8	2	Active Peat	6	2.32	4	24	3	6
562	274874	420349	4.00	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	10.67	3	9	2	4
563	275401	420349	2.02	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	0.97	4	12	2	2
564	275417	420350	2.17	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	10.95	3	9	2	2
565	275422	420350	2.21	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	13.81	3	9	2	2
566	274886	420351	4.22	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	0.18	4	12	2	4
567	275461	420351	2.74	2	0.10	1	not proven	2	4	1	Wind Farm Layout	3	22.88	3	9	2	2
568	274898	420352	4.45	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	4.56	4	12	2	4
569	275374	420352	1.74	1	1.30	2	not proven	2	4	1	Wind Farm Layout	3	4.63	4	12	2	2
570	274915	420354	4.79	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	2.38	4	12	2	4
571	275402	420357	2.06	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	8.10	4	12	2	2
572	275387	420361	1.93	1	0.70	2	not proven	2	4	1	Active Peat	6	2.11	4	24	3	3
573	275215	420363	3.19	2	0.80	2	not proven	2	8	2	Active Peat	6	2.26	4	24	3	6
574	275359	420363	1.50	1	2.00	3	not proven	2	6	2	Wind Farm Layout	3	4.49	4	12	2	4
575	275389	420366	1.95	1	1.10	2	not proven	2	4	1	Active Peat	6	7.15	4	24	3	3
576	275201	420368	4.21	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	3.44	4	12	2	4
577	275375	420370	1.76	1	1.50	2	not proven	2	4	1	Active Peat	6	1.05	4	24	3	3
578	275100	420371	9.29	6	0.20	1	not proven	2	12	2	Roads, Tracks, Paths	2	60.40	3	6	1	2
579	275351	420375	1.28	1	2.00	3	not proven	2	6	2	Wind Farm Layout	3	2.71	4	12	2	4
580	274874	420377	4.32	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	7.20	4	12	2	4
581	274884	420377	4.45	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	2.72	4	12	2	4
582	274912	420377	4.91	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	24.51	3	9	2	4
583	275245	420377	2.18	2	2.60	3	not proven	2	12	2	Active Peat	6	22.32	3	18	3	6
584	275296	420377	0.80	1	2.00	3	not proven	2	6	2	Wind Farm Layout	3	38.00	3	9	2	4
585	274894	420378	4.61	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	6.77	4	12	2	4
586	275143	420378	8.22	6	0.10	1	not proven	2	12	2	Wind Farm Layout	3	62.11	3	9	2	4
587	275223	420379	2.74	2	1.00	2	not proven	2	8	2	Active Peat	6	3.78	4	24	3	6
588	274995	420380	10.24	6	0.00	1	not proven	2	12	2	Roads, Tracks, Paths	2	10.10	3	6	1	2
589	275193	420381	4.98	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	15.39	3	9	2	4
590	275359	420384	1.42	1	2.00	3	not proven	2	6	2	Active Peat	6	1.71	4	24	3	6
591	275338	420387	0.88	1	2.00	3	not proven	2	6	2	Wind Farm Layout	3	2.69	4	12	2	4
592	275343	420388	1.00	1	2.00	3	not proven	2	6	2	Active Peat	6	1.16	4	24	3	6
593	275210	420389	3.42	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	4.10	4	12	2	4
594	275236	420395	2.29	2	1.20	2	not proven	2	8	2	Active Peat	6	4.13	4	24	3	6
595	275346	420396	1.02	1	2.00	3	not proven	2	6	2	Wind Farm Layout	3	3.35	4	12	2	4
596	275323	420400	0.59	1	2.00	3	not proven	2	6	2	Wind Farm Layout	3	2.89	4	12	2	4
597	274874	420402	4.70	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	5.30	4	12	2	4
598	274882	420403	4.78	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	2.75	4	12	2	4
599	274890	420403	4.88	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	4.73	4	12	2	4
600	275421	420403	2.44	2	0.50	1	not proven	2	4	1	Active Peat	6	46.08	3	18	3	3
601	275225	420405	2.62	2	0.70	2	not proven	2	8	2	Wind Farm Layout	3	2.80	4	12	2	4
602	275252	420409	2.20	2	0.80	2	not proven	2	8	2	Active Peat	6	5.16	4	24	3	6
603	275331	420409	0.60	1	1.80	3	not proven	2	6	2	Wind Farm Layout	3	3.15	4	12	2	4
604	275310	420411	0.63	1	1.90	3	not proven	2	6	2	Wind Farm Layout	3	2.88	4	12	2	4
605	275239	420420	2.29	2	0.30	1	not proven	2	4	1	Wind Farm Layout	3	3.55	4	12	2	2
606	275298	420420	1.05	1	0.90	2	not proven	2	4	1	Wind Farm Layout	3	1.44	4	12	2	2
607	275319	420420	0.70	1	1.60	3	not proven	2	6	2	Active Peat	6	1.53	4	24	3	6
608	275266	420424	2.00	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	0.38	4	12	2	2
609	275284	420425	1.61	1	0.70	2	not proven	2	4	1	Wind Farm Layout	3	0.17	4	12	2	2
610	275292	420426	1.34	1	0.50	1	not proven	2	2	1	Wind Farm Layout	3	2.46	4	12	2	2
611	274873	420430	5.12	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	4.34	4	12	2	4
612	274881	420430	5.17	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	2.36	4	12	2	4
613	275289	420430	1.48	1	0.00	1	not proven	2	2	1	Active Peat	6	1.51	4	24	3	3
614	274888	420431	5.26	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	4.69	4	12	2	4
615	275330	420432	0.69	1	1.80	3	not proven	2	6	2	Active Peat	6	1.58	4	24	3	6
616	275276	420433	1.86	1	0.70	2	not proven	2	4	1	Active Peat	6	4.20	4	24	3	3
617	275309	420433	0.93	1	0.60	2	not proven	2	4	1	Active Peat	6	4.13	4	24	3	3
618	275144	420434	7.69	4	0.10	1	not proven	2	8	2	Roads, Tracks, Paths	2	76.07	3	6	1	2
619	275197	420434	4.35	4	0.30	1	not proven	2	8	2	Roads, Tracks, Paths	2	36.09	3	6	1	2
620	275254	420436	2.22	2	0.00	1	not proven	2	4	1	Wind Farm Layout	3	4.31	4	12	2	2
621	275281	420439	1.81	1	0.00	1	not proven	2	2	1	Active Peat	6	0.24	4	24	3	3
622	275299	420441	1.29	1	0.60	2	not proven	2	4	1	Active Peat	6	2.13	4	24	3	3
623	275473	420443	3.20	2	1.20	2	not proven	2	8	2	Active Peat	6	75.81	3	18	3	6
624	275320	420444	1.01	1	0.50	1	not proven	2	2	1	Active Peat	6	17.07	3	18	3	3
625	275263	420445	2.10	2	0.00	1	not proven	2	4	1	Wind Farm Layout	3	4.34	4	12	2	2
626	275292	420449	1.58	1	0.60	2	not proven	2	4	1	Active Peat	6	2.34	4	24	3	3
627	275416	420451	2.58	2	2.10	3	not proven	2	12	2	Active Peat	6	20.92	3	18	3	6
628	275271	420454	2.01	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	5.08	4	12	2	2
629	274880	420459	5.52	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	3.42	4	12	2	4
630	274888	420460	5.62	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	0.22	4	12	2	4
631	274872	420461	5.46	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	4.66	4	12	2	4
632	275280	420462	1.93	1	0.40	1	not proven	2	2	1	Wind Farm Layout	3	4.40	4	12	2	2
633	275305	420463	1.47	1	0.60	2	not proven	2	4	1	Active Peat	6	4.42	4	24	3	3
634	275343	420474	1.52	1	0.30	1	not proven	2	2	1	Active Peat	6	20.50	3	18	3	3
635	275294	420475	1.76	1	0.60	2	not proven	2	4	1	Wind Farm Layout	3	3.73	4	12	2	2
636	274991	420478	10.08	6	0.30	1	not proven	2	12	2	Roads, Tracks, Paths	2	73.65	3	6	1	2
637	275191	420480	4.72	4	0.10	1	not proven	2	8	2	Roads, Tracks, Paths	2	58.60	3	6	1	2
638	275244	420480	2.16	2	0.00	1	not proven	2	4	1	Roads, Tracks, Paths	2	33.20	3	6	1	1
639	275318	420480	1.61	1	0.40	1	not proven	2	2	1	Active Peat	6	3.69	4	24	3	3
640	274891	420481	5.85	4	0.10	1	not proven	2	8	2	Roads, Tracks, Paths	2	1.83	4	8	2	4
641	275087	420482	9.69	6	0.30	1	not proven	2	12	2	Roads, Tracks, Paths	2	1.92	4	8	2	4
642	275146	420482	7.79	4	0.10	1	not proven	2	8	2	Roads, Tracks, Paths	2	44.39	3	6	1	2
643	275293	420485	1.84	1	0.20	1	not proven	2	2	1	Wind Farm Layout	3	11.53	3	9	2	2
644	274887	420486	5.84	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	1.46	4	12	2	4
645	275471	420486	3.57	2	0.30	1	not proven	2	4	1	Active Peat	6	57.69	3	18	3	3
646	274882	420487	5.78	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	2.36	4	12	2	4
647	275307	420488	1.71	1	0.40	1	not proven	2	2	1	Wind Farm Layout	3	3.57	4	12	2	2
648	274877	420490	5.72	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	3.12	4	12	2	4
649	275331	420494	1.72	1	0.40	1	not proven	2	2	1	Wind Farm Layout	3	4.51	4	12	2	2
650	275319	420504	1.79	1	0.50	1	not proven	2	2	1	Wind Farm Layout	3	5.11	4	12	2	2
651	275344	420510	1.93	1	0.50	1	not proven	2	2	1	Wind Farm Layout	3	5.00	4	12	2	2
652	274894	420511	6.15	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	2.19	4	12	2	4
653	274889	420513	6.09	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	2.82	4	12	2	4
654	274884	420515	6.03	4	0.70	2	not proven	2	16	3	Wind Farm Layout	3	2.54	4	12	2	6
655	275331	420520	1.92	1	0.60	2	not proven	2	4	1	Wind Farm Layout	3	5.39	4	12	2	2
656	275247	420527	1.74	1	0.20	1	not proven	2	2	1	Wind Farm Layout	3	73.74	3	9	2	2
657	275143	420528	8.26	6	0.10	1	not proven	2	12	2	Roads, Tracks, Paths	2	16.08	3	6	1	2
658	275342	420529	2.08	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	1.42	4	12	2	2
659	275356	420529	2.20	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	4.33	4	12	2	2
660	275293	420530	1.85	1	0.30	1	not proven	2	2	1	Wind Farm Layout	3	41.65	3	9	2	2
661	275197	420531	3.89	2	0.10	1	not proven	2	4	1	Roads, Tracks, Paths	2	58.81	3	6	1	1
662	275397	420531	2.93	2	0.10	1	not proven	2	4	1	Wind Farm Layout	3	4.37	4	12	2	2
663	274903	420537	6.58	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	2.66	4	12	2	4
664	275343	420538	2.17	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	5.45	4	12	2	2
665	274899	420539	6.53	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	1.77	4	12	2	4
666	274893	420540	6.43	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	1.78	4	12	2	4
667	275368	420548	2.59	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	3.71	4	12	2	2
668	275353	420556	2.46	2	0.60	2	not proven	2	8	2	Wind Farm Layout	3	5.81	4	12	2	4
669	274912	420559	6.91	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	4.35	4	12	2	4
670	274907	420561	6.92	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	1.02	4	12	2	4
671	274902	420564	6.88	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	0.71	4	12	2	6
672	275426	420566	3.75	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	11.01	3	9	2	2
673	275294	420580	1.75	1	0.10	1	not proven	2	2	1	Roads, Tracks, Paths	2	38.31	3	6	1	1
674	275343	420580	2.52	2	0.30	1	not proven	2	4	1	Roads, Tracks, Paths	2	25.25	3	6	1	1
675	275366	420580	2.92	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	4.54	4	12	2	2
676	274995	420581	10.12	6	0.50	1	not proven	2	12	2	Wind Farm Layout	3	76.35	3	9	2	4
677	275094	420581	9.91	6	0.30	1	not proven	2	12	2	Roads, Tracks, Paths	2	50.94	3	6	1	2
678	275240	420581	0.98	1	0.80	2	not proven	2	4	1	Roads, Tracks, Paths	2	51.22	3	6	1	1
679	275194	420583	3.93	2	0.10	1	not proven	2	4	1	Roads, Tracks, Paths	2	37.01	3	6	1	1
680	274921	420584	7.20	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	5.11	4	12	2	4
681	275144	420584	8.78	6	0.10	1	not proven	2	12	2	Roads, Tracks, Paths	2	3.13	4	8	2	4
682	274916	420585	7.21	4	1.10	2	not proven	2	16	3	Wind Farm Layout	3	0.05	4	12	2	6
683	274911	420588	7.24	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	0.36	4	12	2	6
684	275508	420589	3.83	2	0.20	1	not proven	2	4	1	Active Peat	6	21.49	3	18	3	3
685	275373	420597	3.29	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	3.75	4	12	2	2
686	274931	420607	7.54	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	7.44	4	12	2	4
687	274924	420610	7.54	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	0.15	4	12	2	4
688	274919	420612	7.55	4	0.70	2	not proven	2	16	3	Wind Farm Layout	3	0.48	4	12	2	6
689	275394	420614	3.84	2	0.40	1	not proven	2	4	1	Wind Farm Layout	3	0.87	4	12	2	2
690	275379	420618	3.80	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	2.35	4	12	2	2

691	275195	420626	4.28	4	0.00	1	not proven	2	8	2	Roads, Tracks, Paths	2	13.87	3	6	1	2
692	274941	420630	8.08	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	9.77	4	12	2	4
693	275246	420630	2.48	2	0.00	1	not proven	2	4	1	Roads, Tracks, Paths	2	2.58	4	8	2	2
694	275296	420630	2.99	2	0.20	1	not proven	2	4	1	Roads, Tracks, Paths	2	10.36	3	6	1	1
695	275348	420632	3.78	2	0.10	1	not proven	2	4	1	Wind Farm Layout	3	6.00	4	12	2	2
696	274933	420633	7.94	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	1.24	4	12	2	4
697	275147	420634	9.05	6	0.30	1	not proven	2	12	2	Roads, Tracks, Paths	2	22.51	3	6	1	2
698	275444	420634	4.49	4	1.00	2	not proven	2	16	3	Wind Farm Layout	3	10.07	3	9	2	6
699	274927	420635	7.87	4	1.00	2	not proven	2	16	3	Wind Farm Layout	3	0.91	4	12	2	6
700	275405	420640	4.47	4	0.00	1	not proven	2	8	2	Wind Farm Layout	3	3.66	4	12	2	4
701	275386	420643	4.48	4	0.00	1	not proven	2	8	2	Wind Farm Layout	3	2.48	4	12	2	4
702	274948	420651	8.52	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	9.88	4	12	2	4
703	275528	420651	4.42	4	2.20	3	not proven	2	24	3	Active Peat	6	34.15	3	18	3	9
704	274941	420653	8.36	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	2.60	4	12	2	4
705	274934	420656	8.20	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	1.02	4	12	2	4
706	275409	420659	4.94	4	0.00	1	not proven	2	8	2	Wind Farm Layout	3	6.97	4	12	2	4
707	275392	420664	5.00	4	1.40	2	not proven	2	16	3	Wind Farm Layout	3	2.48	4	12	2	6
708	274956	420674	8.94	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	10.31	3	9	2	4
709	274950	420677	8.76	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	3.67	4	12	2	4
710	275428	420677	5.29	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	19.96	3	9	2	4
711	274944	420678	8.58	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	2.34	4	12	2	4
712	275193	420678	5.74	4	0.10	1	not proven	2	8	2	Roads, Tracks, Paths	2	36.63	3	6	1	2
713	275243	420678	4.54	4	0.20	1	not proven	2	8	2	Roads, Tracks, Paths	2	42.80	3	6	1	2
714	275414	420679	5.30	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	6.51	4	12	2	4
715	275390	420680	5.28	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	8.80	4	12	2	4
716	275143	420681	9.09	6	0.10	1	not proven	2	12	2	Roads, Tracks, Paths	2	55.73	3	6	1	2
717	275291	420682	4.62	4	0.20	1	not proven	2	8	2	Roads, Tracks, Paths	2	53.88	3	6	1	2
718	275398	420683	5.34	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	0.97	4	12	2	4
719	275446	420683	5.49	4	1.00	2	not proven	2	16	3	Wind Farm Layout	3	29.88	3	9	2	6
720	275345	420684	5.15	4	0.10	1	not proven	2	8	2	Wind Farm Layout	3	23.17	3	9	2	4
721	275096	420686	9.92	6	0.50	1	not proven	2	12	2	Roads, Tracks, Paths	2	91.85	3	6	1	2
722	275438	420698	5.52	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	12.89	3	9	2	4
723	274966	420699	9.64	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	12.02	3	9	2	4
724	274997	420699	11.38	6	0.10	1	not proven	2	12	2	Wind Farm Layout	3	41.47	3	9	2	4
725	274958	420701	9.15	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	3.79	4	12	2	4
726	274952	420704	8.87	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	2.84	4	12	2	4
727	275390	420704	5.58	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	6.20	4	12	2	6
728	275420	420705	5.54	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	0.77	4	12	2	4
729	275393	420720	5.75	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	5.34	4	12	2	4
730	274976	420722	10.33	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	14.35	3	9	2	4
731	274968	420725	9.81	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	5.81	4	12	2	4
732	275444	420725	5.56	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	6.88	4	12	2	4
733	275426	420727	5.61	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	10.98	3	9	2	4
734	274960	420728	9.28	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	2.72	4	12	2	4
735	275492	420728	5.21	4	1.10	2	not proven	2	16	3	Active Peat	6	20.07	3	18	3	9
736	275289	420729	5.95	4	1.00	2	not proven	2	16	3	Roads, Tracks, Paths	2	9.32	4	8	2	6
737	275446	420729	5.55	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	7.71	4	12	2	4
738	275148	420731	8.74	6	0.30	1	not proven	2	12	2	Roads, Tracks, Paths	2	53.90	3	6	1	2
739	275196	420731	6.41	4	0.50	1	not proven	2	8	2	Roads, Tracks, Paths	2	6.94	4	8	2	4
740	275244	420731	5.91	4	0.00	1	not proven	2	8	2	Roads, Tracks, Paths	2	19.05	3	6	1	2
741	275397	420732	5.85	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	1.21	4	12	2	4
742	275407	420732	5.77	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	8.79	4	12	2	4
743	275344	420737	6.29	4	0.30	1	not proven	2	8	2	Roads, Tracks, Paths	2	13.19	3	6	1	2
744	275592	420737	3.80	2	2.20	3	not proven	2	12	2	Active Peat	6	3.65	4	24	3	6
745	275389	420738	5.99	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	9.14	4	12	2	6
746	274984	420747	10.82	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	14.16	3	9	2	4
747	274977	420749	10.38	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	6.88	4	12	2	4
748	275449	420750	5.44	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	4.88	4	12	2	4
749	274970	420752	9.87	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	0.70	4	12	2	4
750	275432	420752	5.59	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	12.02	3	9	2	4
751	275409	420755	5.91	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	7.03	4	12	2	4
752	275389	420759	6.22	4	0.80	2	not proven	2	16	3	Wind Farm Layout	3	6.38	4	12	2	6
753	275422	420763	5.73	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	18.52	3	9	2	4
754	275375	420764	6.41	4	0.80	2	not proven	2	16	3	Wind Farm Layout	3	8.94	4	12	2	6
755	275455	420771	5.22	4	1.00	2	not proven	2	16	3	Wind Farm Layout	3	5.76	4	12	2	6
756	274993	420772	11.15	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	14.91	3	9	2	4
757	274986	420774	10.74	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	7.64	4	12	2	4
758	275438	420775	5.44	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	6.15	4	12	2	4
759	275095	420776	9.62	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	110.58	3	9	2	4
760	275444	420776	5.34	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	1.95	4	12	2	4
761	274979	420777	10.29	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	0.06	4	12	2	4
762	275413	420778	5.85	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	12.71	3	9	2	4
763	275143	420779	8.62	6	0.20	1	not proven	2	12	2	Roads, Tracks, Paths	2	68.69	3	6	1	2
764	275497	420780	4.41	4	0.10	1	not proven	2	8	2	Active Peat	6	30.07	3	18	3	6
765	275196	420781	6.48	4	0.20	1	not proven	2	8	2	Roads, Tracks, Paths	2	25.78	3	6	1	2
766	275247	420781	6.74	4	0.20	1	not proven	2	8	2	Roads, Tracks, Paths	2	30.28	3	6	1	2
767	275397	420781	6.12	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	3.04	4	12	2	4
768	275547	420781	3.87	2	2.20	3	not proven	2	12	2	Active Peat	6	24.66	3	18	3	6
769	275003	420782	11.63	6	0.50	1	not proven	2	12	2	Wind Farm Layout	3	21.30	3	9	2	4
770	275292	420782	7.09	4	0.10	1	not proven	2	8	2	Roads, Tracks, Paths	2	42.40	3	6	1	2
771	275394	420782	6.17	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	2.89	4	12	2	4
772	275347	420783	6.80	4	0.80	2	not proven	2	16	3	Wind Farm Layout	3	39.25	3	9	2	6
773	275598	420783	3.64	2	3.00	3	not proven	2	12	2	Active Peat	6	26.01	3	18	3	6
774	275372	420786	6.47	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	16.01	3	9	2	4
775	275428	420788	5.53	4	0.40	1	not proven	2	8	2	Wind Farm Layout	3	8.81	4	12	2	4
776	275417	420790	5.71	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	13.19	3	9	2	4
777	275002	420795	11.38	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	16.30	3	9	2	4
778	275460	420795	4.97	4	0.60	2	not proven	2	16	3	Roads, Tracks, Paths	2	20.23	3	6	1	3
779	274994	420797	10.90	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	8.07	4	12	2	4
780	275447	420798	5.15	4	0.50	1	not proven	2	8	2	Roads, Tracks, Paths	2	6.91	4	8	2	4
781	274982	420800	10.18	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	1.74	4	12	2	4
782	275396	420800	5.97	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	9.73	4	12	2	4
783	275432	420805	5.33	4	0.80	2	not proven	2	16	3	Wind Farm Layout	3	3.57	4	12	2	6
784	275037	420806	12.02	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	46.12	3	9	2	4
785	275375	420807	6.21	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	24.71	3	9	2	4
786	275420	420808	5.51	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	3.20	4	12	2	6
787	275024	420811	11.84	6	0.50	1	not proven	2	12	2	Wind Farm Layout	3	32.21	3	9	2	4
788	275407	420813	5.65	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	5.22	4	12	2	6
789	275010	420816	11.38	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	17.35	3	9	2	4
790	275396	420816	5.77	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	14.75	3	9	2	4
791	275002	420819	11.03	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	8.82	4	12	2	4
792	275436	420820	5.16	4	0.50	1	not proven	2	8	2	Roads, Tracks, Paths	2	9.66	4	8	2	4
793	275383	420821	5.86	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	28.52	3	9	2	4
794	274988	420822	10.25	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	0.58	4	12	2	4
795	274977	420825	9.60	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	10.81	3	9	2	4
796	275423	420825	5.29	4	0.80	2	not proven	2	16	3	Wind Farm Layout	3	20.37	3	9	2	6
797	275441	420827	5.06	4	0.90	2	not proven	2	16	3	Roads, Tracks, Paths	2	6.75	4	8	2	6
798	275603	420827	2.96	2	0.70	2	not proven	2	8	2	Active Peat	6	36.91	3	18	3	6
799	275410	420828	5.41	4	0.50	1	not proven	2	8	2	Wind Farm Layout	3	20.10	3	9	2	4
800	275048	420830	11.42	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	45.63	3	9	2	4
801	275293	420830	6.53	4	0.00	1	not proven	2	8	2	Roads, Tracks, Paths	2	88.77	3	6	1	2
802	275241	420831	6.26	4	0.20	1	not proven	2	8	2	Roads, Tracks, Paths	2	77.78	3	6	1	2
803	275396	420831	5.53	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	26.15	3	9	2	6
804	275398	420831	5.51	4	0.70	2	not proven	2	16	3	Wind Farm Layout	3	25.26	3	9	2	6
805	275546	420831	3.63	2	1.50	2	not proven	2	8	2	Active Peat	6	72.01	3	18	3	6
806	275138	420832	7.95	4	0.20	1	not proven	2	8	2	Roads, Tracks, Paths	2	101.89	3	6	1	2
807	275197	420832	6.22	4	0.40	1	not proven	2	8	2	Roads, Tracks, Paths	2	74.42	3	6	1	2
808	275347	420832	6.09	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	61.78	3	9	2	6
809	275497	420832	4.32	4	1.00	2	not proven	2	16	3	Roads, Tracks, Paths	2	45.52	3	6	1	3
810	275387	420833	5.61	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	32.92	3	9	2	6
811	275032	420836	11.58	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	30.55	3	9	2	4
812	275640	420836	2.75	2	3.00	3	not proven	2	12	2	Active Peat	6	2.57	4	24	3	6
813	275021	420839	11.33	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	20.63	3	9	2	4
814	275011	420842	11.05	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	10.20	3	9	2	4
815	274995	420846	10.37	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	0.66	4	12	2	4
816	274983	420851	9.77	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	12.00	3	9	2	4
817	275058	420854	10.69	6	0.50	1	not proven	2	12	2	Wind Farm Layout	3	35.80	3	9	2	4
818	275016	420855	11.02	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	6.15	4	12	2	4
819	275044	420859	11.04	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	22.23	3	9	2	4
820	274999	420860	10.43	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	3.12	4	12	2	4
821	275030	420863	11.27	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	12.63	3	9	2	4
822	274984	420864	9.75	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	11.93	3	9	2	4
823	275020	420867	11.00	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	3.34	4	12	2	4
824	274970	420869	9.04	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	26.00	3	9	2	4
825	275002	420872	10.47	6	0.50	1	not proven	2	12	2	Wind Farm Layout	3	5.96	4	12	2	4
826	275039	420873	11.03	6	0.20	1	not proven	2	12	2	Wind Farm Layout	3	9.63	4	12	2	4
827	275607	420873	2.15	2	1.50	2	not proven	2	8	2	Active Peat	6	42.48	3	18	3	6
828	275642	420875	2.31	2	2.80	3	not proven	2	12	2	Active Peat	6	8.65	4	24	3	6
829	274989	420876	9.90	6	0.50	1	not proven	2	12	2	Wind Farm Layout	3	7.10	4	12	2	4

830	275024	420879	10.99	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	4.43	4	12	2	4
831	275068	420879	9.65	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	35.44	3	9	2	4
832	275198	420879	5.75	4	0.00	1	not proven	2	8	2	Roads, Tracks, Paths	2	120.97	3	6	1	2
833	275247	420879	6.03	4	0.10	1	not proven	2	8	2	Roads, Tracks, Paths	2	125.95	3	6	1	2
834	275447	420879	4.58	4	1.00	2	not proven	2	16	3	Roads, Tracks, Paths	2	13.08	3	6	1	3
835	275494	420879	4.04	4	1.10	2	not proven	2	16	3	Roads, Tracks, Paths	2	33.14	3	6	1	3
836	275148	420881	7.36	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	111.06	3	9	2	4
837	275299	420881	6.00	4	0.60	2	not proven	2	16	3	Wind Farm Layout	3	130.35	3	9	2	6
838	275397	420881	4.91	4	1.70	3	not proven	2	24	3	Roads, Tracks, Paths	2	63.11	3	6	1	3
839	274973	420882	9.19	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	23.18	3	9	2	4
840	275348	420882	5.44	4	0.90	2	not proven	2	16	3	Wind Farm Layout	3	95.52	3	9	2	6
841	274992	420883	9.98	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	4.19	4	12	2	4
842	275095	420883	7.80	4	0.30	1	not proven	2	8	2	Wind Farm Layout	3	59.95	3	9	2	4
843	275044	420885	10.85	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	10.75	3	9	2	4
844	275547	420885	2.91	2	1.30	2	not proven	2	8	2	Water Feature Minor	6	67.96	3	18	3	6
845	275005	420886	10.47	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	8.76	4	12	2	4
846	274959	420888	8.56	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	37.26	3	9	2	4
847	274992	420890	9.95	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	4.29	4	12	2	4
848	275028	420890	11.00	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	6.01	4	12	2	4
849	274977	420896	9.36	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	19.37	3	9	2	4
850	275010	420897	10.52	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	13.61	3	9	2	4
851	275048	420897	10.71	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	10.92	3	9	2	4
852	274996	420901	10.05	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	0.44	4	12	2	4
853	275033	420902	10.92	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	4.88	4	12	2	4
854	275073	420905	9.23	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	32.32	3	9	2	4
855	274979	420906	9.43	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	17.51	3	9	2	4
856	275017	420907	10.61	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	20.35	3	9	2	4
857	275051	420910	10.60	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	9.84	4	12	2	4
858	274965	420912	8.91	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	29.23	3	9	2	4
859	275037	420914	10.78	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	4.71	4	12	2	4
860	274999	420915	10.07	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	0.77	4	12	2	4
861	275020	420919	10.59	6	0.30	1	not proven	2	12	2	Wind Farm Layout	3	19.57	3	9	2	4
862	275004	420925	10.17	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	2.51	4	12	2	4
863	275145	420927	7.87	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	96.64	3	9	2	4
864	275493	420927	2.18	2	1.10	2	not proven	2	8	2	Roads, Tracks, Paths	2	29.39	3	6	1	2
865	275244	420928	6.57	4	0.20	1	not proven	2	8	2	Water Feature Minor	6	118.23	3	18	3	6
866	275396	420928	3.91	2	1.30	2	not proven	2	8	2	Roads, Tracks, Paths	2	67.45	3	6	1	2
867	275444	420928	3.04	2	1.00	2	not proven	2	8	2	Roads, Tracks, Paths	2	19.50	3	6	1	2
868	275197	420930	6.94	4	0.30	1	not proven	2	8	2	Water Feature Minor	6	130.95	3	18	3	6
869	275346	420930	5.02	4	1.00	2	not proven	2	16	3	Water Feature Minor	6	113.62	3	18	3	9
870	275548	420930	1.54	1	1.50	2	not proven	2	4	1	Water Feature Minor	6	24.27	3	18	3	3
871	275588	420930	1.46	1	0.30	1	not proven	2	2	1	Water Feature Minor	6	14.25	3	18	3	3
872	274985	420933	9.54	6	0.70	2	not proven	2	24	3	Wind Farm Layout	3	1.49	4	12	2	6
873	275298	420936	5.92	4	0.70	2	not proven	2	16	3	Water Feature Minor	6	98.18	3	18	3	9
874	275147	420978	7.72	4	0.30	1	not proven	2	8	2	Water Feature Minor	6	100.72	3	18	3	6
875	275347	420978	4.55	4	1.50	2	not proven	2	16	3	Water Feature Minor	6	72.86	3	18	3	9
876	275394	420978	3.49	2	1.00	2	not proven	2	8	2	Roads, Tracks, Paths	2	70.29	3	6	1	2
877	275447	420978	2.45	2	0.50	1	not proven	2	4	1	Roads, Tracks, Paths	2	17.29	3	6	1	1
878	275098	420979	7.61	4	0.20	1	not proven	2	8	2	Wind Farm Layout	3	59.04	3	9	2	4
879	275243	420979	6.18	4	0.20	1	not proven	2	8	2	Water Feature Minor	6	69.74	3	18	3	6
880	275298	420981	5.23	4	1.00	2	not proven	2	16	3	Water Feature Minor	6	53.21	3	18	3	9
881	275195	420982	6.76	4	0.40	1	not proven	2	8	2	Water Feature Minor	6	82.56	3	18	3	6
882	274996	420986	9.27	6	0.40	1	not proven	2	12	2	Wind Farm Layout	3	16.85	3	9	2	4
883	275145	421026	6.65	4	0.30	1	not proven	2	8	2	Water Feature Minor	6	56.43	3	18	3	6
884	275247	421031	3.84	2	0.20	1	not proven	2	4	1	Water Feature Minor	6	19.02	3	18	3	3
885	275294	421031	2.87	2	0.50	1	not proven	2	4	1	Water Feature Minor	6	4.96	4	24	3	3
886	275194	421033	5.65	4	0.20	1	not proven	2	8	2	Water Feature Minor	6	34.30	3	18	3	6
887	275093	421081	5.64	4	0.20	1	not proven	2	8	2	Water Feature Minor	6	19.17	3	18	3	6
888	275148	421081	5.90	4	0.40	1	not proven	2	8	2	Water Feature Minor	6	3.35	4	24	3	6
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1003	275589	419523	3.98	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	0.60	4	12	2	2
1004	275604	419523	3.88	2	0.50	1	not proven	2	4	1	Wind Farm Layout	3	14.50	3	9	2	2
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1007	275574	419508	3.96	2	0.20	1	not proven	2	4	1	Wind Farm Layout	3	12.62	3	9	2	2
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Rigged Hill Windfarm Repowering

Technical Appendix A7.2: Outline Water Construction Environmental Management Plan

Volume 3 – Technical Appendix
July 2019

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SCOTTISHPOWER RENEWABLES

TECHNICAL APPENDIX A7.2

WATER CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN FOR RIGGED HILL WINDFARM REPOWERING

SCOTTISHPOWER RENEWABLES

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1 INTRODUCTION

This outline Water Construction Environmental Management Plan (WCEMP) forms an appendix to the Environmental Impact Assessment Report (EIA Report) for Rigged Hill Windfarm Repowering ("the Development"). This WCEMP will be incorporated into the overall Decommissioning/Construction Environmental Management Plan (DCEMP) that will be maintained and updated throughout the decommissioning and construction process as a live document. The DCEMP will be augmented by design specifications and construction documentation and will provide comprehensive information on environmental management appropriate to the stage of development.

Whilst the preparation of the DCEMP is the responsibility of the construction contractor, the outline WCEMP presented in this document is intended to demonstrate measures that will be used across the Development to adequately protect the hydrological environment and related resources. Detailed proposals for such measures will be documented prior to decommissioning/construction and will provide the same or greater protection for the water environment as those described in this document. The measures are proportionate to the risk and, where greater risk is highlighted at specific locations prior to decommissioning/construction, specific measures would be agreed for those locations. This document provides a high level outline WCEMP, and as part of the iterative process, it would be further developed into a DCEMP throughout the decommissioning/construction programme, which will detail the exact location of measures to protect the hydrological environment.

The methods set out in the WCEMP are based on good practice measures for several constructed wind farms and the following guidance:

- Forestry Commission, 'The UK Forestry Standard, 2017[1]';
- Scottish Renewables (SR) and SEPA. Guidance on the Assessment of Peat volumes, Reuse of Excavated Peat and the Minimisation of Waste (2012)[2];
- Scottish Natural Heritage, Good Practice During Wind Farm Construction, (2013)[3];
- The Construction Industry Research and Information Association (CIRIA), 'Environmental Good Practice On Site (C741)' (2015)[4];
- CIRIA, 'Control of Water Pollution from Construction Sites (C532)' (2001)[5];
- Best Practice Guidelines for the Irish Wind Energy Industry[6];
- Standing Advice Note 4 – Pollution Prevention Guidance[7]; and
- Wind Farms and Groundwater Impacts. A guide to EIA and Planning Considerations (2015)[8].

[1] The UK Forestry Standard: Forests and Water [online] Available at: https://www.forestry.gov.uk/pdf/FCFC001.pdf/$FILE/FCFC001.pdf [Accessed 10/01/2019].
[2] SR and SEPA (2012). Guidance on the Assessment of Peat volumes, Reuse of Excavated Peat and the Minimisation of Waste [online] Available at: http://www.scottishrenewables.com/media/uploads/publications/a4_developments_on_peatland.pdf [Accessed 10/01/2019].
[3] SNH (2013) Good Practice During Windfarm Construction, [online] Available at: http://www.snh.gov.uk/docs/A1168678.pdf [Accessed 10/01/2019].
[4] The Construction Industry Research and Information Association (CIRIA), (2015), Environmental Good Practice on Site Guide (C741), CIRIA: London
[5] CIRIA, (2001), Control of Water Pollution from Construction Sites (C532), CIRIA: London.
[6] Irish Wind Energy Association, 2012. Best Practice Guidance for the Irish Wind Energy Industry. Available at: http://www.iwea.com/iweabestpracticeguidelines. [Accessed on 10/01/2019].
[7] DAERA Standing Advice, Pollution Prevention Guidance, 2017. Available at: https://www.daera-ni.gov.uk/sites/default/files/publications/daera/DAERA%20%20Standing%20Advice%20-%20WTR%20-%20Pollution%20preventing%20guidance%20-%20November%202017.pdf. [Accessed on 19/03/2019].
[8] Wind Farms and Groundwater Impacts, Practice Guide. NIEA (2015). Available online at: https://www.planningni.gov.uk/index/advice/northern_ireland_environment_agency_guidance/wind_farms_and_groundwater_impacts-3.pdf. [Accessed on 11/01/2019]

The WCEMP takes into account specific activities during the decommissioning/construction and operational phases of the Development, including:

- Access roads;
- Turbine foundations; and
- Hardstanding areas and buildings (including crane hardstanding, construction compounds and associated infrastructure).

The appropriate methodologies to cover water control and the means of drainage from all hard surfaces and structures within the site are described in the following sections.

2 THE MANAGEMENT OF SEDIMENT AND SURFACE WATERS

This section addresses the management of sediment and surface water run-off generated during the decommissioning/construction phase of the Development, through good practice construction techniques.

Major works will be minimised during heavy precipitation events.

Drainage from the site will include elements of Sustainable Drainage Systems (SuDS) design, where appropriate. SuDS replicate natural drainage patterns and have a number of benefits:

- SuDS will attenuate run-off, thus reducing peak flow and any flooding issues that might arise downstream;
- SuDS will treat run-off, which can reduce sediment and pollutant volumes in run-off before discharging back into natural drainage network; and
- SuDS measures, such as lagoons or retention ponds, correctly implemented will produce suitable environments for wildlife.

2.1 LOCATION OF SILT TRAPS AND SILT MATTING

Silt traps may be utilised to trap and filter sediment-laden run-off from excavation works at the Development, including turbine bases and access roads. They will be installed in drainage ditches but will be sited to avoid slopes with a gradient greater than 1 in 20.

Good practice will be followed prior to placement of silt traps adjacent to watercourses. Silt matting may be placed at the outfall of settlement lagoons to filter sediment during times of heavy rainfall.

The silt traps and silt matting will be monitored by the Ecological Clerk of Works (ECoW) and replaced when necessary.

Plates 1, 2 and 3 of this document display typical silt fencing, silt traps and silt matting.

Plate 1: Typical silt fencing

Plate 2: Typical silt traps

Plate 3: Typical silt mat to be placed at lagoon outfalls

2.2 LOCATION OF CHECK DAMS

Check dams will be installed within drainage ditches at regular intervals, where appropriate. Check dams will facilitate the settlement of suspended solids by slowing the flow of water within the drainage ditches. Appropriately sized stone pitching will be used within the dam in order to provide a rough surface for water within the drainage ditch to pass over.

Plate 4 of this document displays a typical check dam.

Plate 4: Typical check dams - to be installed in drainage ditches adjacent to the access track

2.3 LOCATION OF SETTLEMENT LAGOONS

Settlement lagoons will be implemented, where appropriate, at turbine excavations.

All settlement lagoons will be actively managed to control water levels and ensure that any runoff is contained, especially during times of rainfall. If required to achieve the necessary quality of the final run-off, further measures may include the use of flocculent to further facilitate the settlement of suspended solids. The appropriateness of flocculent use would be discussed with the Northern Ireland Environment Agency (NIEA) prior to its introduction into settlement lagoons

Plate 5 of this document displays a typical settlement lagoon and flocculent station.

Plate 5: Typical lagoon and flocculent station

2.4 OUTFLOW MONITORING FROM SETTLEMENT LAGOONS

Settlement lagoon outflow will be regularly inspected and discharge may be pumped, when required, for maintenance purposes. Any pumping activities will be supervised and authorised by the Infrastructure Contractor's Project Manager.

Treated water will be discharged onto vegetated surfaces and directed away from surface watercourses. Within all the catchments, irrigation techniques, which may include the use of perforated discharge hoses or similar, will be employed to rapidly distribute discharge across a vegetated slope. This will be carried out in consultation with the ECoW.

Plate 6 of this document displays typical pumping operations.

Plate 6: Typical 'Siltbuster' and settlement lagoon

2.5 PROVISION FOR STORM EVENTS

The site itself is not considered to be at risk from flooding. In extreme storm events, there would be elevated levels of run-off from the hardstanding elements of the Development relative to greenfield flow rates, which has the potential to contribute to down-stream, off-site, flood risk. The areas of new hardstanding, in terms of the percentage of the relevant catchments that may be affected, are small.

In the baseline scenario, the water table is not at the ground surface, and hence some infiltration would be expected. The Development proposals could raise the water table, and therefore infiltration would reduce. Notwithstanding this, measures are proposed in this document that would limit run-off rates.

Temporary storage volume for storm run-off from the turbine foundations and crane hardstanding areas would be provided via settlement lagoons.

Along the access tracks, drainage channels on the down-slope would shed track run-off to adjacent rough ground approximately every 30 m, to attenuate flow and allow natural filtration to remove sediments. In areas within 50 m of a watercourse marked on an Ordnance Survey 1:50,000 scale map or where cross-slopes exceed 1 in 20, drainage channels will be bunded and outflow will be monitored daily in areas with on-going construction activity.

2.6 FOUL DRAINAGE

The substation building may house a single toilet facility and / or hand basin for visiting maintenance staff during the operational phase. Should this facility be required rainwater will be collected from the roof of the building via a gutter and inlet pipe to fill a rain water harvesting tank. Waste will be held in a closed system or a septic tank and pumped out as necessary via a tanker. The system shall be designed and approved by NIEA prior to decommissioning/construction.

Effluent and waste from onsite personnel will be treated at a package sewage treatment plant or a septic tank and discharged into a properly designed and sized drainage field, in accordance with GPP4. The system will be designed prior to the decommissioning/construction phase of the Development.

3 THE MANAGEMENT AND MOVEMENT OF FRESH CONCRETE

If concrete batching is carried out on-site, rather than being imported to the site ready-mixed, the following management measures are proposed.

3.1 ACCIDENTAL SPILLAGE WITHIN CONSTRUCTION COMPOUNDS

The construction compound will have a bunded area and this area will be underlain by an impermeable ground membrane layer. The bund will have a 110 % capacity to attenuate stored liquids (including fresh concrete). This will reduce the potential for accidental spillages to contaminate surface water or groundwater. An appropriately sized spill kit(s) will be provided and maintained on site. This will contain materials, such as absorbent granules and pads, absorbent booms and collection bags. These are designed to halt the spread of spillages and will deployed, as necessary, should a spillage occur elsewhere within the construction compounds.

3.2 ACCIDENTAL SPILLAGE OUTSIDE CONSTRUCTION COMPOUNDS

Speed limits for vehicles transporting concrete will be set at a maximum of 15 miles per hour (mph) and will be monitored. Maximum vehicle load capacities will not be exceeded. Although tracks will be maintained in good condition, vehicle loads will be reduced when a rougher surface is identified prior to track maintenance.

Spill kits will also be located at strategic points across the site, as displayed in Plate 7.

Plate 7: Spill Kits to be located across the Development

Measures to manage fresh concrete during pouring operations are described in Section 4.4: Concrete Pouring for Turbine Foundations.

3.3 VEHICLE WASHING

There will be a wash-out facility within the construction area consisting of a sump overlain with an impermeable geosynthetic membrane. The geosynthetic membrane will filter out the concrete fines leaving clean water to pass through to the sump. The sump water will be pumped to a licenced carrier and taken off-site for approved disposal.

No washing of concrete-associated vehicles will be undertaken outside the wash out facilities, and the area will be signposted, with all site contractors informed of the locations.

The frequency of concrete plant washout may also be reduced through the use of retarders.

Plate 8 displays a typical concrete wash-out facility.

Plate 8: Typical concrete washout facility

In the event that plant and wheel washing is required, dry wheel wash facilities and road sweepers will be provided to prevent (as far as is practicable) mud and debris being carried from within the site onto the public road.

Signage will be put in place to direct all vehicles to use wheel wash facilities. The track section between the wash facility and the public road will be surfaced with tarmac or clean hardcore and the area surrounding the facilities will be kept clean and in good condition.

The wheel wash facility, which will work on a closed cycle, shall be operated throughout the decommissioning/construction period. Wheel wash facilities will be located within a designated area of hardstanding at least 50 m from the nearest watercourse or 20 m from the nearest surface drain. It is expected that these facilities shall be sited adjacent to the site entrance, as shown in Plate 9.

Should debris be spread onto the site access or public road adjacent to the wind farm, then road sweepers will be quickly utilised to clean affected areas. Loose debris will also be periodically removed from on-site tracks. Also, all HGVs taking materials to and from the site will be sheeted to prevent the spillage or deposit of material on the highway.

Plate 9: Example of a dry ramp wheel wash facility

3.4 CONCRETE POURING FOR TURBINE FOUNDATIONS

Methods to protect surface and groundwater from the batching and transportation of concrete are considered above.

To prevent pollution it is important that all concrete pours are planned and that specific procedures are adopted where there may be a risk of surface water or groundwater contamination, in accordance with CIRIA C532. These procedures will include:

- Ensuring that all excavations are sufficiently dewatered before concrete pours begin and that dewatering continues while the concrete cures. However, construction good practice will be followed to ensure that fresh concrete is isolated from the dewatering system; and
- Ensuring that covers are available for freshly placed concrete to avoid the surface of the concrete washing away during heavy precipitation.

Typical foundation shuttering is shown in Plate 10 of this document.

Plate 10: Typical wooden shuttering – to be deployed around the turbine foundations during concrete pours

The excavated area will be back-filled with compacted layers of graded material from the original excavation, where this is suitable, and capped with peat or soil. Locally, around the turbines, the finished surface will be capped with crushed aggregate to allow for safe personnel access around the base of the turbine. The management of run-off from these areas is described in Section 3: The Management of Sediment and Surface Waters.

4 HYDROCARBON CONTAMINATION

4.1 VEHICLE MAINTENANCE

During the operation of the excavations, excavation machinery will be regularly maintained to ensure that there is minimal potential for fuel or oil leaks / spillages to occur. All maintenance will be conducted on suitable absorbent spill pads to minimise the potential for groundwater and surface water pollution. All machinery will be equipped with drip pans to contain minor fuel spillage or equipment leakages.

Appointed refuelling personnel will be trained in the correct methods of refuelling on site to ensure that pollution incidents are prevented and a quick response plan is implemented, should a spill occur, to minimise the impact of spills.

Plates 11 and 12 of this document display examples of dip pans and bunds.

Plates 11 and 12: examples of drip trays and bunds

4.2 CHEMICAL STORAGE

Potentially contaminating chemicals stored on site will be kept within a secure bunded area to prevent any accidental spills from affecting hydrological resources. The bunded area will be within the construction compound and will be underlain by an impermeable ground membrane layer to reduce the potential pathways for contaminants to enter watercourses and groundwater. Fuel storage on site will be bunded to 110% capacity.

Oil storage areas will be covered in order to prevent rainwater collecting within the bunded area.

Further detail is presented in Section 4.1: Accidental Spillage within Construction Compounds.

The chemicals storage area would be kept secure to prevent theft of vandalism. A safe system for accessing the storage area would be implemented by the Construction Contractor.

5 EARTHWORKS DRAINAGE

5.1 PRE EARTHWORKS DRAINAGE

Temporary interception bunds and cut-off drainage ditches ('clean water drains') will be constructed upslope of excavations and cuts to prevent surface water runoff entering the excavation.

SuDS measures, such as swales or retention ponds, will be implemented to convey and attenuate excess surface water flow away from cuts and excavations. Swales will be kept to a minimum length, depth and gradient with check dams, silt traps and buffer strips also utilised to minimise erosion, sedimentation at peak flows, where appropriate.

Swales to collect runoff will be placed on the downslope of excavations and overburden / stockpiles and will be designed to treat potentially silty runoff before discharging back into the drainage system.

The use of peat and soil stockpiles will be minimised by earthworks planning. However, where stockpiles are used, silt fences and straw bales wrapped in hessian or semi-permeable lining can be used to intercept sediment laden surface runoff in addition to swales and infiltration trenches.

5.2 EARTHWORKS DRAINAGE

Due to the low permeability of the overlying peaty soil deposits, it is unlikely that groundwater ingress from peat will be significant in earthworks areas. However, the bases of earthworks will have a gravity drainage system and all water will drain to an adequately sized sump.

If dewatering of excavations is necessary, waste water will be treated by designed settlement lagoons and retention ponds. 'Siltbusters' will be used to treat pumped / surplus water from lagoons or retention ponds during periods of heavy or persistent rainfall.

Flocculent could be employed in settlement lagoons and retention ponds to further facilitate the settlement of fine suspended solids before waste water is discharged to rough vegetation.

Waste water discharge onto vegetated surfaces from borrow workings and earthworks areas will be directed away from watercourses and drainage ditches to avoid direct and extended the treatment phases. Any sediment suspended within the treated water will be deposited amongst the rough surface vegetation. The Contractor's site manager will ensure that excessive sediment on vegetated surfaces does not accumulate.

Silt mats may be used at the outfalls of settlement lagoons and retention ponds to further aid the settlement of sediment from earthworks drainage.

During earthworks operations, excavation machinery will be regularly maintained to ensure that there is minimal potential for fuel or oil leaks / spillages to occur. All maintenance will be conducted on a bunded geotextile layer to reduce the potential for groundwater and surface water pollution.

5.3 MANAGEMENT OF DRAINAGE FROM SURPLUS MATERIALS

Careful consideration will be given to the location of topsoil and subsoil storage areas for all areas of the Development during decommissioning/construction. Storage areas will be either in a flat dry area away from watercourses, or be protected by the addition of cut off drains above the storage areas to minimise the ingress of water.

Mineral soils will not be allowed to dry out and silt fences and mats will be employed to minimise sediment levels in run-off.

All stockpiled material will be stored at least 50 m from watercourses in order to reduce the potential from sediment to be transferred into the wider surface water system and will be regularly inspected to ensure that erosion of the material is not taking place.

5.4 DUST SUPPRESSION AND CONTROL

Water needed for dust suppression on the haul roads during periods of dry weather and the compound vehicle wash will be clean water. Clean water may be obtained from re-circulated clean or treated drainage waters.

Where required, water may be extracted from local watercourses or groundwater. In these instances, the Contractor will liaise with NIEA beforehand to agree abstraction locations, rates and authorisation requirements.

Good practice measures will be adopted during decommissioning/construction to control the generation and dispersion of dust such that significant impacts on neighbouring habitats will not occur. The hierarchy for mitigation will be prevention, suppression then containment.

The following mitigation measures will be implemented to control the movement of dust within the Development site:

- Excavation and earthworks areas will be stripped as required in order to minimise exposed areas;
- During excavation works, drop heights from buckets will be minimised to control the fall of materials reducing dust escape;
- Completed earthworks and other exposed areas will be covered with topsoil and re-vegetated as soon as it is practical in order to stabilise surfaces.
- During stockpiling of loose materials, stockpiles shall exist for the shortest possible time;
- Material stockpiles will be low mounds without steep sides or sharp changes in shape;
- Material stockpiles will be located away from the site boundary, sensitive receptors, watercourses and surface drains;
- Material stockpiles will be sited to account for the predominant wind direction and the location of sensitive receptors;
- Water bowsers will be available on site and utilised for dust suppression during roadworks/ vehicle movements when and where required;
- Daily visual inspections will be undertaken to assess need for use of water bowsers; and
- Daily visual inspections will be undertaken to assess the condition of the junction of the site track with the A26 and its approaches.

6 ACCESS TRACK CONSTRUCTION AND USE

Prior to access track construction, site operatives will identify flush areas, depressions or zones which may concentrate water flow so that site drainage design will maintain hydrological connectivity. Site drainage design will be produced in advance of construction.

6.1 MANAGEMENT OF SURFACE WATER

Access tracks will be designed to have adequate cross fall to avoid ponding of rainwater and surface run-off. Run-off from the access tracks and existing drainage ditches will be directed into swales that will be designed to intercept, filtrate and convey the runoff.

Check dams will be installed within the swales and existing drainage ditches in order to increase the attenuation of run-off.

Permanent swales and drainage ditches adjacent to access tracks will have outlets at specified intervals to reduce the volume of water collected in a single channel and, therefore, reduce the potential for erosion. Further measures could include the use of settlement ponds or possibly flocculent to further facilitate the settlement of suspended solids.

The Infrastructure Contractor would be responsible for the management of all surface water run-off, including the design and management of a drainage scheme compliant with SuDS principles. This may include settlement lagoons and retention ponds, incorporating natural or assisted attenuation.

6.2 LOOSE TRACK MATERIAL

Loose material from the use of access tracks will be prevented from entering watercourses by utilising the following measures:

- Silt fences will be erected between areas at risk of erosion and watercourses;
- Silt fences and swales will be inspected daily and cleaned out as required to ensure their continued effectiveness;
- Silt matting if required will be checked daily and replaced as required;
- Excess silt will be disposed of in designated areas at least 50 m away from any watercourses or drainage ditches;
- Cut off ditches will be implemented on slopes greater than 1 in 20;
- Swales and drains will be checked after periods of heavy precipitation;
- The inlets and outlets of settlement lagoons, retention basins and extended detention basins will be checked on a daily basis for blockages;
- The access tracks will be inspected on a daily basis for areas where water collects and ponds; and
- An example of a semi-permeable geotextile layer is shown in Plate 13 of this document.

Plate 13: semi-permeable geotextile layer

6.3 MATERIAL EXCAVATED DURING TRACK CONSTRUCTION

Material excavated during track construction and decommissioning will either be stored adjacent to the track or within agreed spoil deposition areas and compacted in order to limit instability and erosion potential. Peat will not be allowed to dry out by placing any wet catotelmic peat at the bottom of any restoration profile, followed by semi fibrous catotelmic peat and then acrotelmic peat should be placed on top. An appropriate authorisation for any abstraction for re-wetting of peat will be sought from the NIEA in line with the guidance provided in DAERA standing Advice Note regarding abstraction and impoundment[9]. Material will be stored at least 50 m from watercourses in order to reduce the potential for sediment to be transferred into the wider hydrological system. Silt fences will be employed if required to minimise sediment levels in run-off.

Typical overburden stockpile measures are shown in Plate 14 of this document.

Plate 14: Typical overburden stockpile measures

[9] DAERA Standing Advice, Abstractions and Impoundments. 2017. Available at: https://www.daera-ni.gov.uk/sites/default/files/publications/daera/DAERA%20%20Standing%20Advice%20-%20WTR%20%20-%20Abstractions%20and%20Impoundments%20-%20November%202017.pdf. [Accessed 19/03/2019].


6.4 WATERCOURSE CROSSINGS

The use of in-situ fresh concrete in the construction of watercourse crossings will be avoided where possible by the use of pre-cast elements. Existing culverts may be upgraded and anticipated to be replaced with suitable pre-cast culvert designs. Ready-made concrete 'box style' or bottomless arched concrete or plastic culverts will be used.

Prior to access track construction, site operatives will identify flush areas, depressions or zones which may concentrate water flow. These sections may be spanned with plastic pipes if required to ensure hydraulic conductivity under the road, and reduce water flow over the road surface during heavy precipitation.

Culverts will be designed based on best practice[10],[11],[12] in order to minimise effects of developments on the natural integrity and continuity of water courses. The design will incorporate the following criteria:

- Culverts will be well bedded to avoid settlement and protected by an adequate cover of road material;
- The substrate and side/ head walls will be reinforced in order to prevent erosion;
- The culverts will be designed such that it does not cause a barrier to movement of fish or other aquatic fauna;
- Culvert floors will have the same gradient (not exceeding a slope of 3 %) and level, and carry similar bed material and flow, as the original stream;
- There shall be no hydraulic drop at the culvert inlet or outlet;
- The width of the culvert will be greater than the active channel width of the watercourse;
- Culverts will be used to conduct water under the wind farm tracks; and
- Any fences or screens fitted on the inlet or outlet of the culvert will be designed to allow at least 230 mm of space between the bars of the screen of fence, up to the high water level.

[10] *Forest and Water Guidelines, 5th Edition,* Forestry Commission, 2011. [online] Available at: http://www.forestry.gov.uk/website/forestry.nsf/byunique/infd-8bvgx9 [Accessed 17/05/2015].
[11] *Construction of River Crossings,* SEPA, 2008. [online] Available at: http://www.sepa.org.uk/planning.aspx [Accessed 17/05/2016].
[12] Culverting of Water courses: Position Statement, SEPA, 2006. [online] Available at: http://www.sepa.org.uk/planning/engineering-water_environments.aspx [Accessed 17/05/2016].

7 HANDLING OF MINERAL SOILS

7.1 GENERAL GOOD PRACTICE MEASURES

The excavation of each turbine foundation will generate excess material, the majority of which will typically be mineral soils. Excess material from other infrastructure will also be predominantly mineral soils.

As mentioned in Section 7: Access Track Construction and Use of this WCEMP, floating roads are unlikely to be used at the Development, as peat depth is generally less than 0.5 m in track areas and existing wind farm tracks have been use where possible.

At turbine foundations topsoil will be stripped separately to sub soils, where possible aiming to keep the top layer of turf intact. This material will be stored adjacent to the base working area and will be limited in height to 2 m to minimise the risk of overheating. Subsoil will then be stripped and stored, keeping this material separate from the topsoil in accordance with guidance by SNH and SEPA.

In accordance with BS 3882 'Specification for Topsoil and Requirements for Use', any long term stockpiling of topsoil should not exceed 2.0 m in height with a maximum side slope of 1 in 2. In its dry non plastic state, topsoil can be stockpiled in a 'loose tipped' manner and tracked in a compactive method reducing water ingress. Wetter soils can be stored in windrows for drying and later stockpiled for re-use. The re-wetting of peat will be carried out, if there is a potential risk of the peat drying out.

7.2 MEASURES TO PROTECT WETLAND HABITATS AND ABSTRACTIONS

The following measures will ensure that water quality and the flow supply of groundwater and near-surface water are maintained during the decommissioning/construction and operational phase of the Development. Key measures include:

- Silt traps may be deployed to trap and filter sediment-laden run-off throughout the decommissioning/construction phase of the Development;
- Settlement lagoons may be constructed and actively managed to control water levels and ensure that any runoff is contained, especially during times of rainfall. The location and management of the settlement lagoons is essential and will not be sited within vulnerable wetland areas where they may cause drying out and direct loss of habitat;
- Flush areas, depressions or zones which may concentrate water flow, will be identified in advance of construction and a suitable drainage design shall be developed to address each location, to ensure hydraulic connectivity
- Site drainage design will avoid any severance of saturated areas to ensure hydrological connectivity is maintained. Site drainage design will be produced in advance of decommissioning/construction;
- The length of time excavations are kept open and the duration of any dewatering will be minimised;
- All excavations will be sufficiently dewatered before concrete pours begin and that dewatering continues while the concrete cures. However, construction good practice will be followed to ensure that fresh concrete is isolated from the dewatering system; and
- Water from dewatering activities are generally treated by settlement lagoons and will be discharged onto vegetated surfaces, ensuring no net loss of water from the hydrological system. If ponding of water is observed during the discharge onto vegetated surfaces, additional measures may be employed.

8 DISPOSAL OF WASTE MATERIALS

Waste such as timber, metal, general waste and any materials arising from decommissioning *etc*. will be segregated on-site, and disposed of in a licenced waste facility off-site.

9 MONITORING PROGRAMME

A surface water and groundwater monitoring programme will be established prior to the decommissioning/construction phase of the Development. An indicative monitoring programme is set out below.

9.1 SURFACE WATER MONITORING

Surface water monitoring would be undertaken at locations on the principal watercourses downstream of the Development infrastructure and upstream of other non-natural influences, where possible.

Regular visual inspections of surface watercourses are proposed, especially during major excavation works, as these allow rapid identification of changes in levels of suspended solids that could indicate decommissioning/construction related effects are occurring upstream. Potential effects can then be investigated and remedial action taken to prevent further effects, if necessary.

To supplement the visual inspections, it is anticipated that there would be a number of surface water monitoring points for extractive sampling and analysis, Details will be agreed in advance of decommissioning/construction.

The following sampling frequency is proposed in order to establish baseline hydrochemical conditions of surface water constituents:

- Once every month for six months prior to the decommissioning/construction phase.

The following sampling frequencies are proposed in order to monitor surface water conditions against baseline conditions:

- Twice a month during decommissioning/construction works; and
- Twice a month for three months then once a month for a further 3 months during the post decommissioning/construction phase.

Establishing baseline conditions for surface waters will enable any trends in levels of critical parameters to be assessed and deviations from the norm identified and rectified through water management measures.

9.2 MONITORING REPORTING

The results of all laboratory analysis of water samples will be tabulated and reports submitted to the client and contractor on a monthly basis.

9.3 MONITORING PROGRAMME SUMMARY

Any activity proving detrimental to water quality will be detected at the earliest opportunity during the decommissioning/construction and operational phases of the Development. This will allow action to be taken to prevent any further effect on water quality.

10 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this outline WCEMP is to detail appropriate water management measures to control surface water run-off, and drain infrastructure during the decommissioning/construction and operation of Rigged Hill Windfarm. The measures

detailed throughout this report would ensure that any effects on the surface and groundwater environment are minimised.

This document would be adapted to meet the additional requirements of the construction contractor and Ecological Clerk of Works, when appointed, to ensure that all measures implemented are effective and site-specific.

The WCEMP is considered to be a live document, such that modifications can be made following additional information and advice from consultees.

Rigged Hill Windfarm Repowering

Technical Appendix A7.3: Dipwell Monitoring Results

Volume 3 – Technical Appendix
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TECHNICAL APPENDIX A7.3

DIPWELL MONITORING RESULTS
RIGGED HILL WINDFARM REPOWERING

SCOTTISHPOWER RENEWABLES

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1 INTRODUCTION

This Technical Appendix outlines the results of Dipwell monitoring carried out at Rigged Hill Windfarm ('The Development').

Dipwells were installed by ScottishPower Renewables ('the Applicant') during June 2017 in order to measure water levels in peat as part of the active peat assessment detailed in Chapter 8: Ecology.

Dipwell data as provided by the Applicant is detailed in Table 1 and shown graphically in Chart 1.

2 METHODOLOGY

Dipwells have been monitored at the Development by the Applicant during two 'wet' periods (28/06/2017 and 22/05/2018) where significant precipitation was recorded in the preceding 30 days and a dry period (07/06/2018) where minimal precipitation was recorded in the preceding 30 days.

Results are presented as the relative water depth below ground level where the depth to water from the top of the dipwell is subtracted from the height of the dipwell.

The characteristics of the area immediately surrounding the dipwell are detailed as either bog, sloping bog, cultivated bog, old cut or bank.

3 DIPWELL DATA

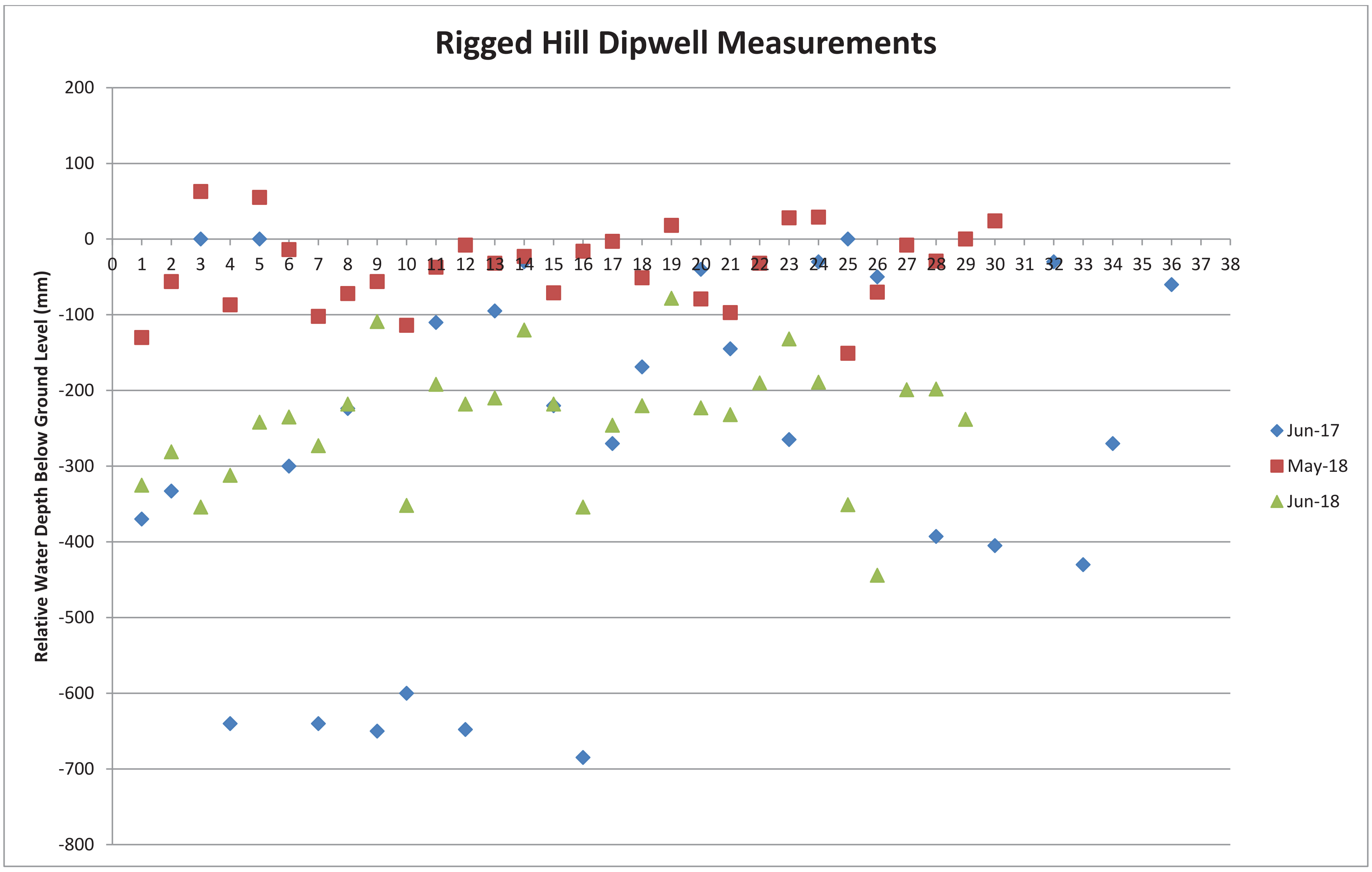
Table 1: Dipwell Data Supplied by the Applicant

Year	Wet Period or Dry Period	Date	14 day mean rainfall percentile	30 day mean rainfall percentile	Dipwell ID	Dipwell Height (mm)	Water Depth (mm)	Relative Water Depth Below Ground Level (mm)	Description of Area
2017	Wet	28/06/2017	16	61	1	70	440	-370	Old cut
2017	Wet	28/06/2017	16	61	2	82	415	-333	Old cut
2017	Wet	28/06/2017	16	61	3	130	130	0	Old cut
2017	Wet	28/06/2017	16	61	4	110	750	-640	Bank
2017	Wet	28/06/2017	16	61	5	140	140	0	Old cut
2017	Wet	28/06/2017	16	61	6	150	450	-300	Bank
2017	Wet	28/06/2017	16	61	7	110	750	-640	Cultivated bog
2017	Wet	28/06/2017	16	61	8	150	374	-224	Cultivated bog
2017	Wet	28/06/2017	16	61	9	100	750	-650	Bog
2017	Wet	28/06/2017	16	61	10	150	750	-600	Bank
2017	Wet	28/06/2017	16	61	11	280	390	-110	Bog
2017	Wet	28/06/2017	16	61	12	102	750	-648	Bog
2017	Wet	28/06/2017	16	61	13	210	305	-95	Old cut
2017	Wet	28/06/2017	16	61	14	150	180	-30	Old cut
2017	Wet	28/06/2017	16	61	15	150	370	-220	Bog
2017	Wet	28/06/2017	16	61	16	65	750	-685	Sloping bog
2017	Wet	28/06/2017	16	61	17	150	420	-270	Bog
2017	Wet	28/06/2017	16	61	18	95	264	-169	Bog

2017	Wet	28/06/2017	16	61	20	180	220	-40	Old cut
2017	Wet	28/06/2017	16	61	21	110	255	-145	Bog
2017	Wet	28/06/2017	16	61	23	15	280	-265	Old cut
2017	Wet	28/06/2017	16	61	24	200	230	-30	Bog
2017	Wet	28/06/2017	16	61	25	135	135	0	Bog
2017	Wet	28/06/2017	16	61	26	100	150	-50	Bog
2017	Wet	28/06/2017	16	61	28	210	603	-393	Bank
2017	Wet	28/06/2017	16	61	30	115	520	-405	Bog
2017	Wet	28/06/2017	16	61	32	190	220	-30	Bog
2017	Wet	28/06/2017	16	61	33	210	640	-430	Bog
2017	Wet	28/06/2017	16	61	34	80	350	-270	Bog
2017	Wet	28/06/2017	16	61	36	70	130	-60	Bog
2018	Wet	22/05/2018	31	10	1	68	198	-130	Old cut
2018	Wet	22/05/2018	31	10	2	78	134	-56	Old cut
2018	Wet	22/05/2018	31	10	3	165	102	63	Old cut
2018	Wet	22/05/2018	31	10	4	86	173	-87	Bank
2018	Wet	22/05/2018	31	10	5	141	86	55	Old cut
2018	Wet	22/05/2018	31	10	6	137	151	-14	Bank
2018	Wet	22/05/2018	31	10	7	102	204	-102	Cultivated bog
2018	Wet	22/05/2018	31	10	8	142	214	-72	Cultivated bog
2018	Wet	22/05/2018	31	10	9	94	150	-56	Bog
2018	Wet	22/05/2018	31	10	10	151	265	-114	Bank
2018	Wet	22/05/2018	31	10	11	279	316	-37	Bog
2018	Wet	22/05/2018	31	10	12	110	118	-8	Bog

2018	Wet	22/05/2018	31	10	13	204	236	-32	Old cut
2018	Wet	22/05/2018	31	10	14	139	162	-23	Old cut
2018	Wet	22/05/2018	31	10	15	132	203	-71	Bog
2018	Wet	22/05/2018	31	10	16	60	76	-16	Sloping bog
2018	Wet	22/05/2018	31	10	17	138	141	-3	Bog
2018	Wet	22/05/2018	31	10	18	131	182	-51	Bog
2018	Wet	22/05/2018	31	10	20	157	139	18	Old cut
2018	Wet	22/05/2018	31	10	21	110	189	-79	Bog
2018	Wet	22/05/2018	31	10	23	147	244	-97	Old cut
2018	Wet	22/05/2018	31	10	24	150	182	-32	Bog
2018	Wet	22/05/2018	31	10	25	118	90	28	Bog
2018	Wet	22/05/2018	31	10	26	98	69	29	Bog
2018	Wet	22/05/2018	31	10	28	191	342	-151	Bank
2018	Wet	22/05/2018	31	10	30	113	183	-70	Bog
2018	Wet	22/05/2018	31	10	32	184	192	-8	Bog
2018	Wet	22/05/2018	31	10	33	193	222	-29	Bog
2018	Wet	22/05/2018	31	10	34	79	79	0	Bog
2018	Wet	22/05/2018	31	10	36	77	53	24	Bog
2018	Dry	07/06/2018	1	3	1	69	394	-325	Old cut
2018	Dry	07/06/2018	1	3	2	79	360	-281	Old cut
2018	Dry	07/06/2018	1	3	3	56	410	-354	Old cut
2018	Dry	07/06/2018	1	3	4	105	417	-312	Bank
2018	Dry	07/06/2018	1	3	5	142	384	-242	Old cut
2018	Dry	07/06/2018	1	3	6	130	365	-235	Bank
2018	Dry	07/06/2018	1	3	7	111	384	-273	Cultivated bog

2018	Dry	07/06/2018	1	3	8	164	382	-218	Cultivated bog
2018	Dry	07/06/2018	1	3	9	91	200	-109	Bog
2018	Dry	07/06/2018	1	3	10	150	502	-352	Bank
2018	Dry	07/06/2018	1	3	11	283	475	-192	Bog
2018	Dry	07/06/2018	1	3	12	101	319	-218	Bog
2018	Dry	07/06/2018	1	3	13	200	410	-210	Old cut
2018	Dry	07/06/2018	1	3	14	138	258	-120	Old cut
2018	Dry	07/06/2018	1	3	15	147	365	-218	Bog
2018	Dry	07/06/2018	1	3	16	56	410	-354	Sloping bog
2018	Dry	07/06/2018	1	3	17	137	383	-246	Bog
2018	Dry	07/06/2018	1	3	18	121	341	-220	Bog
2018	Dry	07/06/2018	1	3	20	161	239	-78	Old cut
2018	Dry	07/06/2018	1	3	21	120	343	-223	Bog
2018	Dry	07/06/2018	1	3	23	164	396	-232	Old cut
2018	Dry	07/06/2018	1	3	24	148	338	-190	Bog
2018	Dry	07/06/2018	1	3	25	119	251	-132	Bog
2018	Dry	07/06/2018	1	3	26	99	288	-189	Bog
2018	Dry	07/06/2018	1	3	28	189	540	-351	Bank
2018	Dry	07/06/2018	1	3	30	102	546	-444	Bog
2018	Dry	07/06/2018	1	3	32	197	396	-199	Bog
2018	Dry	07/06/2018	1	3	34	84	282	-198	Bog
2018	Dry	07/06/2018	1	3	36	72	310	-238	Bog
2018	Dry	07/06/2018	1	3	1	69	394	-325	Bog


Rigged Hill Dipwell Measurements
Relative Water Depth Below Ground Level (mm)
200
100
0
-100
-200
-300
-400
-500
-600
-700
-800
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38
Jun-17
May-18
Jun-18

Rigged Hill Windfarm Repowering

Technical Appendix A7.4: Outline Peat Management Plan

Volume 3 – Technical Appendix
July 2019

SCOTTISHPOWER RENEWABLES

ARCUS

RIGGED HILL WINDFARM REPOWERING

OUTLINE PEAT MANAGEMENT PLAN

JULY 2019

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1 INTRODUCTION

1.1 Preparation of the Peat Management Plan

This outline Peat Management Plan (oPMP) for Rigged Hill Windfarm Repowering (the Development) has been prepared initially to inform the Causeway Coast and Glens Borough Council and statutory consultees of the proposed peat and soils management methodologies to be employed during construction.

The purpose of the oPMP is to:

- Define the materials that will be excavated as a result of the Development, focusing specifically on the excavation of peat;
- Report detailed investigations into peat depths within the Development Site;
- Detail proposals for the management of excavated peat and other soils;
- Consider the potential impact of the Development on Ground Water Dependent Ecosystems (GWDTEs);
- Determine volumes of excavated arisings, the cut/fill balance of the Development and proposals for re-use or reinstatement using excavated materials; and
- Detail management techniques for handling, storing and depositing peat for reinstatement.

The oPMP has been produced in accordance with Scottish Renewables (SR) and the Scottish Environment Protection Agency (SEPA) Guidance on Peat Excavations and Management[1]. This oPMP is intended to be a document that will evolve during the different phases of the project and as such will be subject to continued review to address:

- Requirements to discharge future Planning Conditions;
- Detailed ground investigations and design development;
- Unforeseen conditions encountered during construction;
- Changes in best practice during the life of the windfarm; and
- Changes resulting from the construction methods used by the contractor(s).

Whilst this oPMP provides a base standard for good practice, where avoidance or further minimisation of risks to the environment can be demonstrated through use of alternative methods or improvements to current practices, the Contractor will implement these wherever possible and will correspond with NIEA and Causeway Coast and Glens Borough Council.

1.2 The Site

The development is located approximately 6.2km south-east of Limavady in Causeway Coast and Glens Borough Council. The development will comprise of 7 turbines. The 'Site Layout Plan' is detailed in **Figure 1**.

Published geological mapping of superficial soils indicates the site to be underlain mainly by glacial till with some areas of shallow rock expected. Peat is identified in the vicinity of the existing wooded areas and should be anticipated in topographically low-lying areas.

Published bedrock geology mapping indicates the site to be underlain by Upper Basalt Formation comprising Palaeocene aged Basalt. Sedimentary rocks consisting of mudstone, limestone, sandstone and chalk with occasional igneous dykes are shown beyond the Site, to the west.

[1] SR and SEPA (2012) Guidance on the Assessment of Peat volumes, Re-use of Excavated Peat and the Minimisation of Waste [Online] Available at: http://www.scottishrenewables.com/media/uploads/publications/a4_developments_on_peatland.pdf (Accessed 18/10/2018])

1.3 Consultation

Peat management within the Site was considered throughout the Environmental Impact Assessment (EIA) for the Development and the outcomes of studies are reported in the Environmental Statement (ES). The ES formed part of the planning application and will be made available to the Causeway Coast and Glens Borough Council and its consultees including NIEA and GSNI.

This oPMP considers assessments included in the ES and responds to the consultees scoping opinions.

2 OBJECTIVES

2.1 Introduction

2.1.1 Background

The preparation of an oPMP responds both to the scoping opinion responses from January 2018 and the intent to deliver a construction project that complies with good practice in accordance with SR and SEPA guidance.

By undertaking detailed peat survey work and carrying out assessments such as Peat Slide Risk Assessment (PSRA) for the EIA, a consistent approach to the management of peat across the Site can be achieved.

The overall objective of the outline design has been to minimise the excavation of peat where possible, and achieve as close as practicable an overall material balance within the Site. This is considered to give the best opportunity to achieve reinstatement or restoration in accordance with good practice, and remove the need for waste management controls.

This objective is achieved through:

- Ensuring the characteristics of the Site are understood through extensive peat probing and assessing the Sites topography;
- Understand the extents of the site layout and how excavations will take place; and
- Modelling the peat depth profile based on probing and digital terrain model in 3D.

2.1.2 Approach to Minimising Peat Excavation

The following steps have been taken during the outline design stage of the Development to minimise the impact on peat:

- The development of an access track design which avoids deeper peat where practicable; and
- The design and orientation of turbines and crane hardstandings considers local topographical and peat constraints.

At detailed design and construction stage these steps will be further supplemented by taking the following measures to minimise disturbance:

- Maximisation of batter angles in cuttings;
- Consideration of floating tracks; and
- The use of appropriate construction plant to avoid unnecessary disturbance of the ground surface.

The fundamental principle upon which this oPMP is based is that achieving a successful materials strategy is contingent on gaining a thorough understanding of the Site through investigation and developing a design that achieves the materials management objectives. For the Development, this principle is achieved by undertaking significant peat investigation works prior to preparing this oPMP.

2.2 Aims and Objectives

2.2.1 Need for a Peat Management Plan

This oPMP is prepared to demonstrate to the planning authority, NIEA and other consultees that the construction of the Development will progress in a manner that is planned, is in accordance with good practice and achieves the aim of being environmentally sustainable.

The oPMP is therefore prepared in accordance with the SR and SEPA guidance. It defines:

- How the Development has been structured and designed so far as practicably possible to reduce the volumes of peat excavated;
- How volumes of peat excavated during the course of the works have been considered in the design; and
- How excavated peat will be managed.

2.2.2 Objectives of the outline Peat Management Plan

The main objective of the oPMP is to outline how any peat expected to be excavated will be managed and re-used during the construction of the Development.

This is achieved through responding to the following objectives:

- Providing a description of peat conditions on site and how this was determined;
- Estimation of peat volumes to be excavated and re-used;
- Classification of excavated material;
- Consideration of the use of appropriate peat(s);
- Describing how excavated peat will be handled to ensure suitability for re-use;
- Determining if temporary storage of peat will be required during construction and how this will be done to ensure suitability for re-use; and
- Considering the potential volume of peat which may not be suitable for re-use and any requirement for a Waste Management Plan for the Development.

The response to these objectives is provided in the following sections.

3 PEAT MANAGEMENT

3.1 Investigations

The existing peat depths across the Site have been determined through a phased survey approach undertaken during EIA. The survey was initiated to inform the EIA and Site design work while supporting the PSRA. The survey comprised a total of 1111 probes.

Peat depths ranged from zero to 3.1 m thickness across the Site with peat of depth 2m and above concentrated mainly in the eastern area. This was consistent with the British Geological Survey mapping.

Initial peat depth surveys were undertaken in April, May and June 2017 comprising 100 m grid coverage across the Site, where accessible. This rationale of probing is in accordance with the Phase 1 approach as detailed in the Scottish Government guidance for investigating peat.

Further peat depth surveys (Phase 2) were undertaken over several phases by Arcus and NM Ecology, through May, July, and November 2018 and again in May and June 2019. The probe positions for this visit were focussed on the proposed turbines, access tracks and other key infrastructure. Peat depths were measured along the proposed access tracks at 50 m centres with offsets of 25 m on either side of the centre line, with 10 m grid spacing at turbines east of the existing wind farm spine road where deeper peat had previously been recorded, and 10 m cross-hair at turbines west of the spine road.

The peat depths are illustrated in **Figure 2** 'Recorded Peat Depth'.

3.2 Summary of Peat Depths

Throughout the peat surveys to date, a total 1111 probes were progressed. Over 73% of these recorded no peat or peat less than 0.5 m while almost 16% of probes recorded peat between 0.51 m and 1.0 m. Thick peat (where the depth was greater than >1.0 m) was recorded in just over 11% of locations.

Peat between 0 m to 0.5 m in depth was found throughout the whole Site in general, while peat above 0.5 m in depth was encountered infrequently across the Site. The maximum peat depth of 3.1 m was recorded in the topographically flatter area at the summit, where peat was generally thicker. Similarly, the peat depths recorded in the eastern area regularly measured over 1m in depth.

Where peat is consistently over 1.0 m thick and existing ground levels permit, the use of floating roads should be adopted. Prior to commencing works on Site, the Contractor will undertake further ground investigation to establish peat characteristics and surcharging strategies as part of any floating road design.

Peat depth interpolation is illustrated in **Figure 3**.

3.2.1 General Peat Classification

Acrotelmic peat is the upper layer of peat consisting of living and partially decayed material with a higher hydraulic conductivity and a variable water table. These deposits are generally found to exist in the upper 0.5 m of peat deposits and is typically suitable for re-instatement because it contains viable plant life to assist in the regeneration of peatland vegetation and carbon sequestration.

Catotelmic peat is variable in characteristics, with decomposition of fibres generally increasing with depth. Water content can be highly variable and affects the structural strength of the material. Suitability for re-use generally depends on fibre and water content. The upper catotelm is commonly deemed as being appropriate for re-use in restoration due to its relatively high fibre content.

Generally excavated semi-fibrous catotelmic peat from the Site will have sufficient structural strength to be able to be used in the lower layers of verge restoration as it will not be 'fluid'.

The catotelmic peat would be capped with a surface layer of actrotelm to re-establish the peat vegetation. If any fluid like wet catotelmic peat is encountered then it would be placed in more appropriate locations such as low-lying concave deposition areas.

The following assumptions have been made in classifying peat excavated during the construction work:

- Where the total peat depth was found to be less than 0.5 m, this peat material is assumed to be 100% acrotelmic;
- Where the total peat depth is between 0.5 m and 1.0 m, the upper acrotelmic peat is at least 0.5 m deep; and
- Where the total peat depth as found to be greater than 1.0 m, acrotelmic peat is assumed to account for at least 30% of total depth but generally applying minimum of 0.5 m thick.

Existing topography and permitted track gradients drive the design of the infrastructure with due consideration given to potential construction risk and effects on environmentally sensitive receptors including deep peat, watercourse buffers and any GWDTEs. Further micro-siting post-consent would take place in such a way as to avoid, where possible, the excavation of deep peat.

3.2.2 Excavation Calculation

An estimate of excavated volumes against access track lengths, turbines and crane hardstandings in line with the outline design stage has been undertaken. This was completed by assessing the 2D layout against the 3D interpolated peat data. Detailed earthworks volumes were not available for the Development at this stage.

Volumes of excavation and an estimate on the excavated material compositions, be this non-peat superficial soils, peat or other materials is included in **Table 3.1** using the anticipated construction activities that will generate excavated soils.

Table 3.1 Peat excavation volumes based on construction activity

Development Component	Anticipated Volume of Excavated Peat (m³)	Anticipated Volume of Acrotelmic Peat (m³)	Anticipated Volume of Catotelmic Peat (m³)
General earthworks associated with widening/upgrade of existing tracks, new access tracks, turning heads, passing places and road shoulders	19,714	5,441	14,273
Crane Pad, Laydown Areas and Foundations	20,457	15,576	4,881
Construction compounds	4,475	4,475	0
Substation	825	413	412
TOTAL	**45,471**	**25,905**	**19,566**

A detailed assessment of excavated volumes by location within the Site is provided in **Appendix 2** of this report.

3.2.3 Peat Re-use Requirements

The principles of re-instating peat and peat soils should be adhered to for all elements of the infrastructure, comprising the below:

- Peat and peaty soils will be reinstated on track and infrastructure verges with turves placed on the upper horizons encouraging re-vegetation;
- All peat, soil and turves excavated from beneath infrastructure (excluding any floating track section) will be re-instated in the vicinity of its original location;
- Any wet catotelmic peat will be placed at the bottom of any restoration profile, followed by semi fibrous catotelmic peat and then acrotelmic should be placed on top; and
- Restoration activities will be overseen by the Ecological Clerk of Works to ensure methods are properly adhered to.

Table 3.2 shows the opportunities for re-use of peat with the Site including the demand for acrotelm and catotelm peat. **Table 3.3** summarises the total peat balance estimated during construction of the Development.

Table 3.2 Peat Re-use volumes based on construction activity

Development Area	Total Demand Estimate (m³)	Acrotelm Demand (m³)	Catotelm Demand (m³)	Estimated Reinstatement Thickness (max) where gradient permits (m)	Assumptions
General earthworks associated with widening/upgrade of existing tracks, new access tracks, turning heads, passing places and road shoulders	21,588	13,402	8,186	Up to 0.6 m	Earthworks surface area/non-hardstanding of approximately 36,589m2 – assume up to 0.6m reinstatement on verge and earthwork banks, both sides of tracks.

Development Area	Total Demand Estimate (m³)	Acrotelm Demand (m³)	Catotelm Demand (m³)	Estimated Reinstatement Thickness (max) where gradient permits (m)	Assumptions
Crane Pad, Laydown Areas and Foundations	19,448	8,016	11,432	Up to 0.65 m and 1.0m on verges, banks and blade laydown respectively.	Earthworks surface area/non-hardstanding of approximately 26,700 m2 – assume up to 0.65 m reinstatement on verge and earthwork banks, dressing off and landscaping of 5 turbines foundations. Full reinstatement of blade laydown areas, up to 1.0m thick.
Construction Compounds/Sub station	4,558	4,558	0	0.50 m	Full reinstatement of construction compound and dressing off of side slopes at sub-station compound at thicknesses of up to 0.8m and 0.5 m respectively.
Total	**45,594**	**25,976**	**19,618**		

Table 3.2 is presented as a summary of the assessment of peat reinstatement volumes. A detailed assessment is provided in **Appendix 2** of this report.

The following assumptions have been made in assessing peat re-use:

- New access track sections assume verges on both sides at widths of up to 1.0 m. As the access track edges will have graded slopes, peat depths will vary across the profile to tie into existing ground levels;
- Upgraded track sections assume a verge on the upgraded side up to 0.5 m wide. As the access track edges will have graded slopes, peat depths will vary across the profile to tie into existing ground levels;
- Verges along the access tracks could consist of up to 0.6 m thick peat. Where possible catotelmic peat will be reinstated along verges in flatter areas;
- No peat will be placed on access track verges where the local topography is steep and/or a watercourse is in close proximity. This has been reflected in the volumes generated for access track sections;
- Peat will be laid only to a thickness that maintains hydrological conditions and to avoid drying out. Peat will not be used as a thin layer or on steeper non-peat

slopes. Low verges and landscaping will be formed to permit surface water to drain off the access tracks; and
- Catotelmic soils will only be used if it is suitable for purpose.

Table 3.3 - Peat Balance Calculations

Peat Description	Total Peat Demand Estimate for Reinstatement (m³)	Total Peat Supply from Excavation (m³)	Surplus (+) or Deficit (-) (m³)
Acrotelm	25,976	25,905	-71
Catotelm	19,618	19,566	-52
Total	**45,594**	**45,471**	**-123**

Table 3.3 demonstrates that there will be a small deficit of peat. These volumes should be considered in the context of the total excavated peat during construction. It is likely that balance would be achieved once total excavated peat is established by the Contractor and reinstatement depths are adjusted accordingly.

3.2.4 Handling and Storage of Peat

It will be necessary for the Contractor to prescribe methods and timing involved in excavating, handling and storing peat for use in reinstatement. The contractor will be responsible for appointing a chartered geotechnical engineer, as discussed in the Construction Environmental Management Plan (CEMP), who will monitor any potential stability risks. Construction methods will be based on the following principles:

- The surface layer of peat (acrotelm) and vegetation will be stripped separately from the catotelmic peat. This will typically be an excavation depth of up to 0.5 m;
- Acrotelmic material will be stored separately from catotelmic material;
- Careful handling is essential to retain any existing structure and integrity of the excavated materials and thereby maximise the potential for excavated material to be re-used;
- Less humified catotelmic peat which maintains its structure upon excavation should be kept separate from any highly humified amorphous or wet catotelmic peat;
- Acrotelmic material will be replaced as intact as possible once construction progresses / as it is complete;
- To minimise handling and transportation of peat, acrotelmic and catotelmic will be replaced, as far as is reasonably practicable, in the locality from which it was removed. Acrotelmic material is to be placed on the surface of reinstatement areas;
- Temporary storage of peat will be minimised, with restoration occurring in parallel with other works;
- Suitable areas should be sited in locations with lower ecological value, low stability risk and at a suitable distance from water courses;
- Reinstatement will, in all instances, be undertaken at the earliest opportunity to minimise storage of turves and other materials;
- Managing the construction work as much as possible to avoid periods when peat materials are likely to be wetter i.e. high rainfall events; and
- Transport of peat on site from excavation to temporary storage and restoration site should be minimised.

3.2.5 Waste Management Plan Requirements

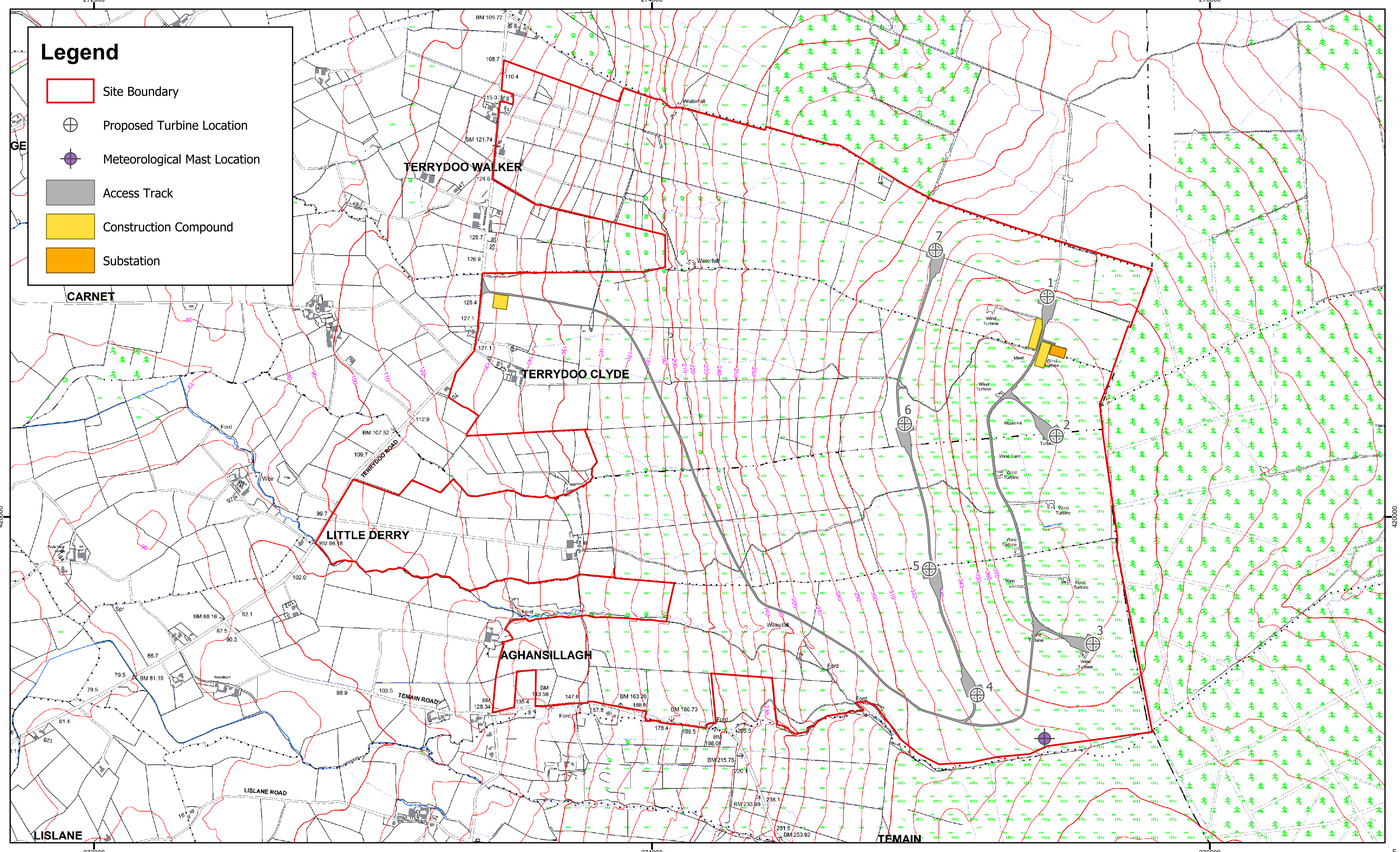
The CEMP contains details relating to the waste management requirements. Based on the calculations carried out, the total peat volumes excavated will be fully incorporated in to the re-instatement works, therefore is unlikely to require a waste management licence.

4 CONCLUSIONS

The following conclusions are drawn regarding the management of peat and excavated materials within the Site:

- As a result of the peat excavation and re-use estimates, it is demonstrated that all excavated peat can be suitably re-used on site;
- Excavated peat will be used for the reinstatement of access track verges, cut and fill embankment slopes, reinstatement of turbine hardstandings, reinstatement of compound areas;
- The estimates of excavated peat provided in this report are likely to be higher than actually occur, as micro-siting during construction will allow for the avoidance of localised pockets of deeper peat;
- Sufficient methods have been defined to ensure that peat can be sensitively handled and stored on -site to allow for effective re-use; and
- No waste licence is required for the construction work in relation to peat management.

APPENDIX 1 - DRAWINGS



A	04/07/2019	SC	First Issue.
Rev	Date	By	Comment

0 0.13 0.25 0.5 km

Rigged Hill Windfarm Repowering
Site Layout Plan
Figure 1

Drawing Number: 2607-REP-081

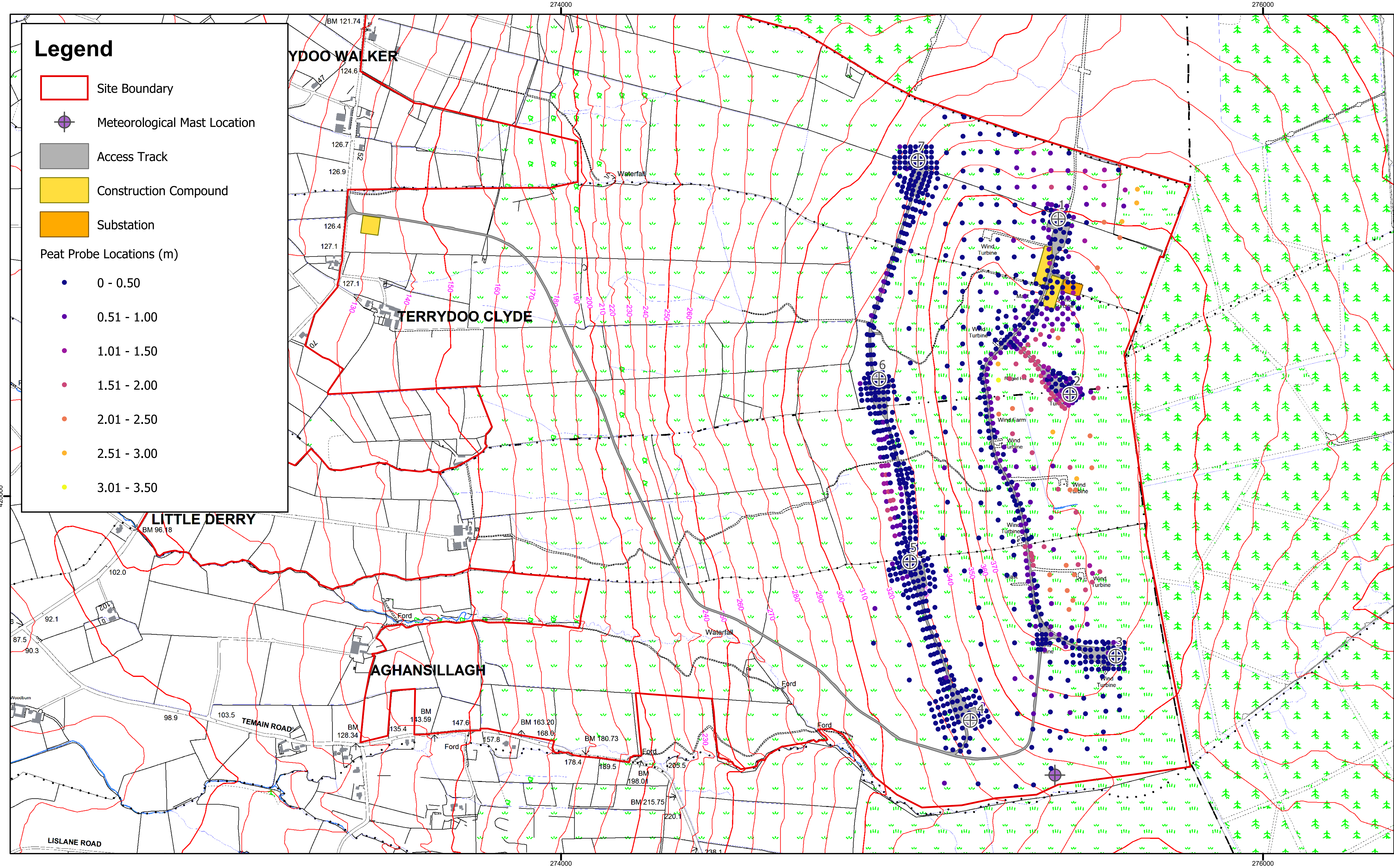
Datum TM65

Projection TM

Scale @ A3 1:12,500

Drawing produced by Arcus Consultancy Services

2607-REP-081 Fig01 Site Layout Plan



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SCOTTISHPOWER RENEWABLES

0 0.13 0.25 0.5 km

Rigged Hill Windfarm Repowering

Site Layout Plan

Figure 2

Drawing Number: 2607-REP-082

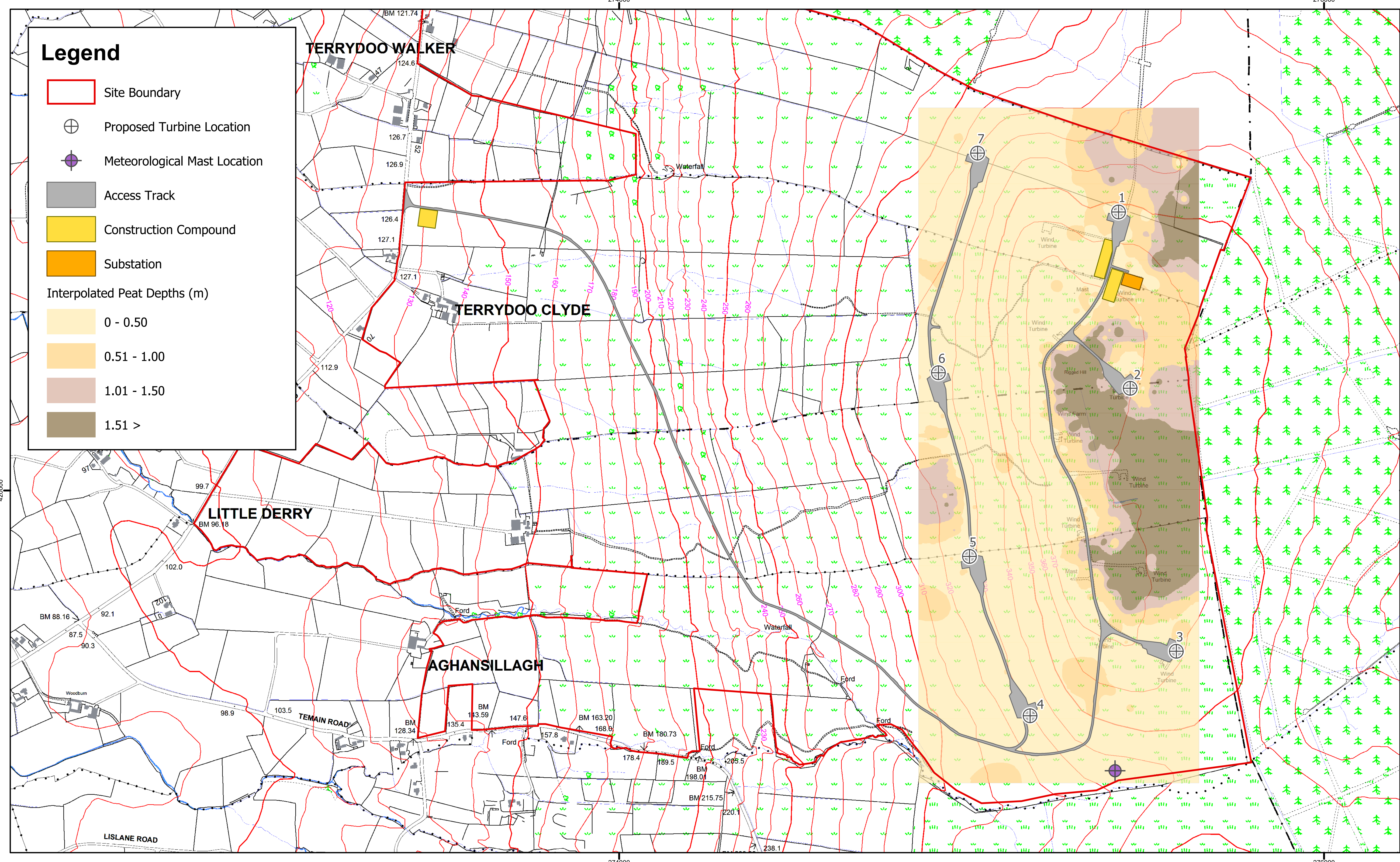
Datum TM65

Projection TM

Scale @ A3 1:10,000

Drawing produced by Arcus Consultancy Services

2607-REP-082 Fig02 Recorded Peat Depths



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0 0.13 0.25 0.5 km

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SCOTTISHPOWER RENEWABLES

Rigged Hill Windfarm Repowering

Interpolated Peat Depths

Figure 3

Drawing Number:	Datum	Projection
2607-REP-083	TM65	TM
Scale @ A3 1:10,000	Drawing produced by Arcus Consultancy Services	

2607-REP-083 Fig03 Interpolated Peat Depths

APPENDIX 2 - EARTHWORKS VOLUMES AND CALCULATIONS

2607 - Rigged Hill Wind Farm - Peat Excavation and Re-Use Calculations

Infrastructure	Total Area of Hardstand (m^2)	Peat Cut Volume (excluding topsoil) (m^3)	Total Acrotelm Excavation (Estimated m^3)	Total Catotelm Excavation (Estimated m^3)	Total Area of Reinstatement (m^2)	Total Peat Re-use (Estimated m^3)	Total Acrotelm Re-use Est. (Estimated m^3)	Total Catotelm Re-use (Estimated m^3)
Infrastructure								
New Access Tracks/Turning Heads/Passing Places	11375	7950	3413	4537	19844	11708	7541	4167
Existing Tracks/Track Widening	6760	11764	2028	9736	16745	9880	5861	4019
Crane Hardstand and Foundation								
T1	4450	3896	2390	1506	3516	2286	1055	1231
T1 Laydown					850	850	255	595
T2	4450	5077	1821	3256	1618	1052	486	566
T2 Laydown					850	850	255	595
T3	4450	1978	1857	121	1737	1130	522	608
T3 Laydown					850	850	255	595
T4	4450	1783	2406	-623	3570	2321	1071	1250
T4 Laydown					850	850	255	595
T5	4450	2304	2083	221	2493	1621	748	873
T5 Laydown					850	850	255	595
T6	4450	2176	1859	317	1746	1135	524	611
T6 Laydown					850	850	255	595
T7	4450	3243	3160	83	6081	3953	1825	2128
T7 Laydown					850	850	255	595
SUB-TOTAL	**49285**	**40171**	**21017**	**19154**	**63300**	**41036**	**21418**	**19618**
Construction Compound								
Construction Compound	6450	3225	3225	0	6450	3225	3225	0
Temporary Construction Compound 1	2500	1250	1250	0	2500	1250	1250	0
SUB-TOTAL	**8950**	**4475**	**4475**	**0**	**8950**	**4475**	**4475**	**0**
Substation								
Substation Compound	1650	825	413	412	165	83	83	0
SUB-TOTAL	**1650**	**825**	**413**	**412**	**165**	**83**	**83**	**0**
TOTAL PEAT EXCAVATION and REUSE	**59885**	**45471**	**25905**	**19566**	**72415**	**45594**	**25976**	**19618**