

Corriegarth 2 Wind Farm

Environmental Impact Assessment Report

Volume 3 - Technical Appendices

January 2021



CORRIEGARTH 2 WIND FARM

EIA Report – Volume 3 – Technical Appendices

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CORRIEGARTH WIND FARM EXTENSION

TECHNICAL APPENDIX A9.1

ARCHAEOLOGICAL DESK-BASED ASSESSMENT

CULTURAL HERITAGE REPORT NUMBER: 20131

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DATA ENTRY FORM

PROJECT INFORMATION	
Project title	Corriegarth Wind Farm Extension
Description	Wind farm development and ancillary infrastructure
Report	Desk Based Assessment and Walkover Survey
Contractor name	Arcus Consultancy Services Ltd.
Client	Corriegarth 2 Windfarm Ltd
SITE LOCATION INFORMATION	
Council	The Highland Council
Area	1,610 ha
Grid References	Centred on NGR 257000, 813000
PROJECT BIBLIOGRAPHY	
Type of publication	Unpublished document/manuscript
Title	Corriegarth Wind Farm Extension Archaeological Desk-Based Assessment
Author	Olivia Watt and Heather Kwiatkowski
Date	June 2020

SUMMARY

An archaeological desk-based assessment (DBA) has been undertaken by Arcus Consultancy Services Limited ('Arcus') on behalf of Corriegarth 2 Windfarm Limited, a wholly owned subsidiary of BayWa r.e. UK limited, (the Applicant) on the Corriegarth Estate on the edge of the Monadhliath Mountains, approximately 15 km northeast of Fort Augustus. The purpose of this archaeological Desk-Based Assessment (DBA) is to establish the known or potential archaeological resource baseline and provide design advice for the proposed Corriegarth 2 Wind Farm (herein referred to as 'the Development') for which an application is to be submitted in 2020. An Environmental Impact Assessment (EIA) will utilise the baseline within this DBA to full assess any potential effect to the archaeological resource and heritage assets within a separate EIA Report chapter.

For the purposes of this desk-based assessment, the Core Study Area includes the area around the proposed turbines which covers 1,610 hectares (ha), centred on National Grid Reference (NGR) 257000, 813000. A 5 km study area, which includes the archaeological core study area and land within a 5 km radius of the archaeological core study area, was used to aid the assessment of potential unknown archaeology. An initial 15 km Study Area was used to aid the section of designated heritage assets for the assessment of indirect effects. Study Areas are shown in Figure 1.

The data collection exercise has identified a total of 206 heritage features within the 5 km study area including three Listed Buildings and 203 undesignated heritage features (Figure 3 and Figure 4). Of these, 13 fall within the Core Study Area. Additionally, numerous modern wooden grouse butts and screens, associated with the hunting that occurs on Corriegarth Estate, are scattered in linear alignments throughout the Core Study Area.

Within the Core Study Area, there are 13 recorded heritage features with most of these related to post-medieval transhumance land use concentrated in close proximity to waterways (Figure 3). As such, the greatest potential for unknown archaeology to be encountered is along the waterways, which will be subject to a 50 m buffer as part of the design process. The exception to this would be any requirement for watercourse crossings. The archaeological potential to encounter unknown archaeological remains of significance is assessed as low.

Within the initial 15 km Study Area, there are 23 Scheduled Monuments and 45 Listed Buildings of all Categories, as shown in Figure 5.

In conclusion, it is likely that any work undertaken on this site would have low potential to have a direct impact upon potentially significant, previously undiscovered archaeological remains. Consultation should be undertaken with the THC archaeologist to agree appropriate mitigation measures, where required, following the final design.

There is also the potential for indirect impacts to affect designated heritage assets. Consideration of indirect effects will be reported on fully in the EIA Report, taking into account the way in which the Development may affect the setting of nationally important sites.

1 INTRODUCTION

An archaeological desk-based assessment (DBA) has been undertaken by Arcus Consultancy Services Limited ('Arcus') on behalf of Corriegarth 2 Windfarm Limited, a wholly owned subsidiary of BayWa r.e. UK limited, (the Applicant) on the Corriegarth Estate on the edge of the Monadhliath Mountains, approximately 15 km northeast of Fort Augustus. The purpose of this archaeological Desk-Based Assessment (DBA) is to establish the known or potential archaeological resource baseline and provide design advice for the proposed Corriegarth 2 Wind Farm (herein referred to as 'the Development') for which an application is to be submitted in 2020. An Environmental Impact Assessment (EIA) will utilise the baseline within this DBA to full assess any potential effect to the archaeological resource and heritage assets within a separate EIA Report chapter.

1.1 The Development

The Development will consist of up to 18 turbines with a maximum height to blade tip of 149.9 metres (m) and associated infrastructure. The generation capacity will exceed 50 megawatts (MW), with an operational life of thirty years. Ancillary infrastructure will utilise the Operational Corriegarth Wind Farm infrastructure, where possible, but may also include a substation, external transformers, new access tracks, temporary construction compound, and crane hardstandings as well as the option for battery storage. The turbine numbers and ancillary infrastructure proposed may change as the final parameters of the Development are identified throughout the iterative EIA process. The final design will be assessed within a separate EIA Report chapter.

1.2 Study Areas

To assess the potential for on-site archaeology, three study areas were defined based upon the likelihood of potential significant effects upon archaeology and cultural heritage.

The Development will utilise the operational Corriegarth Wind Farm access track. Whilst some upgrades may be required to facilitate the larger turbines, the main elements of new construction would occur at the turbine locations. As such, the Core Study Area focuses on the turbine locations within the Site Boundary as the main area in which new construction would occur within undisturbed ground and in which direct effects to archaeology may occur. The Core Study Area around the turbines consists of approximately 1,540 hectares (ha), with the extents and location shown on Figure 1. This Core Study Area consists of rough upland moorland used for grazing and grouse shooting with the operational Corriegarth Wind Farm in the centre.

A 5 km Study Area, which includes the Core Study Area and land within a 5 km radius (Figure 1), was used to aid the assessment of the archaeological potential of the Core Study Area.

An initial 15 km Study Area, which includes the Core Study Area and land within a 15 km radius (Figure 1), was used to aid the section of designated heritage assets for the assessment of indirect effects.

2 LEGISLATION, POLICY AND GUIDANCE

The assessment has been undertaken taking into account relevant heritage legislation and guidance as outlined below.

2.1.1 Legislation

The assessment of impacts to the historic environment falls under The Town and Country Planning (Scotland) Act 1997, and this DBA forms the baseline against which this assessment will occur. This DBA is a technical appendix to the EIA Report that will accompany the application for consent.

Statutory protection for archaeology is principally outlined in the Ancient Monuments and Archaeological Areas Act (1979)¹, as amended by the National Heritage Act (1983),² and nationally important sites are listed in a Schedule of Monuments. The 1979 Act makes no reference to the settings of Scheduled Monuments.

Listed Buildings and Conservation Areas receive protection under the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997³, as amended by the Enterprise and Regulatory Reform Act (2013)⁴. The 1997 Act places a duty on the local planning authority with respect to Listed Buildings and Conservation Areas, and their settings. Section 59 of the 1997 Act states (in part):

"In considering whether to grant planning permission for development which affects a listed building or its setting, a planning authority or the Secretary of State... shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses."

Section 64 states:

"In the exercise, with respect to any buildings or other land in a conservation area, of any powers under any of the provisions in subsection (2), special attention shall be paid to the desirability of preserving or enhancing the character or appearance of that area."

The Historic Environment Scotland Act 2014 defines the role of Historic Environment Scotland (HES) and the processes for the designation of heritage assets, consents and rights of appeal.

2.1.2 Policy

Scottish Planning Policy⁵ (SPP) is the statement of the Scottish Government's policy on nationally important land use planning matters. Circulars, which also provide statements of the Scottish Government's policy, contain guidance on policy implementation through legislative or procedural change

In the SPP, the historic environment is defined as *"the physical evidence for human activity that connects people with place, linked with the associations we can see, feel and understand"* and includes *"individual assets, related settings and the wider cultural landscape"*⁶. As stated in paragraph 137:

"The planning system should:

Promote the care and protection of the designated and non-designated historic environment (including individual assets, related settings and the wider cultural landscape) and its contribution to sense of place, cultural identity, social well-being, economic growth, civic participation and lifelong learning; and

Enable positive change in the historic environment which is informed by a clear understanding of the importance of the heritage assets affected and ensure their future use. Change should be sensitively managed to avoid or minimise adverse impacts on the

¹ UK Government (1979) *Ancient Monuments and Archaeological Areas Act*. Available at www.legislation.gov.uk/ukpga/1979/46 [Accessed on 20/10/2019]

² UK Government (1983) *National Heritage Act*. Available at <http://www.legislation.gov.uk/ukpga/1983/47> [Accessed on 20/10/2019]

³ UK Government (1997) *(Listed Buildings and Conservation Areas) (Scotland) Act 1997*. Available at http://www.legislation.gov.uk/ukpga/1979/46/pdfs/ukpga_19790046_en.pdf [Accessed on 20/10/2019]

⁴ UK Government (2013) *Enterprise and Regulatory Reform Act 2013*. Available at <http://www.legislation.gov.uk/ukpga/2013/24/contents/enacted> [Accessed 20/10/2019]

⁵ Scottish Government (2014) *Scottish Planning Policy* [Online] Available at <https://beta.gov.scot/publications/scottish-planning-policy/> [Accessed 30/10/2019]

⁶ Scottish Government (2014) *Scottish Planning Policy*. Paragraph 137 [Online] Available at <https://beta.gov.scot/publications/scottish-planning-policy/> [Accessed 30/10/2019]

fabric and setting of the asset, and ensure that its special characteristics are protected, conserved or enhanced."

In regards to designated heritage assets, the SPP⁷ states:

Regarding developments affecting listed buildings, "special regard must be given to the importance of preserving and enhancing the building, its setting and any features of special architectural or historic interest";

Proposals "which will impact on its appearance, character or setting [of a conservation area], should preserve or enhance the character and appearance of the conservation area";

"where there is potential for a proposed development to have an adverse effect on a scheduled monument or on the integrity of its setting, permission should only be granted where there are exceptional circumstances";

"where a development proposal has the potential to affect a world heritage site, or its setting, the planning authority must protect and preserve its outstanding universal value";

"planning authorities should protect and, where appropriate, seek to enhance gardens and designed landscapes included in the inventory of gardens and designed landscapes and designed landscapes of regional and local importance"; and

"planning authorities should seek to protect, conserve and, where appropriate, enhance the key landscape characteristics and special qualities of sites in the inventory of historic battlefields".

The SPP also requires local planning authorities to protect archaeological sites and monuments, preserving them *in situ* or otherwise ensuring *"appropriate excavation, recording, analysis, publication and archiving before and/or during development"*⁸. *"Non-designated historic assets and areas of historical interest, including historic landscapes, other gardens and designed landscapes, woodlands and routes such as drove roads"* should also be preserved *in situ* wherever feasible⁹.

'Our Place in Time: The Historic Environment Strategy for Scotland'¹⁰ presents the Scottish Government's strategy for the protection and promotion of the historic environment. The Historic Environment Policy for Scotland¹¹ (HEPS) and the Historic Environment Scotland Circular¹² complement the SPP and provide further policy direction. In particular, HEPS provides more detailed policy on historic environment designations and consents.

The Highland-Wide Local Development Plan 2012, Policy 57: Natural, Built and Cultural Heritage¹³ states that *'all development proposals will be assessed taking into account the level of importance and type of heritage features, the form and scale of the development, and any impact on the feature and its setting'*. The following criteria will also work:

- For features of regional/local importance, development will be accepted if they do not have an unacceptable impact on the heritage resource;
- For features of national importance, development will be accepted if they do not compromise the heritage resource. Significant effects must be clearly outweighed by social or economic benefits of national importance;

⁷ Scottish Government (2014) Scottish Planning Policy. Paragraph 141-149 [Online] Available at <https://beta.gov.scot/publications/scottish-planning-policy/> [Accessed 30/10/2019]

⁸ Scottish Government (2014) Scottish Planning Policy. Paragraph 150 [Online] Available at <https://beta.gov.scot/publications/scottish-planning-policy/> [Accessed 30/10/2019]

⁹ Scottish Government (2014) Scottish Planning Policy. Paragraph 151 [Online] Available at <https://beta.gov.scot/publications/scottish-planning-policy/> [Accessed 30/10/2019]

¹⁰ *Our Place in Time: The Historic Environment Strategy for Scotland*, 2015, Historic Environment Scotland

¹¹ *The Historic Environment Policy for Scotland*, 2019, Historic Environment Scotland

¹² *Historic Environment Scotland Circular*, 2019, Historic Environment Scotland

¹³ The Highland Council (2012) Highland-Wide Local Development Plan. Available at file:///C:/Users/EvaH/Downloads/Highland_wide_Local_Development_Plan.pdf [Accessed 30/08/2019]

- For features of international importance, developments which effect heritage sites will be accepted only where there is no alternative solution.

2.1.3 Guidance

Planning Advice Note 2/2011: Planning and Archaeology¹⁴ provides advice on dealing with archaeological remains. Whilst it covers a range of issues, of particular relevance is the planning balance associated with the preservation of archaeological remains and the benefits of development; the circumstances under which developers may be required to provide further information or field evaluation to inform decisions; and measures that can be taken to mitigate adverse effects.

Designation Policy and Selection Guidance (DPSG, 2019) accompanies HEPS and details the policy and selection guidance used by Historic Environment Scotland when designating heritage assets of national importance.

Guidance on how to apply the policies set out in the SPP is set out in Historic Environment Scotland's 'Managing Change in the Historic Environment Series', of which their guidance on 'Setting'¹⁵ is particularly relevant.

Standards and Guidance published by the Chartered Institute for Archaeologists (CIfA) have been followed in preparing this DBA, in particular the 'Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment'¹⁶ and the 'Standard and guidance for historic environment desk-based assessment'¹⁷.

3 AIMS, METHODOLOGY AND SOURCES

3.1 Aims

The aim of this DBA is to:

- Establish the baseline information regarding archaeology within the Core and 1 km Study Areas;
- To establish the archaeological potential for unknown buried archaeology to survive within the Core Study Area;
- To identify heritage assets that may be impacted by the Development and for which further assessment is required; and
- Where appropriate, make design recommendations to mitigate harm and/or enhance heritage assets.

3.2 Methodology

The following methodology follows those guidelines as outlined in the Chartered Institute for Archaeologists' Standard and Guidance Paper for historic environment desk-based assessment¹⁸.

¹⁴ The Scottish Government (2011) Planning Advice Note 2/2011. Available at <https://www.gov.scot/publications/pan-2-2011-planning-archaeology/> [Accessed 30/08/2019]

¹⁵ Historic Environment Scotland, (February 2020), *Managing Change in the Historic Environment: Setting*. [Online] Available at: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=80b7c0a0-584b-4625-b1fd-a60b009c2549> [Accessed 29/5/20]

¹⁶ Chartered Institute for Archaeologists (2014) *Standard and Guidance for Commissioning work or providing consultancy advice on archaeology and the historic environment*, Published December 2014, [Online] Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GCommissioning_1.pdf

¹⁷ Chartered Institute for Archaeologists (2017) *Standard and Guidance for Historic Environment Desk-Based Assessment*, Published December 2014, Updated January 2017 [Online] Available at: http://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_3.pdf [Accessed 30/08/2019]

¹⁸ Chartered Institute for Archaeologists (2017) *Standard and Guidance for Historic Environment Desk-Based Assessment*, Published December 2014, Updated January 2017 [Online] Available at: http://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_3.pdf [Accessed 1/6/2020]

The DBA comprises of a written report including a description of the baseline heritage resource and archaeological potential of the study area, a description of the area's historic character, the archaeological and historical baseline's significance, the effect of the Development upon the outlined archaeological and historical resource, and potential mitigation strategies. The following section outlines the methodology used to fulfil the aims of the assessment stated in Section 3.1 above.

To inform the DBA, an archival search was undertaken in order to identify records of known archaeological features which have the potential to be affected by the Development. This archive search also collected data falling within the 5 km study area to inform the assessment of the physical and ground-based archaeological potential of the Core Study Area.

The following sources were consulted in accordance with the best practice guidelines laid down by the Institute for Archaeologists (CIfA).

- Historic Environment Scotland Datasets including;
 - Canmore Archaeological Records;
 - Database of World Heritage Sites;
 - Database of Scheduled Monuments;
 - Database of Listed Buildings;
 - Database of Inventoried Garden and Designed Landscapes; and
 - Database of Inventoried Battlefields.
- The National Collection of Aerial Photography (NCAP);
- Cartographic evidence;
- The Highland Council Historic Environment Record (HER) consulted on 6 February 2020; and
- The Statistical Accounts for Scotland.

These resources have been collated and examined alongside the results of any fieldwork.

To accompany this consultation, a site walkover was conducted on 8 November 2019 to verify the written records, to assess the character of the site, and to note any archaeological features not previously identified. Any previously unknown sites were recorded by use of digital photography and an appropriate scale.

The results of this work have informed the archaeological baseline and archaeological potential of the Core Study Area. This baseline has then been used to feed into the design and final layout of the Development presented in the EIA Report.

4 RESULTS

The data collection exercise has identified a total of 206 heritage features within the 5 km study area including three Listed Buildings and 203 undesignated heritage features. Of these, 13 fall within the Core Study Area. Additionally, numerous modern wooden grouse butts and screens, associated with the hunting that occurs on Corriegarth Estate, are scattered in linear alignments throughout the Core Study Area.

The results of the desk-based assessment are summarised below. Site number references correlate to the Heritage Gazetteer in Section 8.

4.1 Core and 5 km Study Area

4.1.1 *Nationally Designated Assets*

A search of the National Monument Record Scotland (NMRS) returned no nationally designated sites within the Core Study Area and three within the 5 km Study Area, as follows:

- Category B Listed Building, Garthbeg (LB1883);
- Category C Listed Building, Foyers Hydroelectric Power Scheme and Former Aluminium Smelter, Loch Mhor Dam (LB51700); and
- Category B Listed Building, Boleskine Old Manse (LB1848);

These are shown in Figure 2 and are discussed in Section 6. Full details of these can be found in the Heritage Gazetteer in Section 8.

4.1.2 Non-Designated Assets

4.1.2.1 Historic Environment Record and Canmore

The Historic Environment Record (HER) and Canmore datasets returned, 191 records of archaeological features within the 5 km archaeological study area (Figure 3), three of which fall within the archaeological core study area as shown in Table 1 (Figure 3).

Table 1 HER Assets within Core Study Area

<i>HER Ref</i>	<i>Name</i>	<i>Type</i>
MHG26239 (CFA-1)	Carn na Saobhaide	Building (Post Medieval)
MHG46203	River E	Building (Undated)
MHG46204	River E	Structure (Undated)

These are detailed in the Heritage Gazetteer in Section 8 with those within the archaeological core study area highlighted in grey. These are shown in Figure 3.

4.1.2.2 Previous Surveys of Core study Area

A previous desk-based assessment was conducted by CFA for the Corriegarth Wind Farm application¹⁹. CFA identified seven sites within the Core Study Area as part of their survey work. These are listed in Table 3 and shown on Figure 3.

Table 3: CFA Sites Identified During Walkover Survey

<i>Site Ref.</i>	<i>Previous DBA Ref.</i>	<i>Type</i>	<i>X</i>	<i>Y</i>
CFA-2	23	Track	252540	816800
CFA-3	24	Field Bank	258420	813660
CFA-4	27	Sheiling	256300	813600
CFA-5 (Plate 1)	28	Sheiling	256443	814243
CFA-6	29	Sheiling	257774	813563
CFA-7	33	Settlement	255590	813620
CFA-8	34	Shielings	255790	812620

4.1.2.3 Cartographic Analysis

Historic mapping of the area can be accessed through the National Library of Scotland Mapping service and other readily available sources. This exercise was previously completed as part of the desk-based assessment undertaken by CFA for the now Operational Corriegarth Windfarm²⁰ and reviewed as part of this Desk-Based Assessment.

¹⁹ CFA (July 2007) Corriegarth Wind Farm Renewable Energy Environmental Statement, Volume 2: Written Statement, Chapter 9: Cultural Heritage, Paragraphs 9.38).

²⁰ CFA (July 2007) Corriegarth Wind Farm Renewable Energy Environmental Statement, Volume 2: Written Statement, Chapter 9: Cultural Heritage, Paragraphs 9.36).

Two additional unroofed structures or enclosures (HM-1 and HM-2) were identified within the Core Study Area beyond those recorded by CFA, all of which are detailed below:

- Ordnance Survey 2nd Edition map: a township named Bunkgieve is shown located to the north of Corriegarth Lodge. There is a footpath running from Bunkgieve, past Corriegarth Lodge and Garthbeg, to a bothy (CFA-1) at the head off the River E which falls within the Core Study Area. There are also two additional unroofed structures (HM-1 and HM-2) shown along the Allt Dearg to the south of River E. These are shown on Figure 4.
- 1903 OS County Series: No change to the Core Study Area with both the bothy (CFA-1) and two unroofed structures/enclosures (HM-1 and HM-2) still shown on the map.
- The 1969 OS Plan shows all the previous buildings and enclosures as no longer being present with a cairn in the far corner of the Development (HM-3).
- The modern OS map still shows the cairn (HM-3) as well as a modern bothy (WS-1) as shown on Figure 3.

Four archaeology records were identified: the bothy (MHG26239), two unroofed buildings/enclosures (HM-1 and HM-2), a modern cairn (HM-3), and a modern bothy (WS-1).

4.1.2.4 Aerial Photography

CFA²¹ undertook aerial photography analysis, the photographs of which were accessed through the National Collection of Aerial Photography with seven additional sites identified, one of which is a trackway (CFA-2) which lies within the Core Study Area. A review of the Core Study Area aerial photography did not identify any additional archaeological features beyond those identified by CFA.

4.1.2.5 Statistical Accounts

The Statistical Accounts for the archaeological core study area is found in the County of Inverness, relating to the Parish of Boleskin and Abertarff. The topography of the land is described as that of 'flat lands interspersed with undulating banks' with an area of high hill ground 'Corry-yearrig' over which the old military road passes from Fort Augustus.²² The parish records also note that the prevailing wind 'from the adjacent elevated hills' acquire force which 'sometimes overthrow houses and spread havoc among the woods.'²³

In relation to potential archaeology within this area, the parish records note that in Gaelic 'Druim-a-dhampuil' signifies Temple Ridge, a ridge where there were several Druidical temples of a circular form', however; a great number of these were removed due to interrupting with agricultural needs. There are known vitrified forts, one on the farm of Auchteran in Abertarff and another on the eastern boundary of Boleskine.²⁴

4.1.2.6 National Records of Scotland

A search of the national records was undertaken for 'Loch Garth', 'Gorthleck', 'Corriegarth', 'Corriyearrig' and 'Abertarff'.

²¹ CFA (July 2007) Corriegarth Wind Farm Renewable Energy Environmental Statement, Volume 2: Written Statement, Chapter 9: Cultural Heritage, Paragraphs 9.37).

²² Statistical Account of Scotland (1845), Boleskine and Abertarff, County of Inverness, NSA, Vol. XIV, p.52, available at https://stataccscot.edina.ac.uk/static/statacc/dist/viewer/nsa-vol14Parish_record_for_Boleskine_and_Abertarff_in_the_county_of_Inverness_in_volume_14_of_account_2/ [accessed online 26/3/20]

²³ Ibid

²⁴ Ibid, p56.

The results of Loch Garth pertained to the Lovat and Fraser estate papers for drainage and general improvements of the Loch with Gorthleck returning Fraser estate papers and legal records.

The results for Abertarff returned the records of nearby religious houses and a long spanning record of presbytery minutes.

No results were returned for either Corriegarth or Corryearrig.

4.1.3 Walkover Survey

A walkover survey was undertaken on 8 November 2019. The weather was fair; visibility was good. The sites of any known archaeological features in the vicinity of turbine infrastructure were visited to confirm records. This included the shieling along Allt Bad Fionnaich (CFA-5, Plate 1), two unroofed buildings/enclosures which are no longer extant (HM-1 and HM-2 with area in which recorded shown on Plate 2), and modern bothy (WS-1, Plate 3). No additional heritage features of significance were noted during the walkover survey, though there are numerous modern wooden grouse butts and screens, associated with the hunting that occurs on Corriegarth Estate, scattered in linear alignments throughout the Core Study Area. Approximate locations are shown on Figure 3.

4.1.4 Previous Archaeological Investigations

Much of the archaeological investigations within the Core Study Area relate to work undertaken either for the now Operational Corriegarth Wind Farm or the River E Hydro Works, though intrusive works were largely concentrated along the River E and access track, as detailed below:

- Watching Brief – River E Hydro Scheme, Foyers (EHG2888)
<https://her.hIGHLAND.gov.uk/event/EHG2888>;
- Excavation – River E Hydro Works (EHG3354)
<https://her.hIGHLAND.gov.uk/event/EHG3354>;
- DBA and Walkover Survey – Proposed Corriegarth Wind Farm (EHG4400)
<https://her.hIGHLAND.gov.uk/event/EHG4400>;
- Walkover Survey – Proposed Corriegarth Wind Farm (EHG4401)
<https://her.hIGHLAND.gov.uk/event/EHG4401>;
- Topographic Survey – Access Road for Corriegarth Wind Farm (EHG4403)
<https://her.hIGHLAND.gov.uk/event/EHG4403>;
- Trial Trench – access track for proposed Corriegarth Wind Farm (EHG4406)
<https://her.hIGHLAND.gov.uk/event/EHG4406>;
- Trial Trench – access track for Corriegarth Wind Farm (EHG4409)
<https://her.hIGHLAND.gov.uk/event/EHG4409>;
- Topographic Survey – access road for Corriegarth Wind Farm (EHG4403)
<https://her.hIGHLAND.gov.uk/event/EHG4403>; and
- DBA and Walkover – Corriegarth Windfarm Connection with Torness (EHG4561) -
<https://her.hIGHLAND.gov.uk/Event/EHG4561>

4.2 15 km Study Area

4.2.1 Nationally Designated Assets

Within the initial 15 km Study Area, there are 23 Scheduled Monuments and 45 Listed Buildings of all Categories, as shown in Figure 5. There are no World Heritage Sites, Registered Battlefields, Registered Parks and Gardens or Conservation Areas. Whilst the design is yet to be finalised, these heritage assets will be given initial consideration for changes to setting based on the final layout and their location with the zone of theoretical visibility. Further consultation is recommended during preparation of the EIA Report to

agree the final selection of heritage assets for inclusion in the assessment of the final layout.

All designated heritage assets are detailed in the heritage Gazetteer in Section 8 and in Figure 5.

5 BASELINE INTERPRETATION

The following section gives a brief description of the wider study area's archaeological and historical sites within the context of the area's background history, presented by period. The features referred to are detailed in the Heritage Gazetteer in Section 8 and shown in Figures 2 and 3. The Site Numbers refers to the HER or DBA reference given in the Gazetteer within Section 8.

5.1 The Prehistoric Period

There are no known prehistoric features within the Core Study Area.

Within the 5 km study area, there are 38 heritage records relating which may be of prehistoric origin, predominately hut circles though there are cairnfields, two crannogs and a dun. Many of these prehistoric archaeological features are largely concentrated at lower elevations along the Loch Mhor (Loch Garth and Loch Farraline) or just above the waterways out of the flood plain. The access track is the only portion of the Development as lower elevations and it is existing, built as part of the Operational Corriegarth Wind Farm. As there is likely to be only minor improvements within the existing access track corridor, there is limited potential for unknown prehistoric archaeological remains to be encountered, and the archaeological potential for prehistoric remains within the Development is low.

5.2 Early Medieval - Medieval Period

During the medieval period, Inverness was made a royal borough by King William and across Scotland many were converting to Christianity with St Columba purported to have arrived in 565 AD to promote Christianity.²⁵

There are no known medieval archaeological features within the Core Study Area. Within the 5 km study area, there is evidence of early medieval activity with a chapel at Whitebridge (MHG2638). There is also the Old Boleskine Parish Church (LB1847) located north-west of Foyers on the southern edge of Loch Ness. Whilst there was medieval settlement in the wider area, this appears to be focused around lower elevations and churches within settlements. As the Development is located in the exposed upland areas of the Monadhliaths, the archaeological potential for medieval remains within the Development is very low.

5.3 Post-Medieval Period

During the post medieval period, the clan system had been established across the Highlands of Scotland with the Frasers of Lovat being the predominant family in the area. During this time, there were Jacobite Uprisings in which place names such as Fort Augustus were anglicised from Gaelic.

Within the Core Study: Area there are 12 records relating to the post medieval period: shieling huts and tracks likely related to transhumance land use (CFA2-8) as well as buildings and enclosures (MHG26239, MHG46203, MHG46204, HM-1, HM-2).

Within the 5 km Study Area, there are a considerable number of post-medieval sites which include General Wade's Military Road (MHG18475) which was constructed during the eighteenth century in association with the Jacobite Uprising connecting Fort William to

²⁵ Entry for Invernesshire, Encyclopaedia Britannica, [accessed 1/4/20], <https://www.britannica.com/place/Inverness-shire>

Inverness via Fort Augustus. The General's Hut (MHG17496) lies close to the church at Boleskine off General Wade's road and is said to have been built specifically for General Wade to oversee the roadworks.²⁶ There is further evidence of the post medieval period particularly regarding agricultural and transhumance land use with numerous shieling huts (MHG25659, MHG26235, MHG25440, and MHG26232) as well as farmsteads, steadings and townships²⁷.

Many of the post-medieval period features are associated with residential or agricultural use and are generally concentrated at lower elevations along the waterways. Within the upland areas, archaeological remains are largely associated with transhumance land use in the form of shieling huts along watercourses and sheepfolds. As the main area of new construction is associated with new turbines and infrastructure with buffers to avoid siting infrastructure within 50 m of watercourses, there is limited potential to find archaeological post-medieval sites of significance.

5.4 Modern Era

This period saw the British Aluminium Company build its first reduction works on the shores of Loch Ness, employing some 600 people by 1908, and a hydro-electric pumped storage scheme in 1969 with a new power station. Corriegarth Wind Farm has also been built and is now operational.

Within the Core Study Area; there are no known modern heritage assets of significance, though there is a cairn on the eastern boundary (HM-3) and one modern bothy (WS-1) as well as numerous wooden grouse butts and screens. In the 5 km Study Area, there are a limited number of modern heritage assets of significance. These include the Hydroelectric Power Scheme and Smelter, Loch Mhor Dam (LB51700), war memorial (MHG30097), and other post-medieval buildings that are still in use today. As modern features would likely still be recorded via historic mapping or still visible, the archaeological potential for significant modern assets is very low.

6 ARCHAEOLOGICAL AND HISTORICAL POTENTIAL

The following section summarises the potential for subsurface archaeological remains within the archaeological study area, outlines the potential threat from the Development to these remains, and suggests further work and mitigation strategies.

The review of the data collected and the current site conditions indicates that the archaeological study area has low potential for further archaeological remains as shown in Table 2.

6.1 Archaeological Potential

Occupational evidence is focused mainly along the lower terrain around lochs. The majority of archaeological evidence within the study areas is undated but probably of post-medieval date, showing the expansion of communities within this area and the evolution of agricultural to industrial work. Within the upland areas, archaeological remains are largely associated with transhumance land use in the form of shieling huts along watercourses and sheepfolds

Within the Core Study Area, there are 13 recorded heritage features with most of these related to post-medieval transhumance land use concentrated in close proximity to waterways. As such, the greatest potential for unknown archaeology to be encountered is along the waterways, which will be subject to a 50 m buffer as part of the design process.

²⁶ Entry for MHG17496, [accessed 1/4/20], <https://her.highland.gov.uk/Monument/MHG17496>

²⁷ Gazetteer Section 10: MHG26286, MHG23338, MHG26282, MHG25434, MHG25443, MHG26236, MHG25435, MHG26281, MHG26231, MHG25442, MHG26234, MHG26233, MHG26273, MHG25441, MHG26283, MHG26237, MHG25438, MHG53518, MHG25439, MHG56274, MHG25659, MHG26235, MHG25440, and MHG26232

The exception to this would be any requirement for watercourse crossings. The archaeological potential to encounter unknown archaeological remains of significance is assessed as low.

Table 2 provides a summary of the Archaeological Potential of the Site.

Table 2: Summary of Archaeological Potential of the Site

Period	Visibility within 5 km study area	Presence or Absence of sites within 5 km study area	Likelihood of further Discoveries within the Development
Prehistoric	Present within the 5 km study area in low lying areas along lochs and waterways. Archaeological features include cairns, hut circles, crannogs and burial mounds.	Present, any subsurface remains unknown would likely lie in areas surround the lochs and burns.	Low in upland area of Core Study Area
Medieval	Limited presence of medieval archaeological features in 5 km study area. Medieval chapel at Whitebridge.	Limited presence, any subsurface remains would likely lie in lower elevations near older churches.	Very Low
Post-Medieval	Good-remains still present such as roads and agricultural infrastructure.	Prevalent in the form of settlement and transhumance land use as well as military actions of the era.	Low – moderate, with likelihood of encountering unknown remains concentrated in close proximity to watercourses.
Modern	Good-remains still highly visible and good cartographic coverage	Limited presence, any modern archaeological remains would likely still be extant and visible.	Very Low

6.2 Potential Impact from the Development

Direct impacts are physical alterations which may affect either known sites or currently unknown buried and otherwise unrecorded archaeology. Direct or physical impacts may damage or destroy archaeological features and are usually permanent and irreversible. These effects are likely to occur during construction or decommissioning of a site.

Direct effects are limited to the Development footprint where associated earthmoving and excavation occur and not to the full extent of the Core Study Area. Excavations for the turbine foundations are anticipated to reach a depth between 2-4 m with bedrock encountered at depths below 3 m. Excavation depths for cable runs and access tracks are anticipated to reach c. 500-750 mm. It is therefore unlikely that any archaeology situated at a depth of more than 1 metre has the potential to receive a direct impact, other than at the turbine locations.

It is recommended that the finalised Development footprint avoid all known remains, where feasible. There is a low potential for unknown archaeology to exist across the Core Study Area due to its exposed upland nature though this increases to moderate in close proximity to watercourses. The direct effects as a result of the finalised Development footprint will be assessed within the EIA Report.

The Development has the potential to cause indirect effects, primarily visual, upon the settings of nationally important cultural heritage assets within and beyond the study area of this desk-based assessment. Due to the height and visibility of the turbines, it is considered that these indirect effects have the potential to be significant (i.e., they may have the potential to so alter the settings of some cultural heritage assets that the understanding, appreciation or experience of those assets is changed or harmed). An area covering a 15 km radius of the Core Study Area has been selected to determine which assets will have the potential to be indirectly affected by the Development. The final list of assets for selection will be based on theoretical visibility of the final Development layout, definitions of setting for each heritage asset, and professional judgement. Where possible, the final selection of heritage assets will be agreed in consultation with Historic Environment Scotland. These effects will be assessed and reported in full within the EIA Report.

6.3 Potential Mitigation

It is considered that preservation *in situ* is the preferred method of mitigation for known archaeological remains. However, where this is not possible, or where there is a likelihood of encountering locally important unknown subsurface archaeological remains, a programme of archaeological works leading to preservation by record is considered appropriate.

Due to there being very low potential for further unknown significant archaeological remains within the archaeological study area it is proposed that the following steps are undertaken to reduce the potential impact:

- Avoidance of known or potential archaeological features and sites during finalisation of site design; and
- Consultation with Highland Council's archaeologist in order to establish appropriate mitigation.

7 CONCLUSION

The desk-based assessment has revealed that many of the archaeological remains recorded within the study areas relate to prehistoric settlement and pastoral activities from the post-medieval period. Generally, settlement is concentrated along the waterways at lower elevations though transhumance land use (e.g. shieling huts) are found along waterways in upland areas.

Potential to encounter further unrecorded archaeological remains is low due to the exposed upland nature of the Core Study Area except in close proximity to waterways where the potential is moderate.

In conclusion, it is likely that any work undertaken would have low potential to have a direct impact upon potentially significant, previously undiscovered archaeological remains except at watercourse crossings. Consultation should be undertaken with the THC archaeologist to agree appropriate mitigation measures, where direct impacts cannot be avoided.

There is also the potential for indirect impacts to affect assets both in the Core Study Area and the wider area. Consideration of indirect effects will be reported on fully in the EIA Report, taking into account the way in which the Development may affect the setting of designated heritage assets.

8 GAZETTEER OF ARCHAEOLOGICAL SITES

The following gazetteer summarises the results of the desk-based assessment and includes recorded designated heritage assets within the 15 km study area.

8.1 Scheduled Monuments within 15 km

HES Ref	Name	Distance from Core Study Area
SM4532	Caepmaol, settlement 300m ENE of	Between 5-10 km
SM4536	Dell Farm, burial mounds 350m NE of	Between 5-10 km
SM4538	Farraline, Enclosure 780m NE of	Between 5-10 km
SM11500	Druimantorran, hut circles and field system 1525m NE and 1460m ENE of	Between 5-10 km
SM11884	Dun Deardail, forts 410m and 520m ENE of Fasnagruig	Between 5-10 km
SM11070	'Crusader', remains of speedboat in Loch Ness, near Achnahannet	Between 5-15 km
SM11431	Ballachar, settlement, hut circles and field systems 275m NNW of	Between 5-15 km
SM11433	West Croachy House, cairns 1000m ESE of	Between 5-15 km
SM11436	Dalcrombie, hut circles, settlement & field system 300m NNW of	Between 5-15 km
SM11468	Dhualallow, cairn 195m E of	Between 5-15 km
SM11476	Ruthven, crannog 610m NNE of	Between 5-15 km
SM11490	Loch Ruthven, crannog 490m SSW of Tullich	Between 5-15 km
SM11540	Leadclune, cairn 1115m E of, Creag Innis an Daimh Dhuibh	Between 5-15 km
SM11541	Mains of Aberarder, fort 270m S of	Between 5-15 km
SM11542	Mains of Aberarder, hut circle 1145m ESE of	Between 5-15 km
SM11613	Tullich, settlements 760m NNE of	Between 5-15 km
SM11710	Torness Cottage, two hut circles 300m SSW of	Between 5-15 km
SM11800	Torness, cairn 305m NNW of	Between 5-15 km
SM11826	Ruthven, hut circles, field systems and burnt mounds 1200m S of	Between 5-15 km
SM4501	Tom Buidhe, enclosure 480m NNE of Ruthven	Between 5-15 km
SM4567	Levishie Cottage, fort and earthwork 1050m NE of	Between 5-15 km
SM6220	Dun Scriben, fort	Between 5-15 km
SM90309	Urquhart Castle	Between 5-15 km

8.2 Listed Buildings with 15 km

HES LB Ref	HER Ref / Canmore Ref	Name	Category	Distance from Core Study Area
539		Farraline House	A	Within 10 km
540		Farraline House, Walled Garden.	B	Within 10 km
541	MHG15895 MHG38639	Gorthleck House	C	Within 10 km
542		Gorthleck Mains (Old Gorthleck)	B	Within 10 km
1682		Dunmaglass Bridge	B	Within 10 km
1846	MHG15728 MHG31403	Boleskine Parish Church	B	Within 10 km
1847	MHG3436	Boleskine, Old Boleskine Parish Church	B	Within 10 km
1848		Boleskine Old Manse	B	Within 10 km
1849		Boleskine House	B	Within 10 km
1850		Boleskine House, Stables	B	Within 10 km
1852		Foyers Cemetery, Jane Fraser Memorial Obelisk	B	Within 10 km
1860	MHG15571 MHG38579 MHG43779	Dell Lodge	B	Within 10 km
1870		Inverfarigaig Bridge	B	Within 10 km
1871		Inverfarigaig Pier	B	Within 10 km
1874	MHG2633	Whitebridge, Old Bridge	A	Within 10 km
1875	MHG15798	Whitebridge, New Bridge	B	Within 10 km
1876		Knockie Lodge Hotel	C	Within 10 km
1877	MHG39333 MHG444	Boleskine House, Gate Lodge	B	Within 10 km
1879	MHG15720	Foyers Mains Steading	C	Within 10 km
1880	MHG2698	Foyers, British Aluminium Factory	A	Within 10 km
1881	MHG15739	Foyers, Lower Foyers Bridge	B	Within 10 km
1882	MHG15744/ Canmore 104663	Foyers, Upper Foyers, Bridge Over River Foyers	C	Within 10 km
1883		Garthbeg	B	Within 10 km
15016		Alltsigh House	B	Within 10 km
50029		Erroglie, Former United Free Church, Boundary Walls	C	Within 10 km

HES LB Ref	HER Ref / Canmore Ref	Name	Category	Distance from Core Study Area
50031		Errogie, Corrugated-Iron Cottage	C	Within 10 km
51700		Foyers Hydroelectric Power Scheme and Former Aluminium Smelter, Loch Mhor Dam	C	Within 10 km
51701	MHG54277	Foyers Hydroelectric Power Scheme and Former Aluminium Smelter, River Tarff Intake	C	Within 10 km
534		Abersky Farmhouse	B	Between 10-15 km
543		Leadclune	C	Between 10-15 km
1697		Aberarder House	B	Between 10-15 km
1869		Allt Doe Bridge, Re-Aligned A862	C	Between 10-15 km
1884		Allt An Reidhean Burn Bridge	B	Between 10-15 km
1885		Allt Doe Bridge	B	Between 10-15 km
15007		Drumnadrochit, Dhivach Lodge	B	Between 10-15 km
15017		Invermoriston House, 'Barracks' And Servant's Tunnel	B	Between 10-15 km
15019		Invermoriston, Smithy House	C	Between 10-15 km
15020		Invermoriston House, Gazebo	B	Between 10-15 km
15021		Invermoriston Home Farm	A	Between 10-15 km
15022		Invermoriston, Church of Scotland	B	Between 10-15 km
15023		Invermoriston, St Columba's Church Graveyard, Gatepiers	B	Between 10-15 km
15024		Invermoriston Old Bridge	B	Between 10-15 km
15025		Invermoriston New Bridge	B	Between 10-15 km
15026		Urquhart Castle	A	Between 10-15 km
42470		Bridgend Farmhouse with Byre	B	Between 10-15 km

8.3 Undesignated Heritage Assets within 5 km

HER or DBA Reference	Canmore Reference	Name
MHG14097		Dell Lodge
MHG14102		Knockchoilum
MHG14119		Possible Shieling Huts, Cnoc an T-Sidhein
MHG14120		Possible Shieling Huts, Garthbeg
MHG14522		Allt Caol (Hut Circles)
MHG15749		Garthbeg House, Gorthleck
MHG15826		Old Manse, Boleskine
MHG17400		Whitebridge Hotel
MHG17465		General Wade's Military Road, Fort William - Fort Augustus - Inverness
MHG17496		General's Hut, Boleskine
MHG17868		Mill Bridge
MHG18475		General Wade's Military Road, Fort William - Fort Augustus - Inverness
MHG18479		General Wade's Military Road, Fort William - Fort Augustus- Inverness
MHG18480		General Wade's Military Road, Fort William - Fort Augustus - Inverness
MHG20610		Foyers Hotel
MHG21221		Lochbranside, Cruck-Framed Cottage
MHG23335		Dell Lodge
MHG23336		Whitebridge
MHG23337		Whitebridge
MHG23338		Stratherrick
MHG23339		Compass
MHG23340		Tom Aiteachaidh
MHG23341		Whitebridge
MHG23342		Loch A' Choin Uire
MHG23351		Upper Knockchoilum
MHG23353		Killiechoilum
MHG23360		Stratherrick
MHG24037		Paddockfield House
MHG24069		Garragie Lodge
MHG24610		Loch Garth
MHG247 MHG48604		Hut Circle, Whitebridge
MHG25434		Lochan nan Deala
MHG25438		Bailbeag
MHG25439		Farmstead or township? - Fairyburn
MHG25440		South Murnich
MHG25442		Cullintyre
MHG25443		Allt Loin

HER or DBA Reference	Canmore Reference	Name
MHG25444		Glenlia Farm
MHG25445		Killin Lodge
MHG25446		Eilean Mor
MHG25659		Dalcrag
MHG2600		Farmstead, Malagie
MHG26054		Possible Hut Circle, Druim an Tachair
MHG26069		Possible Hut Circle, Loch Garthside
MHG26070		Corriegarth
MHG26085		Trinloist
MHG26086		Corriegarth
MHG26231		North Lyne
MHG26232		Gorthleck
MHG26233		Ballindalloch
MHG26234		Allt an Rathain Ruaidh
MHG26235		Easter Aberchalder
MHG26236		Ballindalloch
MHG26237		Allt Dubhag
MHG26238		Loch Garth
MHG26239		Carn na Saobhaide
MHG26240		Glen Markie
MHG26258		Ballindalloch
MHG26273		Torran Dubh
MHG26281		Tom a'Mhoid
MHG26282		Trinloist
MHG26283		Tom a' Chu-thair
MHG26284		Allt na Callich
MHG26285		Glen Markie
MHG26286		Glen Markie
MHG26299		Caochan A'Choire Sheilich
MHG2634		Hut Circle, Stratherrick
MHG2635		Clearance Cairns, Stratherrick
MHG2636		Hut Circle, Stratherrick
MHG2638		Chapel, Whitebridge
MHG2644		Possible chapel site, Killiechoilum
MHG2645		Hut Circle, Beinn Sgurrach
MHG2646		Hut Circle, Beinn Sgurrach
MHG2647		Hut Circle, Beinn Sgurrach
MHG2648		Dun - Beinn Sgurrach
MHG2697		Terraced House, Foyers

HER or DBA Reference	Canmore Reference	Name
MHG2710		Hut Circle, Carn Bhreabaig
MHG2711		Carn Bhreabaig
MHG2712		Hut Circle, Migovie
MHG2713		Dam, Loch Mhor
MHG2714		Corriegarth Lodge
MHG2715		Hut Circle, Bailebeag
MHG2716		Hut Circle, Migovie
MHG2717		Hut Circle, Migovie
MHG2718		Field System, Migovie
MHG2719		Hut Circle, Migovie
MHG2720		Hut Circle, Loch Mhor
MHG2721		Hut Circle, Migovie
MHG2722		Loch Garth
MHG2723		Loch Mhor
MHG2724		Crannog, Loch Garth
MHG2725		Hut Circle, Lochbranside
MHG2726		Carn Liath
MHG2727		Carn Liath
MHG2751		Field System, Meall an Tarsaid
MHG2753		Beinn Sgurrach
MHG28423		Foyers, cemetery
MHG28424		Dalcrag
MHG28855		Dalcrag
MHG29306		Garrogie
MHG29307		Garrogie
MHG29308		Fechlin
MHG29309		Fechlin
MHG29310		Allt Thomais
MHG29311		Malagie
MHG30096		Glenlia
MHG30097		War Memorial, Stratherrick
MHG30101		Glenlia
MHG30957		Knockchoilum
MHG31745		Lower Knockchoilum
MHG32121		Foyers Bay
MHG32213		Comeraich
MHG32241		Pansy, Wreck, Foyers Bay, Loch Ness
MHG3255		Hut Circle - Paddockfield
MHG3256		Hut Circles - Paddockfield

HER or DBA Reference	Canmore Reference	Name
MHG3257		Hut Circle - Paddockfield
MHG3258		Hut Circle Settlement and Associated Field System, Loch Mhor
MHG3259		Tom A' Chu-Thair
MHG3288		Hut Circle - Tomvoit
MHG33019		Lochgarthside
MHG33138		Wades Bridge near Dalcragg
MHG33990		Crannog - Loch Bran
MHG33991		Loch Bran
MHG3438		Coins - Boleskine House
MHG3455		Tom A' Chu-Thair
MHG3456		Garthbeg Iron Working Site
MHG35375		Whitebridge Plantation Culvert
MHG35395		Allt An Loin Ford
MHG35396		Culvert - Allt Na Sidhein, Old Military Road, Farigaig Forest
MHG35397		Fort William - Fort Augustus - Inverness Military Road Re-Alignment
MHG35400		Fort William - Fort Augustus - Inverness Military Road
MHG35982		Bus Garage, Foyers
MHG35983		Foyers, 1-60 Glenisla, Cottages
MHG35984		Foyers, British Aluminium Factory, Foyers Pier
MHG36876		Allt Thomais
MHG36877		River Fechlin
MHG37287		Foyers, General
MHG38578		Boleskine Old Manse
MHG40703		Killiechoilum
MHG42242		Lazy Beds, Beinn Sgurrach
MHG42362		Garragie Lodge
MHG42488 MHG42494 MHG2643		Easter Drummond
MHG45850		Killiechoilum
MHG46034		Loch Killin
MHG46198		River E
MHG46199		River E
MHG46200		River E
MHG46201		River E
MHG46202		River E
MHG46203		River E
MHG46204		River E
MHG47410		Foyers, Lower Falls of Foyers

HER or DBA Reference	Canmore Reference	Name
MHG47419		Roman Catholic Church of The Immaculate Conception, Stratherrick
MHG47816		Garrogie Hydro-Electric Scheme
MHG48490		Glen Markie
MHG48491		Glen Markie
MHG48492		Glen Markie
MHG49478		Lyne Of Gorthleck, War Memorial
MHG49543		Foyers, Boleskine Graveyard
MHG49545		Foyers Church, Manse
MHG49546		Foyers, Church
MHG49547		Foyers, 1-60 Glenlia, Monumental Fountain
MHG49550		Foyers Power Station
MHG51138		Site of School at Bailebeag
MHG51139		Site of Building North of Former School at Bailebeag
MHG53518		Farmstead, Knockchoilum
MHG53519		Mill Pond and Remains of Lade, Killiechoilum
MHG53520		Cairn, Ardochy
MHG53521		Quarry Scoop, Ardochy
MHG54609		Stratherrick
MHG54610 MHG54611 MHG54612		Creag A' Chait
MHG55872		Possible Shieling Hut - Allt Laith-Bhaid
MHG55873		Enclosure - Allt Mor, Garrogie Estate
MHG55874		Sheepfold - Near Tom A' Chu-Thair, Garrogie Estate
MHG56274		Steading - Steading, Gorthleck
MHG56532		Former Kennels - Dell Estate, Whitebridge
MHG3435	12571	Cairnfield (Period Unassigned)
	85514	Military Road (18th Century)
	85515	Military Road (18th Century)
	85516	Military Road (18th Century)
	85521	Military Road (18th Century)
MHG23374	110083	Farmstead (Period Unassigned) (Possible)
MHG23334	110085	Farmstead (Period Unassigned)
MHG25435	115805	Farmstead (Period Unassigned)
MHG25441	115811	Farmstead (Period Unassigned)
MHG35394	148494	Military Road (18th Century)
	148506	Military Road (18th Century)
	148539	Military Road (18th Century)
MHG49544	280213	Church (Period Unassigned)

HER or DBA Reference	Canmore Reference	Name
MHG49551	280228	Shaft (Period Unassigned)
MHG54615	306206	Hollow Way (Period Unassigned)
HM-1		Unroofed Building or enclosure
HM-2		Unroofed Building or enclosure
HM-3		Modern Cairn
WS-1		Modern Bothy
CFA-1	22	Post-Medieval Bothy
CFA-2	23	Track
CFA-3	24	Field Bank
CFA-4	27	Sheiling
CFA-5	28	Sheiling
CFA-6	29	Sheiling
CFA-7	33	Settlement
CFA-8	34	Shielings

9 PLATES



CFA-5, Shieling on south side of Allt Bad Fionnaich



Plate 2: Overview looking downstream towards where HM-1 and HM-2 were shown on historic maps as unroofed features. They are no longer extant.

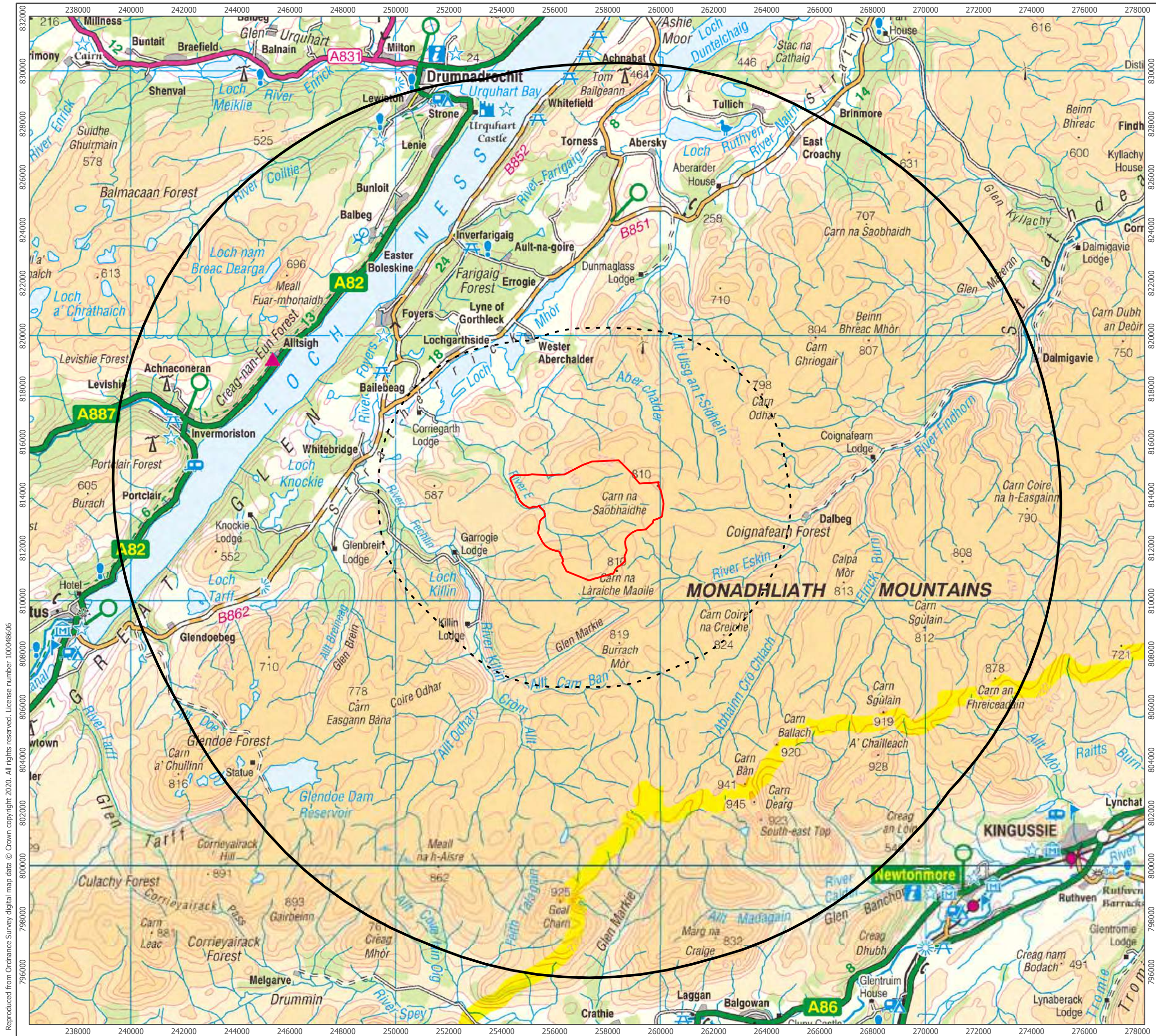


Plate 3: Modern Bothy (WS-1) in back left corner



Plate 4: Overview of area of shielings (CFA-8)

10 FIGURES



- ⊕ Proposed Turbine Location
- Core Study Area
- 5 km Study Area
- 15 km Study Area

1:138,499 Scale @ A3

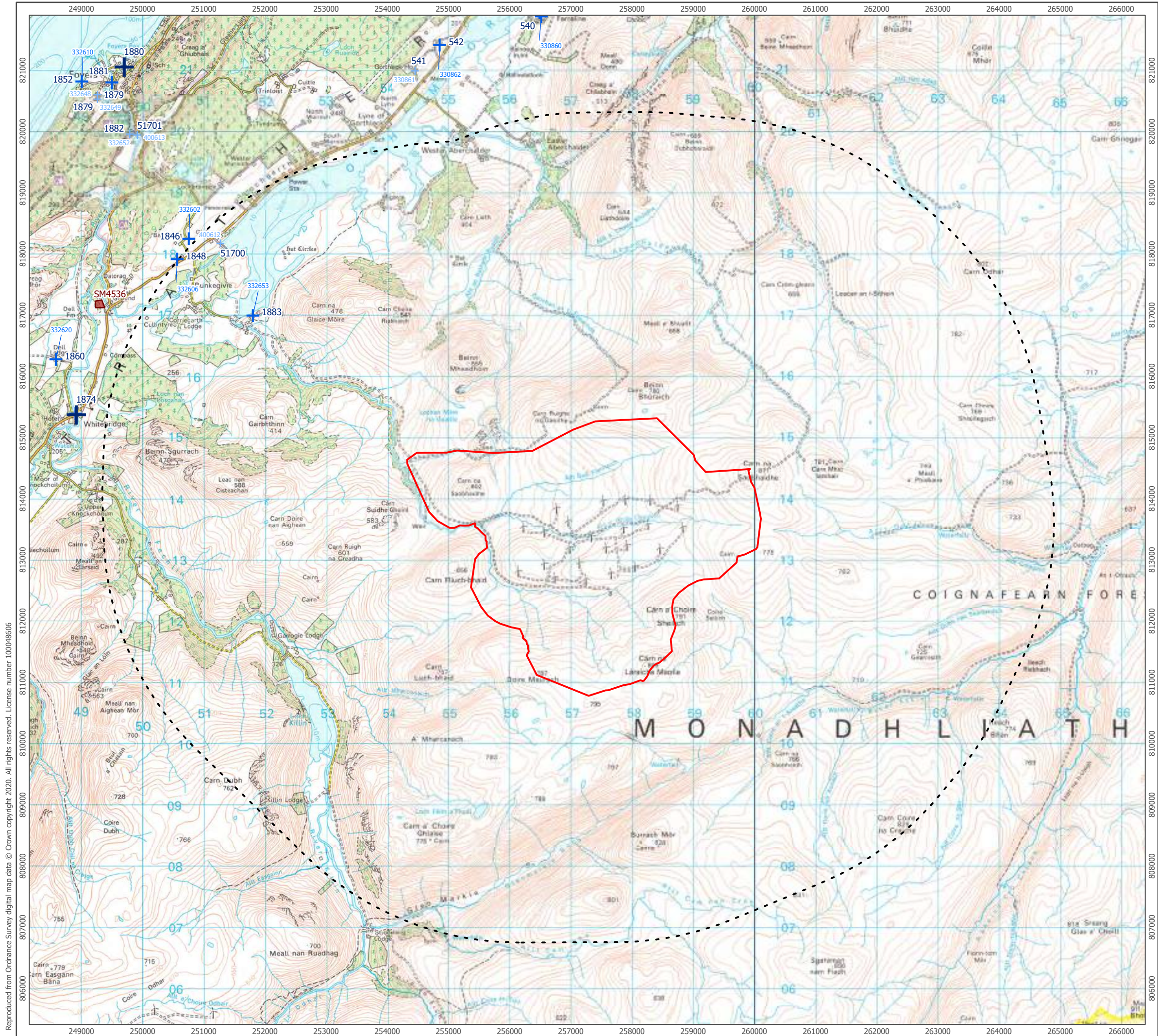
0 2.5 5 km

NORTH

Produced By: SC	Ref: 3369-REP-038
Checked By: HK	Date: 11/08/2020

Heritage Study Areas
Figure 1

Corriegarth 2 Wind Farm
Desk-based Assessment



- Core Study Area
- 5 km Study Area
- Scheduled Monuments
- A Listed Building
- B Listed Building
- C Listed Building

1:60,000 Scale @ A3

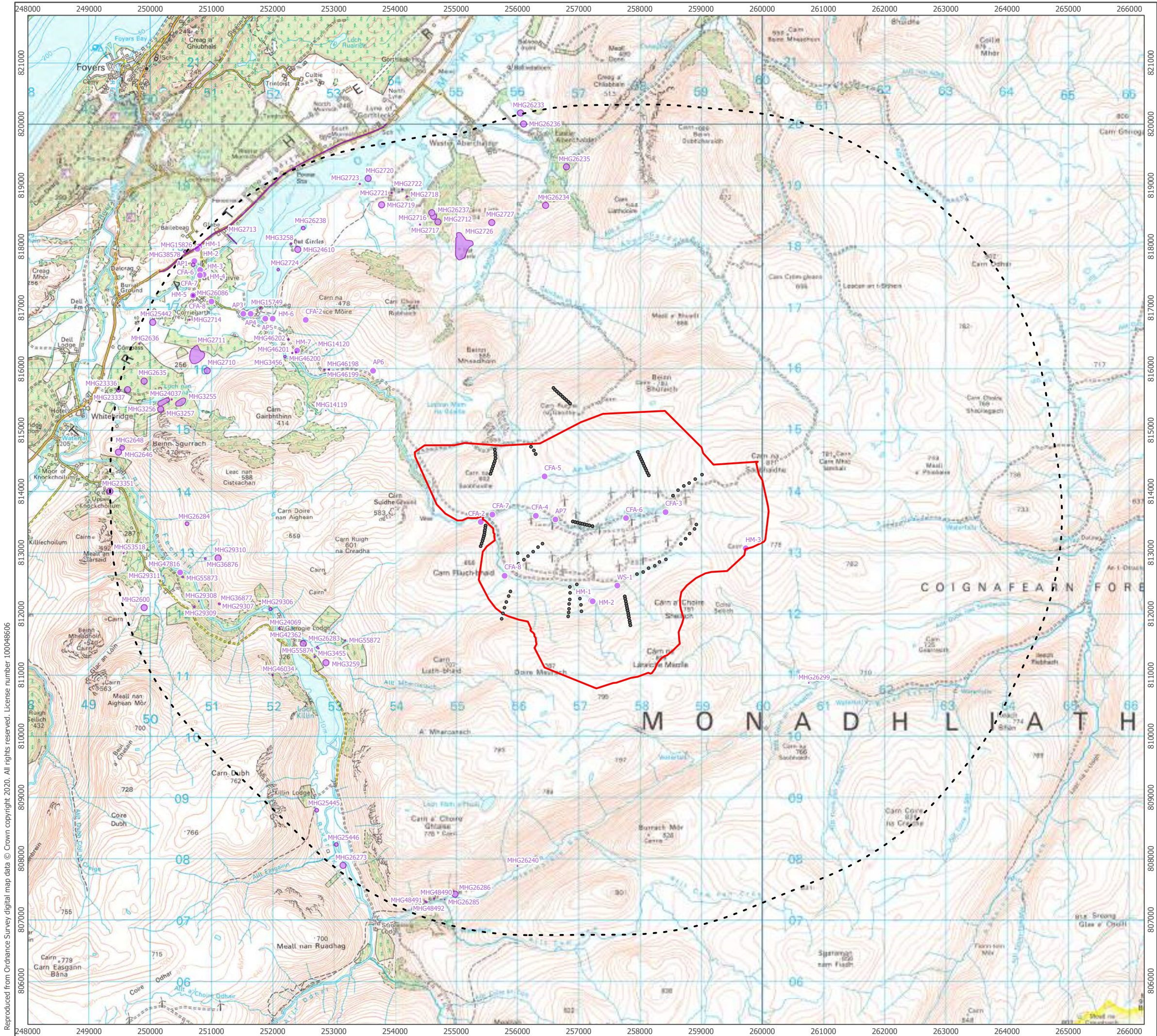
0 1 2 km

NORTH

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Checked By: HK	Date: 11/08/2020

Designated Heritage Assets
within 5 km Study Area
Figure 2

Corriegarth 2 Wind Farm
Desk-based Assessment



- Core Study Area
- 5 km Study Area
- Non-Designated Heritage Feature
- GrouseButts_approximate

1:60,000 Scale @ A3

0 1 2 km

NORTH

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Non-Designated Heritage Assets within 5 km Study Area

Figure 3

Corriegarth 2 Wind Farm Desk-based Assessment



 Core Study Area

1:20,000 Scale @ A3



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Date: 11/08/2020

OS 2nd Edition Map
Figure 4

Corriegarth 2 Wind Farm Desk-based Assessment



HISTORIC
ENVIRONMENT
SCOTLAND

ÀRAINNEACHD
EACHDRAIDHEIL
ALBA

By email: HeatherK@arcusconsulting.co.uk

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Our case ID: 300040527

23 July 2020

Dear Ms Kwiatkowski

[Corriegarth Windfarm Extension - Further Heritage Assets for consideration](#)

Thank you for your email and attached letter of 17 July consulting HES on the final selection of heritage assets for inclusion in the EIA Report for the above proposed development. We have reviewed the details you provided, and our comments here focus on our historic environment interests. This covers scheduled monuments and their settings, category A listed buildings and their settings, Inventory battlefields, Inventory gardens and designed landscapes, World Heritage Sites, and marine archaeology.

As you will be aware from our previous consultation responses in relation to these proposals, we have not identified any impacts for our interests which we consider likely to be significant. We have therefore not offered further comment or advice on the scope of assessment. This remains the case and we have no detailed comments to offer.

We recommend that you consult the relevant local authority archaeology and conservation services on these details. They will also be able to offer advice on potential impacts on the historic environment, covering a wider set of interests than ours.

We hope this is helpful. Please contact us if you have any questions about this response. The officer managing this case is Ruth Cameron, who can be contacted by phone on 0131 668 8657 or by email on Ruth.Cameron@hes.scot.

Yours sincerely

Historic Environment Scotland



Historic Environment Scotland (HES)
Via email: HMConsultations@hes.scot
Cc: THC Historic Environment Team, archaeology@highland.gov.uk

15th July 2020

**Corriegarth 2 Wind Farm Consultation (Energy Consents Unit Ref: ECU00002025,
THC Ref: 20/01003/SCOP, and HES Ref: 300040527)**

Dear Sir/Madam,

Following on from the scoping opinion issued by the ECU on 27th April 2020 (HES Ref: 300040527), we seek to confirm the final selection of heritage assets for inclusion in the EIA Report.

The methodology of assessment of indirect effects which will consider changes in setting which have the potential to affect the understanding, appreciation, and experience of heritage assets. The basis for the selection of heritage assets for inclusion in the EIA Report is as follows with full details provided in Table 1:

- All nationally designated heritage assets that are within the 10 km Study Area of the turbine area (as access track is existing) and Zone of Theoretical Visibility (ZTV) as detailed in Table 1 and 2 and shown on the attached figures, noting that the heritage assets in Foyers have been excluded as they are generally on a north facing slope looking over Loch Ness and not in ZTV; and
- Selected designated assets between 10-15 km that fall within the ZTV and have a greater landscape setting and/or extensive views that contribute to their cultural significance. These are detailed in Table 3 and 4 and shown on the attached figures.

An initial appraisal has been undertaken for designated heritage assets between 10-15 km to determine whether they should be included in the assessment. These are shown in the attached figure and detailed in Tables 3 and 4. I have also provided indicative wirelines from the heritage assets in Tables 3 and 4 where they appear to be in the ZTV. Could I ask that if you have any comments on this list to please provide these by Friday 24th July as submission is anticipated in August?

Yours sincerely,

**Heather Kwiatkowski, MCIfA
Principal Heritage Consultant**

Table 1: Scheduled Monuments within 10 km Study Area for inclusion in EIA

HER number	Name	Approximate Distance and Direction from the nearest turbine	Within ZTV
SM4532	Ceapmaol, settlement 300 m ENE of	9.1 km N	N
SM4536	Dell Farm, burial mounds 350 m NE of	5.7 km NW	Y
SM4538	Farraline, enclosure 780 m NE of	7.4 km N	Y
SM11500	Druimantorran, hut circles and field	9.6 km N	N
SM11884	Dun Deardail, forts 410 m and 520m ENE of Fasnagruig	9.7 km NW	Y

Table 2: Selected Listed Buildings within 10 km Study Area for inclusion in EIA

Listed Building Number	Listed Building Name	Category	Approximate distance and direction	Within ZTV
539	Farraline House	B	6.8 km N	Y
540	Farraline House, Walled Garden	B	6.8 km N	Y
541	Gorthleck House	C	6.4 km N	Y
542	Mains of Gorthleck	B	6.6 km N	Y
1682	Dunmaglass Bridge (not included in EIA)	B	9.9 km N	N
1846	Boleskine Parish Church	B	5.9 km N	Y
1847	Boleskine, Old Boleskine Parish Church (not included in EIA)	B	9.8 km NW	N
1848	Boleskine Old Manse	B	5.9 km N	Y

Listed Building Number	Listed Building Name	Category	Approximate distance and direction	Within ZTV
1849	Boleskine House (not included in EIA)	B	9.8 km NW	N
1850	Boleskine House, Stables (not included in EIA)	B	9.8 km NW	N
1852	Foyers Cemetery, Jane Fraser Memorial Obelisk (not included in EIA)	B	10 km	N
1860	Dell Lodge	B	6.8 km WNW	Y
1870	Inverfarigaig Bridge (not included in EIA)	B	9.7 km NW	N
1871	Inverfarigaig Pier (not included in EIA)	B	9.6 km NW	N
1874	Whitebridge, Old Bridge (not included in EIA)	A	6 km WNW	N
1875	Whitebridge, New Bridge (not included in EIA)	B	6 km WNW	N
1876	Knockie Lodge Hotel (not included in EIA)	C	9.8 km W	N
1877	Boleskine House, Gate Lodge (not included in EIA)	B	9.8 km NW	N
1879	Foyers Mains Steading, Dovecot and Hen House (not included in EIA)	C	10 km NW	N
1880	Foyers, British Aluminium Factory (not included in EIA)	A	10 km NW	N
1881	Foyers, Lower Foyers Bridge (not included in EIA)	B	10 km NW	N
1882	Foyers, Upper Foyers, Bridge Over River Foyers (not included in EIA)	C	8.8 km NW	N
1883	Garthbeg	B	5.3 km NW	Y
15016	Alltsigh House (not included in EIA)	B	9.9 km NW	N
50029	Errogie, Former United Free Church including boundary walls	C	7.4 km N	Y
50031	Errogie, Corrugated-Iron Cottage	C	7.4 km N	Y
51700	Foyers Hydroelectric Power Scheme and Former Aluminium Smelter, Loch Mhor Dam	C	5.1 km NW	Y
51701	Foyers Hydroelectric Power Scheme and Former Aluminium Smelter, River Tarff Intake (not included in EIA)	C	8.8 km NW	N

Table 3: Initial Appraisal of Scheduled Monuments between 10-15 km for Inclusion in EIA

Ref	Name	Approximate distance and direction	Within ZTV	Justification for Assessment or lack thereof
SM11070	'Crusader', remains of speedboat in Loch Ness, near Achnahannet	11.4 km N	N	Not Included - not in ZTV
SM11431	Ballachar, settlement, hut circles and field systems 275m NNW of	13.4 km N	Y	Not Included - A site of multi-period occupation/use until approximately the late medieval period, it's setting is the south facing slope overlooking Loch Ruthven. It's cultural significance lies in the archaeological potential to enhance understanding of settlements prior to 1700's. The current setting is confined to Loch Ruthven with the immediately surrounding hills (Stac Gorm to the south and Greag nan Clag to the west) defining its setting. The ZTV indicates that three turbines tips are theoretically visible; however, they do not extent above the existing ridgeline due to the landform and knolls which means that this would be a very distant feature which would not affect the asset's setting so that a significant effect significant in terms of EIA Regulations is very unlikely.
SM11433	West Croachy House, cairns 1000m ESE of	13.3 km NW	N	Not Included – not in ZTV

Ref	Name	Approximate distance and direction	Within ZTV	Justification for Assessment or lack thereof
SM11436	Dalcrombie, hut circles, settlement & field system 300m NNW of	14 km N	Y	Not Included - A site of multi-period occupation estimated to have been used until the Highland Clearance Era. At present the site is situated on sloping grazing ground with telegraph line running west to east to the north and a single wind turbine immediately to the site's east. The current setting is confined to Loch Ruthven with the immediately surrounding hills (Stac Gorm to the south and Greag nan Clag to the west) defining its setting. The ZTV indicates visibility of six turbine tips; however, this is within the height of the ridgeline so they do not extend above the highest point of the ridge. As such, intervening landform of numerous hills and knolls means that this would be a very distant feature which would not affect the asset's setting so that a significant effect significant in terms of EIA Regulations is very unlikely.
SM11468	Dhualallow, cairn 195m E of	13.1 km NW	N	Not Included – not in ZTV
SM11476	Ruthven, crannog 610m NNE of	13.2 km N	Y	Not Included – Two turbines are potentially visible in a gap within the ridgeline. As the remains of a crannog, the setting of the site is confined to Loch Ruthven and its surrounding hills which create a localised sense of enclosure. The intervening landform of numerous hills and knolls between the asset and the Development means that this would be a very distant feature which would not affect the asset's setting so that a significant effect significant in terms of EIA Regulations is very unlikely.
SM11490	Loch Ruthven, crannog 490m SSW of Tullich	14.3 km NW	N	Not Included – not in ZTV

Ref	Name	Approximate distance and direction	Within ZTV	Justification for Assessment or lack thereof
SM11540	Leadclune, cairn 1115m E of, Creag Innis an Daimh Dhuibh	10.8 km N	Y	Not Included – Several turbines are theoretically visible within saddle of the mountains, though these sit lower than the highest point of the ridgeline to the west. The intervening landform of numerous hills and knolls between the asset and the Development means that this would be a very distant feature which would not affect the asset's setting so that a significant effect significant in terms of EIA Regulations is very unlikely.
SM11541	Mains of Aberarder, fort 270m S of	10.62 km NW	N	Not Included – not in ZTV
SM11542	Mains of Aberarder, hut circle 1145m ESE of	10.62 km NW	N	Not Included – not in ZTV
SM11613	Tulich, settlements 760m NNE of	15 km N	Y	Not Included – the tips of two turbines are visible within a gap on the ridgeline with the tips not extending above the surrounding ridgeline. The intervening landform of numerous hills and knolls between the asset and the Development means that this would be a very distant feature which would not affect the asset's setting so that a significant effect significant in terms of EIA Regulations is very unlikely.
SM11710	Torness Cottage, two hut circles 300m SSW of	11.4 km N	N	Not Included – not in ZTV
SM11800	Torness, cairn 305m NNW of	12.1 km N	N	Not Included – not in ZTV

Ref	Name	Approximate distance and direction	Within ZTV	Justification for Assessment or lack thereof
SM11826	Ruthven, hut circles, field systems and burnt mounds 1200m S of	11.6 km N	Y	Not Included – One tip of a turbine would be visible in a gap in the ridgeline, not extending above the existing horizon. The intervening landform of numerous hills and knolls between the asset and the Development means that this would be a very distant feature which would not affect the asset's setting so that a significant effect significant in terms of EIA Regulations is very unlikely.
SM4501	Tom Buidhe, enclosure 480m NNE of Ruthven	13.2 km N	Y	Not Included - Situated on the south shore of Loch Ruthven, current setting is confined to the hills south of Loch Ruthven and to the hills south of Loch Duntelchaig. Two turbine tips are theoretically visible in a saddle gap of the ridgeline. The intervening landform of numerous hills and knolls between the asset and the Development means that this would be a very distant feature which would not affect the asset's setting so that a significant effect significant in terms of EIA Regulations is very unlikely.
SM4567	Levishie Cottage, fort and earthwork 1050m NE of	14.2 km NE	Y	Not Included – Tips of three turbines are visible in a gap of the ridgeline. The monument's cultural significance is its rarity as a type of small fort with main defences as a rampart between two ditches. Due to the fort's small size, any glimpses of the Development from 14 kms away are unlikely to have a significant impact upon its setting and will not alter the ability to appreciate its cultural significance. As such no further assessment on its setting will be required.

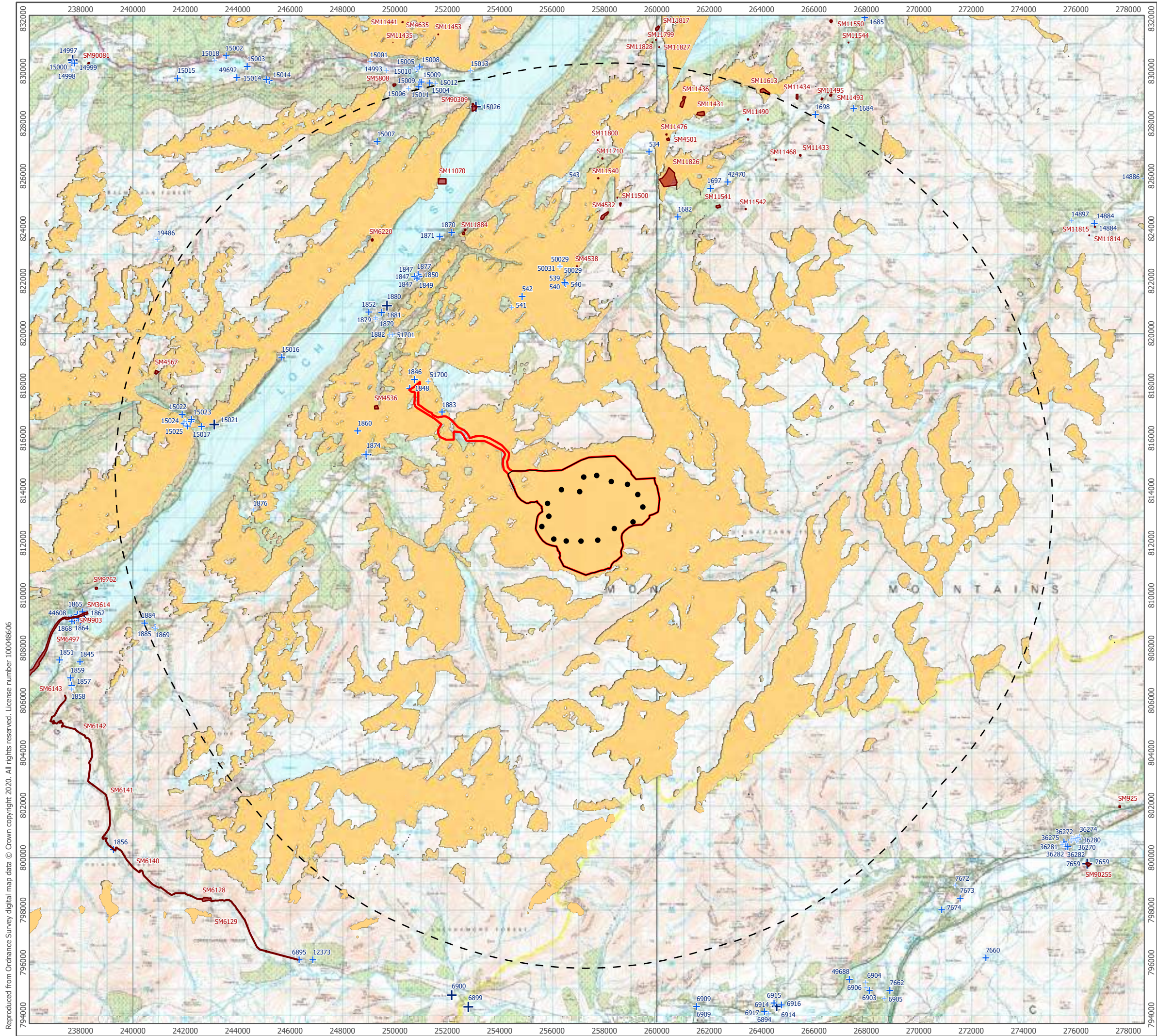
Ref	Name	Approximate distance and direction	Within ZTV	Justification for Assessment or lack thereof
SM6220	Dun Scriben, fort	10.6 km NW	Y	Not Included - Situated on a grassy knoll on the opposite side of Loch Ness, the fort was built as a defensive structure to have strategic views along Loch Ness and the surrounding area. As the surrounding area has developed through time, the monument has experienced change to its setting. The Development would be visible in conjunction with the Operational Corriegarth Wind Farm so that the addition of turbines slightly extends the view of turbines laterally east/west in an which already contains turbines. This would not change the existing setting and will not alter the ability to appreciate its cultural significance. As such no further assessment on its setting will be required.
SM90309	Urquhart Castle	14.1 km NW	N	Not Included – not in ZTV

Table 4: Initial Appraisal of Listed Buildings between 10-15 km for Inclusion in EIA

Listed Building Number	Name	Category	Approximate distance and direction from Core Study Area	Within ZTV	Justification for Assessment or lack thereof
534	Abersky Farmhouse	B	11.6 km N	N	Not Included – not in ZTV
543	Leadclune	C	10.6 km N	N	Not Included – not in ZTV
1697	Aberarder House	B	11.2 km N	N	Not Included – not in ZTV
1869	Allt Doe Bridge, Re-Aligned A862	C	14.9 km SW	N	Not Included – not in ZTV
1884	Allt An Reidhean Burn Bridge	B	15 km SW	N	Not Included – not in ZTV

Listed Building Number	Name	Category	Approximate distance and direction from Core Study Area	Within ZTV	Justification for Assessment or lack thereof
1885	Allt Doe Bridge	B	14.9 km SW	N	Not Included – not in ZTV
15007	Drumnadrochit, Dhivach Lodge	B	13.5 km NW	N	Not Included – not in ZTV
15017	Invermoriston House, 'Barracks' And Servant's Tunnel	B	11.9 km W	Y	Not Included - Only the tips of two turbines would be visible. This designation comprises of a single storey structure and tunnel with no designed views towards the Development. As such it will not experience any significant effect upon its setting and no further assessment is required.
15019	Invermoriston, Smithy House	C	12.3 km W	N	Not Included – not in ZTV
15020	Invermoriston House, Gazebo	B	12.3 km W	N	Not Included – not in ZTV
15021	Invermoriston Home Farm	A	11.9 km W	N	Not Included – not in ZTV
15022	Invermoriston, Church of Scotland	B	12.7 km W	N	Not Included – not in ZTV

Listed Building Number	Name	Category	Approximate distance and direction from Core Study Area	Within ZTV	Justification for Assessment or lack thereof
15023	Invermoriston, St Columba's Church Graveyard, Gatepiers	B	12.4 km W	Y	Not Included - Tips of three turbines would be visible between the gap of two hills with the tips of 4 turbines currently visibly of the Operational Corriegarth Wind Farm. At this distance, the inclusion of the tips of further turbines in area already with turbines would not alter the setting.
15024	Invermoriston Old Bridge	B	12.3 km W	N	Not Included – not in ZTV
15025	Invermoriston New Bridge	B	12.3 km W	N	Not Included – not in ZTV
42470	Bridgend Farmhouse with Byre	B	11.3 km N	N	Not Included – not in ZTV



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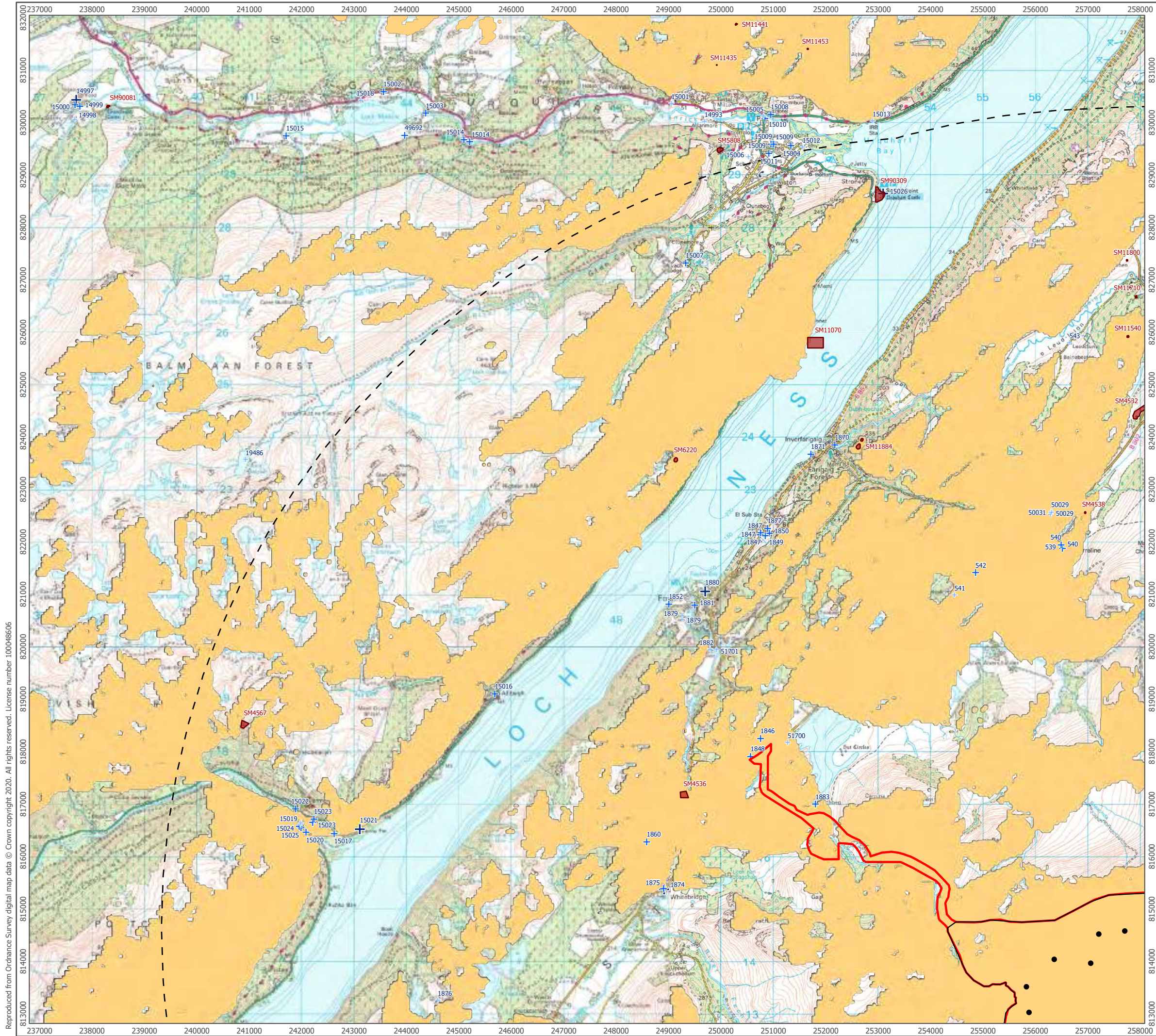
- Site Boundary
- Core Study Area
- 15 km Study Area
- Proposed Turbine Location
- Core Study Area
- Scheduled Monuments
- A Listed Building
- B Listed Building
- C Listed Building
- Areas where turbines may be visible

1:140,000 Scale @ A3
0 2.5 5 km
NORTH

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ZTV HES Consultation Overview

Corriegarth 2 Wind Farm



- Site Boundary
- Core Study Area
- 15 km Study Area
- Proposed Turbine Location
- Core Study Area
- Scheduled Monuments
- A Listed Building
- B Listed Building
- C Listed Building
- Areas where turbines may be visible

1:70,000 Scale @ A3

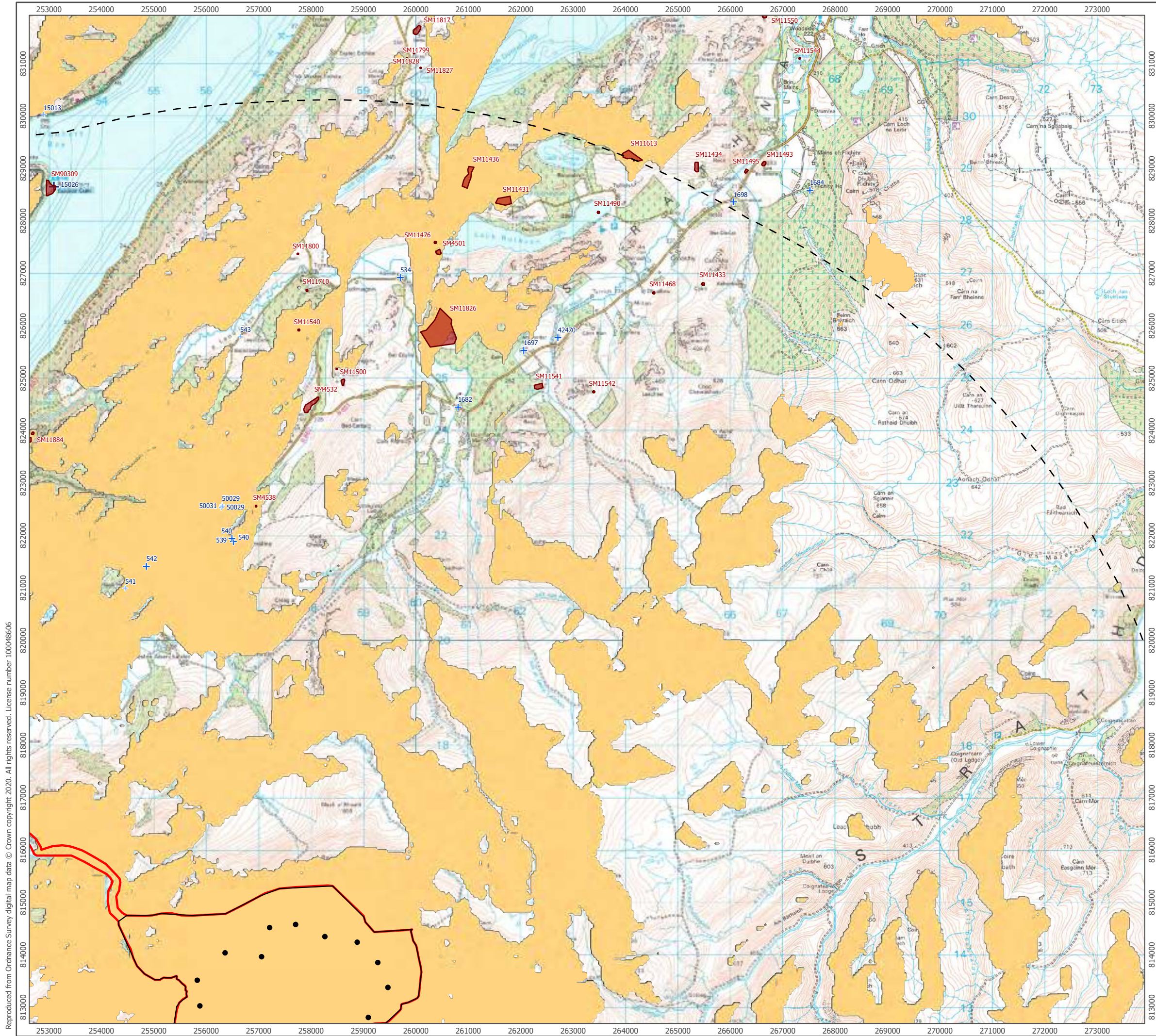
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NORTH

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ZTV HES Consultation
North West

Corriegarth 2 Wind Farm



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- Site Boundary
- Core Study Area
- 15 km Study Area
- Proposed Turbine Location
- Core Study Area
- Scheduled Monuments
- A Listed Building
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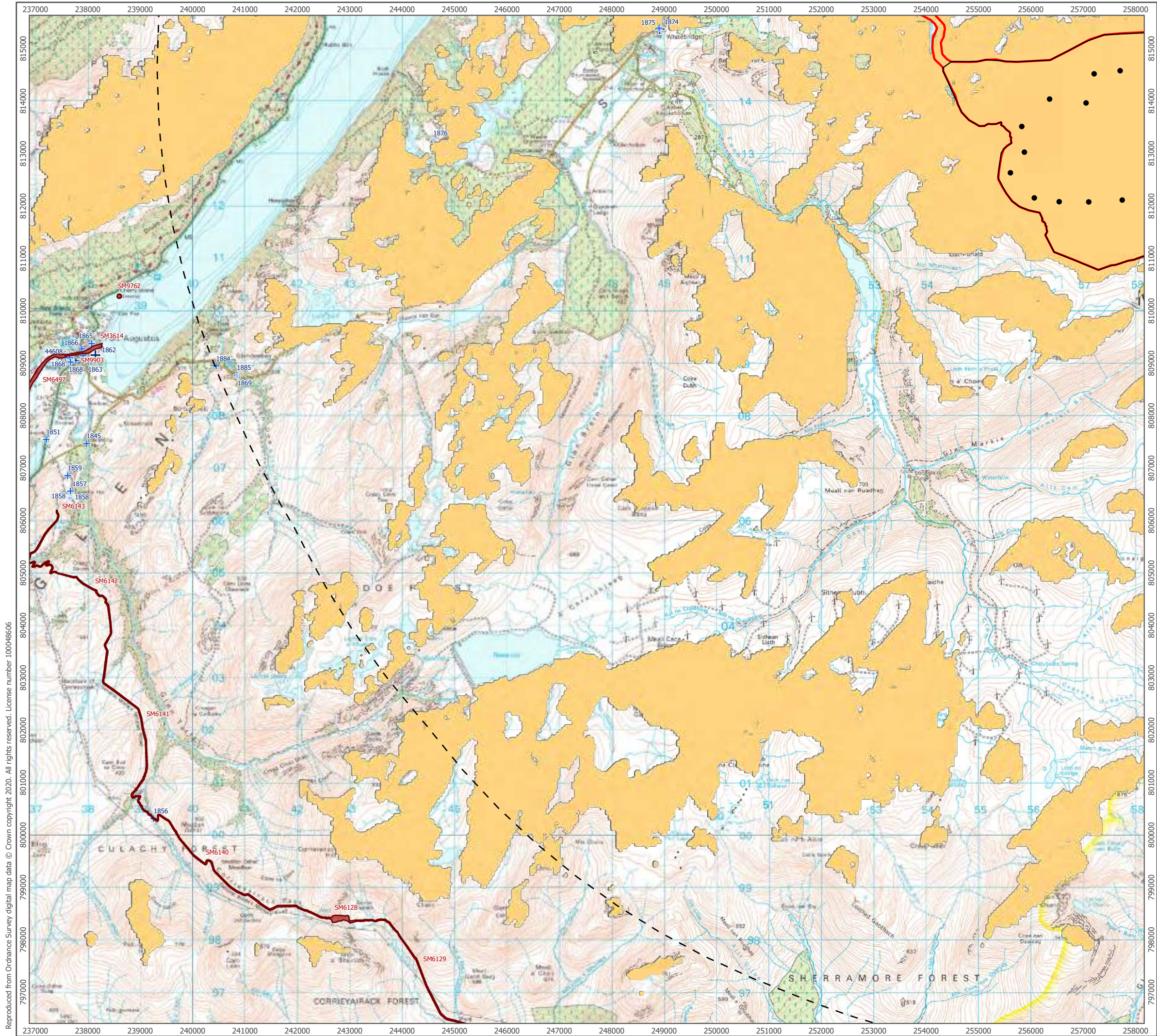
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**ZTV HES Consultation
North East**

Corriegarth 2 Wind Farm



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- Site Boundary
- Core Study Area
- 15 km Study Area
- Proposed Turbine Location
- Core Study Area
- Scheduled Monuments
- A Listed Building
- B Listed Building
- C Listed Building
- Areas where turbines may be visible

1:70,000 Scale @ A3



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**ZTV HES Consultation
South West**

Corriegarth 2 Wind Farm



CORRIEGARTH 2 WIND FARM

TECHNICAL APPENDIX A11.1

FRAMEWORK CONSTRUCTION TRAFFIC MANAGEMENT PLAN

SEPTEMBER 2020



Prepared By:

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1 INTRODUCTION

1.1 Background

Arcus Consultancy Services Ltd (Arcus), on behalf of Corriegarth 2 Windfarm Limited (the Applicant), has prepared a Framework Construction Traffic Management Plan (FCTMP) for the Corriegarth 2 Wind Farm (the Development). The Development comprises 16 wind turbines and associated infrastructure, with a generation capacity exceeding 50 megawatts (MW), and is located adjacent to the Operational Corriegarth Wind Farm, within the Corriegarth Estate on the edge of the Monadhliath Mountains, approximately 15 kilometres (km) northeast of Fort Augustus and 10 km southeast of Foyers.

The Site is situated within the Corriegarth Estate, covering an area of approximately 1,694 ha, centred on National Grid Reference (NGR) 257500, 813100. The Site includes the Operational Corriegarth Wind Farm and associated infrastructure.

This FCTMP provides detail on the final access routes of all construction traffic and any work required to allow the safe passage of the Abnormal Load Vehicles (ALVs) associated with the Development. The FCTMP provides an overview of the routes to the Site, descriptions of the vehicles likely to be used, an assessment of any potential constraints and details of appropriate mitigation measures.

The FCTMP is a 'live' document and will be amended and developed throughout the lifespan of the Development.

The Principal Contractor appointed by the Applicant will adopt and monitor the FCTMP. The Principal Contractor will maintain communication with Highland Council Planning and Roads Departments, Transport Scotland (Transport Scotland), Bear Scotland and Police Scotland as appropriate.

1.2 Framework Construction Traffic Management Plan

From the Highland Council scoping response, it was advised that the Transport Assessment should include a framework CTMP aimed at minimising the impact of the construction traffic. Including measures to ensure development traffic adheres to the approved routes and establish protocols for the movement of HGV's on minor public roads. This document will be developed as required following the initial application.

1.3 Structure of FCTMP

The FCTMP is accompanied by:

- Appendix A: Summary of Delivery Driver Instructions; and
- Appendix B: Key Contacts.

2 CONSTRUCTION VEHICLE ROUTING AND VEHICLE TYPES

The Site Location and Route to Site Plans from the Ports of delivery (Invergordon) are shown in Figure 11.1.1 of this FCTMP.

A single route of delivery is proposed to the site, turbine blade components will be transported by sea to the port of Invergordon and follow the Abnormal Load Route specified below. All other construction vehicles associated with the Development will also follow the same route from A9.

2.1 Abnormal Load Vehicles

The **Abnormal Load Route** is summarised below:

- Leave Port of Invergordon;
- Turn left onto B817;
- Right turn at mini-roundabout to continue on B817;
- Right turn onto A9 south-west bound;
- Continue straight at roundabout to cross Cromarty Bridge (A9);
- Continue straight through Tore Roundabout to continue on A9;
- Cross Kessock Bridge (A9) and continue through Longman Roundabout onto A9 southbound;
- Turn right onto B851;
- Continue on B851 through Inverarnie;
- Turn left onto B862; and
- Turn left onto the Unclassified Road U1221 towards the site access road.

2.2 General Construction Traffic

The **General Construction Vehicle Route** is summarised below:

- Traffic is assumed to be approaching from the A9;
- Turn from A9 onto B851;
- Continue on B851 through Inverarnie;
- Turn left onto B862; and
- Turn left onto the Unclassified Road U1221 towards the site access road.

2.3 Turbine Delivery Vehicles

Turbine Delivery Vehicles (TDVs) dimensions have been extracted from the candidate turbine dimensions (Nordex N133) as noted within the Abnormal Load Route Assessment. These details represent typical arrangements for the scale of turbine being considered:

- Each tower consists of 3 separate sections; the longest section will be up to 34.4 m in length;
- The 48 turbine blades (3 per turbine) will each be up to 65.5 m in length;
- The TDV is 2.6 m wide, with the maximum load width being up to 4.7 m.

It is assumed that the blades would be carried on a Nooteboom Super Wing Carrier (or similar) trailer.

2.4 Cranes

Two cranes are required to lift the turbine sections and blades into place during construction. The main installation crane is likely to be the most onerous ALV to use the public road network with the exception of turbine components.

A typical main installation crane (e.g. Liebherr LG 1750) is 19 m long and 3 m wide with a travelling weight of 96 tonnes. The delivery of the crane would require several supporting

HGVs to build up the full rigged lifting platform. A smaller support crane would also be required to assist with installation.

2.5 Heavy Goods Vehicles

It is believed as with the first phase of Corriegarth that it is possible to win material on-site which has the potential to reduce import of both aggregate and concrete. This means it is likely that less construction vehicles will require access to site.

2.6 Construction workers and Light Goods Vehicles

It is envisaged that vehicles transporting construction workers will utilise the same Access Route as the construction traffic. However, the route used by construction workers may vary depending on their point of origin. Consequently, no designated route or time restrictions are proposed for these types of vehicles, although travel planning measures will be taken to ensure that the increase in traffic associated with the construction workers is minimised.

Light Goods Vehicles (LGVs) are anticipated to comprise vans, pickups, minibuses and crew vans to transport staff and small scale equipment to and from the Site.

2.7 Emergency Vehicle Access

In the event of any incidents onsite or during deliveries to Site, the emergency services can access the Site from the A9, B851 onto B862; and then Unclassified Road U1221 or from the south from Fort Augustus A82, B862 and then Unclassified Road U1221. Contact details for the nearest emergency services are provided in Appendix B of the FCTMP.

3 MANAGEMENT OF JUNCTIONS

3.1 Site Access Junction

A single access point will be available for the delivery of turbine components and construction traffic via the U1221, shown on Figures 11.1. All general construction traffic will approach the U1221 from the B862 to the north.

Access to the Site is shown on Figures 11.1 EIA, and approximately located at Grid Reference 251390,816940. Apart from minor widening for ALV vehicles no further improvements are proposed for the existing wind farm access.

A temporary over-run area for abnormal loads will form part of the junction arrangement when approaching the Site entrance.

4 TIMING OF MOVEMENTS

For the purposes of the FCTMP, deliveries in this context relate to HGV vehicles. During construction periods deliveries and loading/unloading will be restricted to between the hours of 08:00-18:00 on Monday to Friday and 08:00-13:00 on Saturday. During the pouring of turbine foundations concrete will need to be delivered continuously, due to remote nature of the development it is anticipated that onsite batching will be used to construct the foundations allowing the site deliveries to split over a much longer period for storage on site.

ALV movements and timing will be defined once further negotiation with the turbine supplier and their supply chain are determined. If required, off peak movements, from 18:00 onwards, can be arranged subject to the necessary approvals. The relevant roads authorities (Highland Planning and Roads Departments) and Police Scotland, will be consulted in respect of obtaining transport permits if required.

5 TRAFFIC MANAGEMENT PLAN

Drivers of site and construction traffic vehicles will be aware of Access Route and contingency measures as explained during the induction period, as set out in Section 5.2.4. Drivers of HGVs and ALVs will also be inducted and good road practice will be made clear prior to any traffic movements, including:

- The contractor will be required to implement induction procedures and promote road safety and awareness; and
- Where possible, arrangements will be made for site workers to share transport and minimise unnecessary traffic movements locally.

All ALV vehicles and a representative from the Principal Contractor will be in contact via two-way radios.

As previously set out, Police Scotland should have written notice in advance of the deliveries of turbine component. This could involve daily and weekly communication in advance of vehicles leaving the Port.

Police Scotland, Highland Planning and Roads Departments, and Transport Scotland as the Roads Authority will be consulted in respect of obtaining the relevant transport permits.

The Site access junction will be kept clear at all times and on-site staff will ensure no vehicles attempt to use this for parking.

A summary of instructions to be issued to all drivers to Site is included in Appendix A.

5.1 Traffic Management Measures

The following sub-sections discuss traffic management measures to be adopted at each phase of the Development.

5.1.1 Construction

During all phases of construction approximately 40 personnel would be employed on site every day. This equates to an average of approximately 26 cars/vans arriving and exiting the Site during the morning and afternoon peak hours respectively, assuming car sharing will be encouraged. This increased level of general traffic would have minimal effect on the local road network and therefore does not require any traffic management.

Given the nature of the Development, the materials and turbine components that will be transported to Site are known and will require the use and notification of 11 ALVs per turbine (176 in total for the Development).

Some additional loads have the potential to be classed as abnormal loads (although at this stage this is considered unlikely) depending upon detailed specification by the Principal Contractor:

- Cranes (may not be abnormal load); and
- Crane Ballast and Rigging Trucks (may not be abnormal load).

5.1.1.1 Indicative Construction Traffic Programme

The indicative construction traffic programme and associated vehicle numbers are provided in Table 5.1. This programme assumes a 26 day month and an 18 month construction period. The highlights one-way traffic movements to be carried out during the construction phase. Each delivery to Site generates two movements, that is, one to the Site and the other returning from the Site. The construction period is scheduled to begin post 2023.

Table 5.1 – Indicative Construction Movements

Activity	Month																		Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	HGVs																		
Site Mobilisation	60																		60
Access Track Construction		786	786	786	788	788	788	788											5510
Turbine Foundations						297	297	296	296	296	296								1778
Control Building / Substation			16	14	12	12	12	12	12	12									102
Cabling and Electrical Works										10	10	10							30
Crane Delivery										27							27		54
Turbine Delivery										44	44	44	44	44	44	44	44		352
Fuel Delivery	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	36
Demobilisation																		60	60
HGV Sub-Total	62	788	804	802	802	1099	1099	1098	310	391	352	56	46	46	46	46	73	62	7982
	Cars / Vans																		
Turbine Escort Vehicles										88	88	88	88	88	88	88	88		704
Staff	663	663	663	663	663	663	663	663	663	663	663	663	663	663	663	663	663	663	11934
Car / Van Sub-Total	663	663	663	663	663	663	663	663	663	751	751	751	751	751	751	751	751	663	12638
Overall Total	725	1451	1467	1465	1465	1762	1762	1761	973	1142	1103	807	797	797	797	797	824	725	20620
Average Day (26-day working month)	28	56	56	56	56	68	68	68	37	44	42	31	31	31	31	31	32	28	

5.1.2 Operation

During the operational phase of the Development, it is anticipated that the trip generation associated with the maintenance of the Development will be minimal. It is anticipated that the majority of maintenance vehicles will be light vehicles, with HGVs or ALVs only being required if it becomes necessary to replace turbine components. For blade inspections a crane may be required.

Due to the low level of traffic expected during operation and the negligible impact that this is predicted to have on the local transport network no specific traffic management measures are proposed during the operational phase of the Development.

5.1.3 Decommissioning

At the end of the 30 year operational life of the Development, the turbines and all associated above ground equipment will be completely removed in line with the Decommissioning Statement. Turbine towers and blades are likely to be dismantled into smaller sections prior to their removal to ease transport requirements and need for ALVs.

At this stage, it is not possible to forecast quantitatively the traffic effect during decommissioning of the Development, as projections of the baseline data 30 years into the future would not be accurate. However, prior to decommissioning of the Development, a further traffic assessment will be undertaken and traffic management procedures agreed with the local authority and Roads Authority as required.

The levels of traffic associated with the decommissioning of the Development will be less than that during construction since some of the below ground elements will be left in situ and the access tracks may be retained for use by the landowners, as detailed in the Decommissioning Statement.

5.2 Mitigation Measures

The FCTMP covers the mitigation measures required to be complied with during the construction of the Development. A potentially significant effect relating to pedestrian amenity at Farr and Stratherrick Primary Schools, as well as on the Trail of the Seven Lochs where it utilises the U1112, was identified in the EIA Chapter 11. In order to mitigate against this effect a number of mitigation measures were identified for inclusion in this FTMP. These are addressed in Section 5.2.3 of this FTMP.

5.2.1 Details of Escorts of Abnormal Loads

Police Scotland, and other relevant stakeholders will receive written notice in advance of turbine component deliveries. This could involve daily and weekly communication in advance of vehicles leaving the Port.

It is recommended that police escort vehicles be used to provide an escort for all ALVs travelling from the Port Invergordon to the Site. The general preference is to employ a convoy system, with a vehicle at the front and rear to warn oncoming vehicles of the approaching load. Drivers responsible for operating the convoy should be fully briefed on the Access Route, where and when to make any pre-defined stops, and be aware of all contingency measures in place in the event of an incident occurring.

All ALVs and lead traffic management staff shall be in contact via two-way radios for the duration of the delivery. This will minimise any adverse impacts caused by construction traffic on the local road network associated with the Development.

5.2.2 Temporary Warning Signage

All contractors will be monitored to ensure they follow the correct Access Route identified and that all routes are clearly signposted. Temporary warning signage will be restricted to the vicinity of the Site access, pedestrian and road user safety will be enhanced via the installation of signage and the maintenance of sight lines. Slow moving ALVs will be turning in this area and it may be useful to enforce an advisory temporary lower speed limit. This will minimise any adverse impacts caused by construction traffic on the local road network associated with the Development.

5.2.3 Management of Approach Route to Site

All vehicles will be directed along the B862 and U1221 road to access the Site. A small number of residential properties and farms are located along the B862 and U1221 which are likely to require unrestricted access. The U1221 forms part of the Trail of the Seven Lochs between its junction with the B862 and Garthbeg Lodge, with the exception of this section none of the roads feature any key receptors with pedestrian access and are considered to be of low sensitivity to pedestrians. Mitigation measures relating to the Trail of the Seven Lochs are provided below.

The Principal Contractor is required to maintain safe operation of the B862 and U1221 throughout construction of the Development and to ensure that local residents, businesses and pedestrians have unrestricted access to use the route. The requirement to operate this route safely through mitigation is included as a commitment within the ES and therefore is an essential requirement of the overall planning permission of the Development. The Principal Contractor must ensure the following principles are met in order to satisfy these requirements:

- Local residents, business users and pedestrians must have safe and unrestricted access to the Access Route throughout construction of the Development; and
- The Access Route must not become blocked by any vehicles associated with the Development including deliveries, staff vehicles, all subcontractors and any other visitors to the Site.

In order to satisfy these requirements, the following mitigation measures should be adhered to:

- Notify local residents and Community Council of proposed timings for ALVs deliveries and predicted days of elevated construction traffic will aim to avoid a high level of adverse impact where possible;
- Signage to be provided to warn recreational users at construction traffic crossing points;
- A temporary 30mph speed limit will be implemented on the U1221 where it forms part of the Trail of the Seven Lochs (i.e. between the B862 and Garthbeg Lodge) for the duration of construction;
- As far as reasonably possible, deliveries should be scheduled outside of school opening and closing times;
- Drivers of all delivery vehicles to be made aware during induction of the presence of schools and emergency services and that formal pedestrian crossing facilities are not present within a number of villages through which the route passes;
- Drivers to be reminded that part-time 20mph speed limits are present on the delivery route within the vicinity of the identified primary schools and that these will be in operation during school opening, closing and lunch times. Drivers to be reminded that strict adherence to these part-time limits is a legal requirement and condition of their contract;
- Arrangements for regular road maintenance and cleaning, e.g. road sweeping in the vicinity of site access points as necessary; and

- Drivers to be briefed on pulling over to the side of the road at suitably safe locations to allow other road users to overtake safely.

5.2.4 Contingency Plan

A contingency plan will be designed to provide additional safety in the event of unplanned circumstances such as transport delay or impedance of traffic through vehicle breakdown. In particular it will focus on the potential for blockage to the public road network through breakdown of ALVs or HGVs.

Should these unlikely circumstances occur, escort personnel would be on hand to manage the traffic, set up arrangements around the breakdown (local diversion if required) and liaise with Police Scotland. Vehicle service personnel would be readily available for immediate repair. This will minimise any adverse impacts caused by construction traffic on the local road network associated with the Development.

In the unusual event that a load needs to be removed from a vehicle, a local crane will be mobilised to transfer the component to another transport vehicle.

5.2.5 Enforcement

All contractors will be monitored (through regular spot-checks) to ensure they follow correct Access Routes. Access Routes identified will be clearly defined in all sub-contracts and signposted. Any contractor not adhering to the relevant route guidance and the overarching FCTMP will be disciplined and may be removed from the Development; this will be contractually specified where practical to do so.

The Site access will be kept clear at all times during construction and will be monitored by on-site staff to ensure vehicles do not attempt to use the area for parking.

5.2.6 Notifications

A full list of key contacts for the FCTMP is included in Appendix B.

5.2.6.1 Emergency Services

Consistent with the procedures defined through previous and ongoing consultation; Police Scotland will be given written notice of turbine deliveries and ALVs.

Weekly and daily communication with Police Scotland and Roads Authorities will be necessary in advance of the ALVs leaving Wick harbour by road.

The Applicant is committed to working with Police Scotland and other emergency services to ensure that the deliveries associated with the Development do not cause any detriment to emergency service response locally. Through the traffic management measures stated in the FCTMP, access for emergency services will be maintained.

5.2.6.2 Roads Authorities

The relevant Roads Authorities will be consulted as required in respect of the relevant transport permits including Highland Planning and Roads Departments, Transport Scotland, Bear Scotland and Police Scotland as appropriate.

The Applicant and the Principal Contractor will work with the relevant roads authorities to identify planned engineering or other works/events which might conflict with the delivery route times. Discussion will then take place in order to establish appropriate measures which will minimise the potential for associated disruption to local communities.

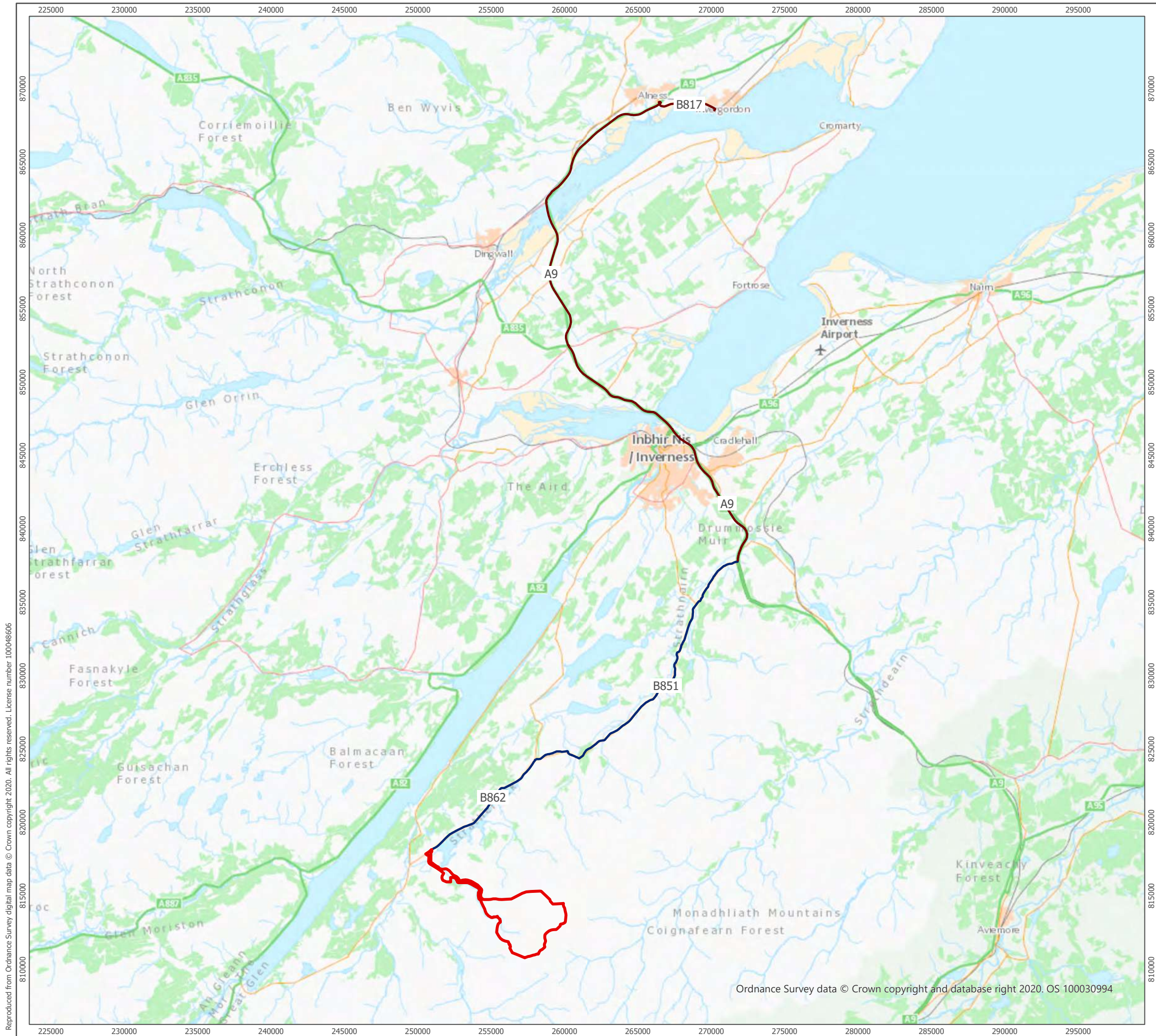
Transport of significantly large or 'out of gauge' loads (classed as such on account of their abnormal length, width, height or weight) will require notification to Transport Scotland.

5.2.6.3 Local Communities

The Applicant and the Principal Contactor will ensure local communities, local residents and statutory consultees are informed of Site deliveries throughout the construction period. This would include circulation of information about ongoing activities and in particular those which could have potential to cause disturbance. A telephone number for the Principal Contractor will be available during operational hours to resolve any traffic management problems that occur.

The Applicant and the Principal Contractor will liaise with the Highland Council and community to identify major events in the area and to programme the construction works so that they not disrupt the local road network on these days.

FIGURES





 Site Boundary

 General Construction and Abnormal Load Route

 Abnormal Load Route

1:250,000 Scale @ A3



Produced By: FC	Ref: 3369-REP-089
Checked By: SC	Date: 18/09/2020

Route to Site
Figure 11.1.1

Corriegarth 2 Wind Farm
TA 11.1: Framework Construction
Traffic Management Plan

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APPENDIX A – SUMMARY OF DELIVERY DRIVER INSTRUCTIONS

Instruction
Construction traffic will access the site from the north on the A9 before joining the B851 onto the B862 and then U1221.
Abnormal Load Vehicles will access the site from the north on the A9 and B851 onto B862 and then U1221 before joining a private access track.
Deliveries and loading / unloading of HGVs are restricted to 08:00 - 18:00 on Monday to Friday and 08:00-13:00 on Saturday during construction periods.
The site access junction must be kept clear at all times and on-site staff will ensure no vehicles attempt to use this for parking.
Drivers should be aware of the delivery routes defined in the FCTMP and contingency measures as pre-defined at induction stage.

APPENDIX B – KEY CONTACTS

Police Scotland	
Address:	Inverness DHQ Police Station Old Perth Road, Inverness, IV2 3SY
Tel:	101 or 999
Highland and Island Fire and Rescue Service	
Address:	Fort Augustus Market Hill, Fort Augustus, Highland, PH32 4DS.
Tel:	999 or 01463 227000
Raigmore Hospital	
Address:	Old Perth Rd, Inverness, IV2 3UJ
Tel:	01463 704000
Highland Council Roads Authority	
Address:	Glenurquhart Road, Inverness, IV3 5NX
Tel:	01349 886601
Transport Scotland	
Address:	Buchanan House, 58 Port Dundas Road, Glasgow, G4 0HF
Tel:	0141 272 7100
BEAR Scotland	
Address:	BEAR Scotland Limited, Bridge Point Depot, 23a Longman Drive, Inverness IV1 1SU
Tel:	03300 080520



CORRIEGARTH 2 WIND FARM

APPENDIX A11.2

PROGRAMME OF VEHICLE MOVEMENTS

SEPTEMBER 2020



TA11.2 - Programme of Vehicle Deliveries																			
Activity	Month																		Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	HGVs and ALVs																		
Site Mobilisation	60																		60
Access Track Construction		786	786	786	788	788	788	788											5510
Turbine Foundations						297	297	296	296	296	296								1778
Control Building / Substation			16	14	12	12	12	12	12	12									102
Cabling and Electrical Works										10	10	10							30
Crane Delivery										27							27		54
Turbine Delivery										44	44	44	44	44	44	44	44		352
Fuel Delivery	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	36
Demobilisation																		60	60
HGV Sub-Total	62	788	804	802	802	1099	1099	1098	310	391	352	56	46	46	46	46	73	62	7982
	Cars / Vans																		
Turbine Escort Vehicles										88	88	88	88	88	88	88	88		704
Staff	663	663	663	663	663	663	663	663	663	663	663	663	663	663	663	663	663	663	11934
Car / Van Sub-Total	663	663	663	663	663	663	663	663	663	751	751	751	751	751	751	751	751	663	12638
Overall Total	725	1451	1467	1465	1465	1762	1762	1761	973	1142	1103	807	797	797	797	797	824	725	20620
Average Day (26-day working month)	28	56	56	56	56	68	68	68	37	44	42	31	31	31	31	31	32	28	



CORRIEGARTH 2 WIND FARM

TECHNICAL APPENDIX 12.1

**OUTLINE WATER CONSTRUCTION ENVIRONMENTAL
MANAGEMENT PLAN**

October 2020



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1 INTRODUCTION

This outline Water and Construction Environmental Management Plan (WCEMP) forms an appendix to the Environmental Impact Assessment Report (EIA Report) **Chapter 12: Hydrology and Hydrogeology** (EIA Report Chapter) for Corriegarth 2 Wind Farm (the Development).

1.1 Guidance and Legislation

The following legislation and guidance documents have been used to inform the overall WCEMP:

- The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR)¹;
- The Water Quality (Scotland) Regulations 2010²;
- Good practice during wind farm construction³;
- Groundwater Protection Policy for Scotland Version 3 (2009)⁴;
- SEPA Planning guidance on on-shore windfarm developments (LUPS-GU4)⁵;
- The Construction Industry Research and Information Association (CIRIA) (2015), Environmental Good Practice on Site (C741)⁶;
- Guidance for Pollution Prevention (GPP/ PPG) 1: Understanding your environmental responsibilities⁷; and
- Planning Advice Note (PAN) 61 – Planning and Sustainable Urban Drainage Systems⁸.

Relevant guidance and best practice document are subsequently provided in the relevant sections of this report.

2 DEVELOPMENT REQUIREMENTS

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

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

2.1 Potential Sources of Pollution

The identified potential sources of pollution as a result of the construction, operational and decommissioning phases of the Development, based on the findings of the EIA Report Chapter, are as follows:

- Direct disturbance of banks and bed of river and lochs;

¹ UK Government (2011) The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) [Online] Available at: <http://www.legislation.gov.uk/ssi/2011/209/contents/made>

² The Scottish Government (2010) *The Water Quality (Scotland) Regulations 2010* [Online] Available at: <http://www.legislation.gov.uk/ssi/2010/95/contents/made> (Accessed: 14/11/2019)

³ Scottish Renewables, Scottish Natural Heritage, SEPA, Forestry Commission Scotland, Historic Environment Scotland, Marine Science Scotland (2019) *Good Practice during Wind Farm Construction 4th Edition* [Online] Available at: <https://www.nature.scot/guidance-good-practice-during-wind-farm-construction> (Accessed: 08/06/2020)

⁴ SEPA (2009) *Groundwater protection policy for Scotland Version 3* [Online] Available at: https://www.sepa.org.uk/media/60033/policy-19_groundwaternov09.pdf (Accessed: 15/06/2020)

⁵ SEPA (2017) *Land Use Planning System SEPA Guidance Note 4: Planning guidance on on-shore windfarm developments* [Online] Available at: <https://www.sepa.org.uk/media/136117/planning-guidance-on-on-shore-windfarms-developments.pdf> (Accessed: 11/06/2020)

⁶ CIRIA (2015) *Environmental good practice on site guide* (fourth edition) (C741)

⁷ NetRegs (2013) PPG1: Understanding your environmental responsibilities – good environmental practices [Online] Available at: <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> (Accessed: 08/06/2020)

⁸ Scottish Government (2001) Planning Advice Note 61: Planning and Sustainable Urban Drainage Systems [Online] Available at: <https://www2.gov.scot/Publications/2001/07/pan61> (Accessed: 15/06/2020)

- De-watering of excavations;
- Run-off from exposed ground and material stockpiles;
- Run-off from roads and haul routes and river crossings;
- Plant washings/ washing areas;
- Fuel and chemical storage/ refuelling areas; and
- Leaking/ vandalised equipment.

2.2 Schedule of Mitigation

Mitigation measures are incorporated into the EIA Report assessment of significance of effects for hydrology and hydrogeology. A summary of the mitigation measures proposed within the EIA Report Chapter, are outlined in Table 2.1.

Table 2.1: Schedule of Mitigation

Section of EIA Report	Receptor	Potential Effect	Mitigation specified
Construction Phase			
Section 12.6.1.1	Surface hydrology (watercourses)	Chemical pollution as a result of chemical handling and storage and onsite vehicle fuelling and maintenance.	Refer to Section 3.3. Chemical pollution prevention and appropriate measures for chemical storage outlined in Section 3.3.1.
	Hydrogeology (groundwater and near-surface water)	Pollution from concrete use and washout.	Details of mitigation of spillage incidents and best practice in the event of a spill outlined in Section 3.3.2. Mitigation relating to concrete use on site is provided in Section 3.3.3, and washing of vehicles on site, including concrete washout areas, detailed in Section 3.3.4. Concrete use in watercourse crossing design and construction is outlined in Section 3.4.2. It is suggested a surface water quality monitoring programme is conducted as good practice, in accordance with Section 3.7.
Section 12.6.1.2	Surface hydrology (watercourses)	Erosion and Sedimentation as a result of excavation works and track construction and upgrades.	Refer to Section 3.2. Any works to be conducted within or near watercourse refer to Section 3.4. including appropriate measures for construction of watercourse crossings and culverts to prevent erosion of stream beds.
	Hydrogeology (groundwater and near-surface water)		
Section 12.6.1.3	Surface hydrology (watercourses)	Impediments to surface water flows as a result of installation of watercourse crossings.	Watercourse crossing construction and culverting best practice guidance outlined in Section 3.4.2 and 3.4.3. Any works to be conducted within or near watercourse refer to Section 3.4. It is suggested a surface water quality monitoring programme is conducted as good practice, in accordance with Section 3.7.

Section of EIA Report	Receptor	Potential Effect	Mitigation specified
	Hydrogeology (groundwater and near-surface water)	Diversion of near-surface flow as a result of track construction and the installation of turbine foundations / hardstanding.	Details of appropriate site drainage to maintain continuity of surface and near-surface flows is detailed in Section 3.1. Any dewatering works required for installation of turbine foundations will be conducted in line with guidance in Section 3.4.4. Details relating to protection of GWDTE in Section 3.5.
Section 12.6.1.4	Surface hydrology (watercourses)	Increase in volume of run-off and potential flood risk as a result of increased hardstanding.	Site drainage measures and Sustainable Drainage Systems (SuDS) to prevent an increase in flood risk and to maintain natural site drainage as much as possible, are detailed in Section 3.1.
Section 12.6.1.5	Groundwater Dependent Terrestrial Ecosystems (GWDTE)	Pollution as a result of track construction and uncontained spills from chemical handling / storage. Drying out or changes to groundwater interflow patterns as a result of construction.	Specific measures relating to the protection of GWDTE are provided in Section 3.5. Measures relating to chemical pollution, sedimentation and site drainage should all be considered as part of GWDTE protection.
Section 12.6.1.6	Private water supplies (PWS)	Pollution as a result of track upgrades and uncontained spills from vehicles, and chemical handling/ storage. Drying out or changes to quantity as a result of upgrades to access track.	Specific measures relating to the protection of water supplies and groundwater abstractions are provided in Section 3.6. Monitoring of PWS water quality, if required, would be incorporated into a water quality monitoring programme as outlined in Section 3.7. Measures relating to chemical pollution, sedimentation and site drainage should all be considered as part of PWS protection.

2.3 Regulation and Authorisation

All construction and engineering activities within or hydrologically connected to the water environment require authorisation under Controlled Activities Regulations (CAR). There are three levels of authorisation and the level required is site-specific and based on the level of risk of the activity to the water environment. The levels of authorisation are:

1. General Binding Rules (GBR): low risk activities. All development activities must comply with these rules. No application to SEPA is required.
2. Registration: medium risk activities. Application to SEPA is required to register an activity.
3. Licence: high risk activity. Simple or complex licences exist depending on the activity. Application to SEPA is required to obtain a licence for the activity.

Further guidance on the requirement for authorisation are outlined in the following documents:

- CAR – A Practical Guide (Controlled Activities Regulations)⁹;
- Introduction to Controlled Activities Regulation¹⁰; and
- SEPA LUPS-GU-15: Planning guidance in relation to SEPA regulated sites and processes¹¹.

The requirements for authorisation of specific activities are outlined in the relevant sections of this document.

2.4 Environmental Clerk of Works (ECoW)

An Environmental (or Ecological) Clerk of Works (ECoW) will be appointed for the construction period (commencement of development to final commissioning or end of construction period). The ECoW will hold an advisory role. In relation to the water environment, the scope of the ECoW role will include:

- Monitoring compliance with the mitigation outlined in the EIA Report, CEMP and other relevant documentation relating to the planning condition and site licence, such as the Pollution Prevention Plan (PPP);
- Routine monitoring of water pollution prevention measures, such as silt management measures, and inspection following storm events; and
- Routine visual inspection and observation of watercourses for the presence of silt, discolouration and hydrocarbons.

⁹ SEPA (2019) *The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) A Practical Guide* [Online] Available at: https://www.sepa.org.uk/media/34761/car_a_practical_guide.pdf (Accessed: 10/06/2020)

¹⁰ SEPA (n.d.) *Introduction to the Controlled Activities Regulations* [Online] Available at: <https://www.sepa.org.uk/media/34800/introduction-to-the-controlled-activities-regulations.pdf> (Accessed: 10/06/2020)

¹¹ SEPA (2013) *Land Use Planning System SEPA Guidance Note 15: Planning Guidance in Relation to SEPA Regulated Sites and Processes (LUPS-GU15)* [Online] Available at: <https://www.sepa.org.uk/media/136091/planning-guidance-in-relation-to-sepa-regulated-sites-and-processes.pdf> (Accessed: 12/06/2020)

3 OUTLINE MITIGATION FOR THE WATER ENVIRONMENT

3.1 Site Drainage

Drainage from the site will include elements of Sustainable Drainage Systems (SuDS) design, where appropriate. SuDS is a method of controlling surface water run-off in a manner that replicates natural drainage patterns and has a number of benefits, including:

- SuDS will attenuate run-off, thus reducing peak flow and any flooding issues that might arise downstream;
- SuDS will treat run-off to a certain degree, 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.

The following best practice guidance should be used:

- CIRIA C648 – Control of water pollution from linear construction projects¹²;
- CIRIA C352 – Control of water pollution from construction sites¹³;
- CIRIA SuDS Manual (C753)¹⁴;
- CIRIA Guidance on the construction of SuDS (C768)¹⁵; and
- SEPA WAT-RM-08 Regulatory Method: SuDS¹⁶;
- SEPA WAT-SG-75 Sector-specific Guidance – Construction Sites¹⁷; and
- Water Assessment and Drainage Guide (WADAG)¹⁸;
- GPP5: Works and maintenance in or near water¹⁹; and
- GPP4: Treatment and disposal of wastewater where there is no connection to the public foul sewer.

3.1.1 Authorisation

SuDS are a legal requirement for all developments draining to the water environment (other than a single dwelling or discharges to coastal water). All developments must comply with all conditions of the CAR Regulations General Binding Rules (GBR) including the requirement for SuDS.

Developments require authorisation for surface water run-off discharges under CAR regulations by a SEPA licence (Construction SuDS licence) for construction sites which:

- Exceed 4 ha area;
- Contain a road or track length in excess of 5 km; and/ or
- Include any area with a slope gradient of more than 250 m over 1 ha or 500 m length.

¹² CIRIA (2006) *C648: Control of water pollution from linear construction projects: Technical Guidance* [Online] Available at: <https://www.ciria.org/Search?SearchTerms=c648> (Accessed: 09/06/2020)

¹³ CIRIA (2001) *C532: Control of water pollution from construction sites: Guidance for consultants and contractors* [Online] Available at: <https://www.ciria.org/ProductExcerpts/C532.aspx> (Accessed: 09/06/2020)

¹⁴ CIRIA (2015) *C753: The SuDS Manual*

¹⁵ CIRIA (2017) *C768: Guidance on the construction of SuDS*

¹⁶ SEPA (2019) *WAT-RM-08: Regulatory Method Sustainable Drainage Systems (SUDS or SUD Systems) v6.4* [Online] Available at: <https://www.sepa.org.uk/regulations/water/pollution-control/pollution-control-guidance/> (Accessed: 10/06/2020)

¹⁷ SEPA (2018) *WAT-SG-75 Supporting Guidance Sector Specific Guidance: Construction Sites* [Online] Available at: <https://www.sepa.org.uk/media/340359/wat-sg-75.pdf> (Accessed: 10/06/2020)

¹⁸ SUDSWP (n.d.) *Water Assessment and Drainage Assessment Guide* [Online] Available at: https://www.sepa.org.uk/media/163472/water_assessment_and_drainage_assessment_guide.pdf (Accessed: 10/06/2020)

¹⁹ NetRegs (2017) *GPP5: Works and maintenance in or near water* [Online] Available at: <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> (Accessed: 10/06/2020)

If the development is below the threshold criteria, a licence is not required and the development can be authorised under GBR10 and no direct consultation with SEPA is required.

SEPA WAT-RM-08 Regulatory Method: SuDS provides further details on the licence requirements.

3.1.2 Pre-Earthworks Drainage

Pre-earthworks drainage relates to the required drainage measures to be installed prior to earthwork activities such as access track construction and borrow pit workings.

Best practice pre-earthworks drainage measures include:

- Cut-off/ diversion ditches;
- Temporary interception bunds;
- Swales; and
- Retention ponds.

Purpose/ Aim

The aim of pre-earthworks drainage is to:

- Divert 'clean' surface water run-off and stormwater away from exposed soils of earthworks preventing further erosion; and
- Prevent 'clean' water from mixing with potentially silt-laden water generated from construction works.

Installation

Pre-earthwork drainage should be installed immediately prior to earthworks and construction works commencing.

Temporary interception bunds and cut-off drainage ditches ('clean water drains') will be constructed on the 'high-side' boundary of the earthwork operations to prevent surface water run-off entering excavations. Run-off collected in the drainage ditches will be diverted along a channel which follows the natural gradient of the ground, avoiding steep gradients.

The profile of the ditch can vary from a 'v' shape to a 'u' shape but should have a constant uniform depth. The profile of the ditch will depend on the soil type and stability.

The use of 'u'-shaped vegetated ditches is preferential, these are also known as swales. The dimensions and gradient of swales will be kept to a minimum to prevent rapid flow of water. Swales to collect runoff will be placed on the downslope of earthworks and stockpiles and will be designed to treat potentially silty runoff before discharging back into the drainage system. This may include constructing check dams within the channel and employing silt management measures. The use of retention ponds allows for additional storage capacity during heavier rainfall events.

Reinstatement

All pre-earthworks drainage channels should be re-instated unless required for long-term drainage on the site. No exposed soils should remain, and turves should be emplaced to prevent erosion.

Where exposed soil is to be left for a long period before reinstatement or re-seeding, other measure to prevent erosion may be required:

- Geotextiles (biodegradable and non-biodegradable);
- Mulching/ binders/ hydro-seeding;
- Turf cut from other areas on site; and
- Surface roughening.

3.1.3 Earthworks Drainage

Drainage for permanent or semi-permanent earthworks such as access tracks is required to control surface water run-off and discharge to appropriate outlets.

Best practice pre-earthworks drainage measures include:

- Drainage ditches;
- Sumps; and
- Culverts.

Purpose/ Aim

To manage surface water run-off from earthworks e.g. access tracks, and manage and allow for continuity of the natural drainage of surface water and groundwater from higher elevations to lower.

Pre-installation

Prior to access track and earthwork 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.

Floating roads are used within the design. Further details of good practice with regards to drainage for floating roads is provided in Floating Roads on Peat²⁰ good practice guidance document.

Installation

All earthworks will have a gravity drainage system and all water will drain to an adequately sized sump. If dewatering of borrow pits or excavations is necessary, waste water will be treated by designed settlement lagoons and retention ponds, further details are provided in Section 3.2.5.

Trackside drainage ditches are to be constructed parallel to the access tracks and follow the same gradient as the access tracks. To allow for continuity of surface and ground water flow from the high-side of the track to low-side, culverts are required to be built crossing the track at appropriate intervals, as shown in Plate 3.1. Culverts should be built to peak river flow plus a climate change allowance of 37 % in accordance with SEPA climate change allowances for flood risk guidance²¹. Further details of culvert design are provided in Section 3.4.3.

²⁰ SNH and Forestry Civil Engineering (2010) *Floating Roads on Peat: A Report into Good Practice Design, Construction and Use of Floating Roads on Peat with particular reference to Wind Farm Developments in Scotland* [Online] Available at: <http://www.roadex.org/wp-content/uploads/2014/01/FCE-SNH-Floating-Roads-on-Peat-report.pdf> (Accessed: 10/06/2020)

²¹ SEPA (2019) *Land Use Planning System SEPA Guidance: Climate change allowances for flood risk assessment in land use planning* (LUPS-CC1).

Plate 3.1: Trackside drainage ditch and cross-drainage culvert



Permanent check dams can also be installed to slow the flow of water in ditches with steeper gradients and straightened channels to prevent erosion of channels and at outlets. Water within channels should be allowed to flow and should not be stagnant, and tracks should be free from standing water through inclusion of camber or cross-fall. Track surface cross-drains can be installed on tracks with long gradients and limited camber, and should be kept free of sediment.

Sustainable drainage systems such as swales with vegetated channels are preferential and will be designed to intercept, filtrate and convey 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.

Settlement lagoons should be installed at drainage ditch outlets, prior to discharge to watercourse. They should be constructed to allow for adequate attenuation of water and settlement of sediments. Silt mats may be used at the outfalls of settlement lagoons and retention ponds to further aid the settlement of sediment from earthworks drainage. Further details on sediment management are provided in Section 3.2.

The use of retention ponds should be used to allow for additional storage capacity during heavier rainfall and storm events.

3.1.4 Management of Drainage from Surplus and Loose Materials

Careful consideration will be given to the location of topsoil and subsoil storage areas for all areas of the Development during 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.

The use of peat and soil stockpiles will be minimised by earthworks planning. However, where stockpiles are used, silt fences and silt 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.

An example of a stockpile/ overburden and the installation of drainage ditch to divert run-off from the stockpile material is shown in Plate 3.2.

Plate 3.2: Stockpile and drainage ditch (under construction)



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. Mineral and peat soil stockpiles will not be allowed to dry out.

Loose materials such as crushed rock and stone will be prevented from entering watercourses through the employment of sediment pollution prevention measures in areas of loose material storage or generation, as outlined in Section 3.2.

3.1.5 Discharge of Water

Discharge of water from the site will depend on the water environment on site and the quality of the final discharge. This section considers the discharge of surface water drainage to the water environment and does not consider foul drainage from substation and temporary construction compound welfare facilities.

3.1.5.1 Discharge to Sewer

Discharge to foul sewer require permission from Scottish Water. Scottish Waters starting position is that no new surface water connections to combined/ foul sewer will be accepted.

Scottish Water prefer that surface water is re-used on site where practicable, drained into a SuDS system, drained to ground through soakaway or to an existing watercourse and notes that pumping of water to one of these outlets may be required.

Where it is not practicable to discharge to SuDS, ground or watercourse, surface water may be drained to a combined/ surface water sewer and requires enquiry and an application to Scottish Water.

Further details are provided in Scottish Water Surface Water Policy advice note and guidance²² and GPP4.

3.1.5.2 Soakaway

Water contaminated with fine silt only can be discharged to vegetated surfaces and required permission from SEPA and landowner.

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.

Details on typical infiltration rates of soil types are provided in GPP5.

3.1.5.3 Drain to watercourse or SuDS system

Treated water can be discharged to watercourse, loch or SuDS systems. The discharge water must be in line with the baseline water quality and flood risk capacity of the receiving water.

Methods of on-site sediment and chemical pollution prevention and water treatment are outlined in Section 3.2.

Authorisation from SEPA is required for discharge of water from the Development to the water environment.

3.1.5.4 Tanker off site

Water which cannot be treated on site and is not of a quality which can be released to water environment, will need to be tankered off site for appropriate treatment and disposal.

3.1.6 Provision for Storm Events

The site itself is not 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 a maximum of approximately 0.42 % (River E – upper catchment).

In the baseline scenario, the water table is not at the ground surface, and hence some infiltration would be expected. Measures are proposed in this document that would limit run-off rates in Section 3.2.

Temporary storage volume for storm run-off from the turbine foundations and crane hardstanding areas would be provided via settlement lagoons, further details of which are provided in Section 3.2.5.

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

²² Scottish Water (2018) Surface Water Policy: Standard advice note and process guidance [Online] Available at: <https://www.scottishwater.co.uk/help-and-resources/document-hub/business-and-developers/connecting-to-our-network> (Accessed: 10/06/2020)

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.

3.2 Sediment Pollution Prevention

Sediment pollution and release of excess sediments can result in detrimental effects to fish spawning habitats by covering the stream bed. Mitigation measures should minimise mobilisation and release of sediments to the water environment. Water polluted by sediments are not allowed to leave the site untreated and the final discharge from the site must have acceptable levels of sediment (in line with baseline levels).

Major construction works will be minimised during heavy precipitation events.

Sediment pollution prevention is to be employed in line with the following best practice guidance:

- SEPA WAT-SG-26: Good Practice Guide – Sediment Management²³;
- SEPA WAT-SG-78 Sediment Management Authorisation²⁴; and
- CIRIA C648 – Control of water pollution from linear construction projects²⁵;
- CIRIA C352 – Control of water pollution from construction sites²⁶; and
- GPP5: Works and maintenance in or near water²⁷;

Best practice methods of sediment management and pollution prevention, and required authorisation are outlined in the following sections.

3.2.1 Authorisation

Under CAR Regulations authorisation is required for all sediment management works within inland surface water and surface water dependent wetlands.

The levels of authorisation are GBR, Registration or Licence and the required level is based on the environmental risk at the Site. More details are provided in SEPA guidance documents WAT-SG-78 Sediment Management Authorisation and WAT-RM-02 Regulation of Licence level Engineering Activities²⁸.

3.2.2 Silt Traps and Silt Matting

Purpose

Silt traps may be utilised to trap, temporarily store and filter sediment-laden run-off from excavation works at the Development, including turbine bases and access roads. This is to prevent discharge of silt-laden waters to watercourses or ground.

²³ SEPA (2010) *WAT-SG-26: Engineering in the water environment: good practice guide – Sediment management* [Online] Available at: <https://www.sepa.org.uk/media/151049/wat-sg-26.pdf> (Accessed: 09/06/2020)

²⁴ SEPA (2012) *Supporting Guidance (WAT-SG-78) Sediment Management Authorisation v1* [Online] Available at: <https://www.sepa.org.uk/media/151062/wat-sg-78.pdf> (Accessed: 09/06/2020)

²⁵ CIRIA (2006) *C648: Control of water pollution from linear construction projects: Technical Guidance* [Online] Available at: <https://www.ciria.org/Search?SearchTerms=c648> (Accessed: 09/06/2020)

²⁶ CIRIA (2001) *C532: Control of water pollution from construction sites: Guidance for consultants and contractors* [Online] Available at: <https://www.ciria.org/ProductExcerpts/C532.aspx> (Accessed: 09/06/2020)

²⁷ NetRegs (2017) *GPP5: Works and maintenance in or near water* [Online] Available at: <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> (Accessed: 10/06/2020)

²⁸ SEPA (2019) *WAT-RM-02 Regulation of Licence Level Engineering Activities* [Online] Available at: https://www.sepa.org.uk/media/150958/wat_rm_02.pdf (Accessed: 10/06/2020)

Installation

Silt traps and matting have a limited effective flow capacity and must be installed with the built to peak river flow plus a climate change allowance of 37% increase capacity in consideration.

Silt traps and matting are to be installed at the following locations:

- Within drainage ditches but will be sited to avoid slopes with a gradient greater than 1 in 20;
- At the inlet (sump) or outlet side of culverts; and
- At the outfall of settlement lagoons to filter sediment during times of heavy rainfall as shown in Plate 3.3.

Plate 3.3: Silt matting (combined with silt fencing)



Maintenance

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

3.2.3 Silt Fencing

Purpose

Silt fencing is a widely used form of silt trapping and provides a linear barrier for installation upstream of watercourses and lochs. Silt fences are cost-effective and practical methods of attenuating storm water run-off and intercepting sediment and silt.

Installation

Silt fences are a semi-permeable geotextile fabric arranged in the form of a fence (attached to timber posts) as shown in Plate 3.4.

Silt fences are to be used as perimeter controls on the site at the downslope end of earthworks or disturbed soils, and at watercourse crossings as shown in Plate 3.5. They should be used in conjunction with other sediment and water treatment solutions where required.

To comply with best practice, they should be installed as follows:

- Installed perpendicular to the gradient of the slope;

- Construct a trench on the up-gradient side;
- Install stakes on the down-gradient side; and
- Position with a curve to the end of the fence in the up-gradient direction to help capture surface run-off, as shown in Plate 3.3.

Silt fences should not be installed:

- Within drainage ditches or channels; and / or
- Running parallel to the direction of slope.

Plate 3.4: Typical silt fencing



Plate 3.5: Silt fencing at watercourse crossing



Maintenance

Silt fencing will be monitored by the Ecological Clerk of Works (ECoW) and should be cleared regularly of sediment and silt build-up, and after heavy rainfall and storm events. Silt fencing will should be replaced when necessary.

3.2.4 Check Dams

Purpose

Check dams will facilitate the settlement of suspended solids by slowing the flow of water within the drainage ditches. An example of a typical check dam is shown in Plate 3.6.

Installation

Check dams will be installed within drainage ditches at regular intervals, where appropriate. 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 3.6: Check dam example



3.2.5 Settlement Lagoons

Purpose

Retention of contaminated water to allow for the settlement of silt and sediments to an acceptable level (in line with the baseline level) prior to discharge to the water environment.

Installation

Settlement lagoons will be implemented where appropriate across the Site and at all turbine excavations (where appropriate).

Settlement lagoons should be installed so as to retain water long enough for silt to settle out. The length of time required will depend on the type of silt with finer silts and clays taking longer to settle.

Further measures may include the use of flocculent to further facilitate the settlement of suspended solids. The appropriateness of flocculent use must be discussed with SEPA prior to its introduction into settlement lagoons. Flocculants can be pollutants if the incorrect dosage is used. Further guidance on the required dimension of settlement lagoon are provided in GPP5.

To comply with best practice, they should be installed as follows:

- Install energy dissipation methods (e.g. rip-rap) at the inlet to minimise flow;
- Install inlet pipe work vertically to dissipate energy of flow in;
- Install a lined inlet chamber and outlet weir with materials such as geotextiles;
- Install a long outlet weir;
- Install two or three lagoons in a series to increase silt retention and storage as shown in Plate 3.7.

Plate 3.7: Settlement lagoon series



Maintenance and Operation

Settlement lagoons should be inspected regularly by the ECoW to ascertain the functionality of the system. To comply with best practice, the following maintenance measures are to be conducted:

- All settlement lagoons will be actively managed to control water levels and ensure that any run-off is contained, especially during times of rainfall;
- A constant pumped inlet rate should be maintained;
- Inlet chamber should be emptied of silt regularly; and
- Discharge quality to be monitored frequently.

Settlement lagoon outflow discharge may be pumped, when required, for maintenance purposes. A 'siltbuster' is a method of pumping excess silt-laden water and treated prior to discharge, as shown in Plate 3.8.

Plate 3.8: Settlement lagoon and Siltbuster pumping out water for treatment



Any pumping activities will be supervised and authorised by the Infrastructure Contractor's Project Manager.

Methods for discharge of outflow water from a settlement lagoon are detailed in the following section.

3.3 Chemical Pollution Prevention

Pollution from fuels and other chemicals can cause a variety of detrimental effects to freshwater ecology and can lead to loss of aquatic flora and fauna. Cement pollution and concrete wash-out can lead to increases in alkalinity and raise the pH of watercourses, which can be toxic to aquatic flora and fauna.

Chemical pollution prevention is to be employed on site in line with best practice guidance, including the following:

- SEPA Groundwater protection policy for Scotland (Section F);
- SEPA WAT-SG-31: Special Requirements for Civil Engineering Contracts for the Prevention of Pollution²⁹;
- SEPA WAT-SG-32: SEPA Guidance on the Special Requirements for Civil Engineering Contracts³⁰;
- CIRIA Control of Water Pollution from Construction Sites (C532)³¹;
- GPP5: Works and maintenance in or near water³²;

²⁹ SEPA (2006) *WAT-SG-31: Prevention of pollution from Civil Engineering Contracts: Special Requirements Version 2* [Online] Available at: https://www.sepa.org.uk/media/152220/wat_sg_31.pdf (Accessed: 09/06/2020).

³⁰ SEPA (2006) *WAT-SG-32: Prevention of pollution from Civil Engineering Contracts: Guidelines for the Special Requirements Version 2* [Online] Available at: https://www.sepa.org.uk/media/152233/wat_sg_32.pdf (Accessed: 09/06/2020)

³¹ CIRIA (2001) *C532: Control of water pollution from construction sites – Guidance for consultants and contractors*

³² NetRegs (2017) *GPP5: Works and maintenance in or near water* [Online] Available at: <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-pgps-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> (Accessed: 10/06/2020)

- GPP8: Safe storage and disposal of used oils³³;
- GPP13: Vehicle washing and cleaning³⁴;
- PPG18: Managing fire water and major spillages³⁵;
- GPP21: Pollution incident response planning³⁶;
- GPP22: Dealing with spills³⁷; and
- GPP26: Safe storage – drums and intermediate bulk containers³⁸.

To reduce the potential for a chemical pollution incident, areas of high-risk activities are to be located away from watercourses and drainage paths. Areas of high risk include:

- Fuel and chemical storage;
- Refuelling areas;
- Material stockpiles;
- Vehicle and equipment washing areas; and
- Site compounds/parking areas.

3.3.1 Storage of Chemicals and Oil

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.

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

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.

The following measures should be employed under best practice guidance for storage of chemicals and oils:

- Storage tanks (above or below ground) should be of sufficient strength and structural integrity to hold without leak or burst and bunded in accordance with SEPA guidance, and double-skinned tanks should be used for list I substances³⁹;
- Storage containers should have a minimum design life of 20 years;
- All storage containers are closed and locked when not in use.

³³ NetRegs (2017) *GPP8: Safe storage and disposal of used oils* [Online] Available at:

<https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> (Accessed: 10/06/2020)

³⁴ NetRegs (2017) *GPP13: Vehicle washing and cleaning* [Online] Available at: <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> (Accessed: 12/06/2020)

³⁵ NetRegs (2000) *PPG18: Managing water and major spillages* [Online] Available at: <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> (Accessed: 12/06/2020)

³⁶ NetRegs (2017) *GPP21: Pollution Incident Response Planning* [Online] Available at: <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> (Accessed: 12/06/2020)

³⁷ NetRegs (2017) *GPP22: Dealing with spills* [Online] Available at: <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> (Accessed: 12/06/2020)

³⁸ NetRegs (2017) *GPP26: Safe Storage – drums and immediate bulk containers* [Online] Available at: <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> (Accessed: 12/06/2020)

³⁹ https://www.sepa.org.uk/media/59968/policy_61-control-of-priority-and-dangerous-substances-and-specific-pollutants-in-the-water-environment.pdf

Chemical storage areas are to be removed from Site as part of decommissioning, any remnant in-situ storage facilities must be appropriately maintained and monitored for degradation and release of oils or chemicals.

3.3.2 Spillage of Chemicals and Oil

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 capacity of 110 % of the stored liquid containers (including fresh concrete). This will reduce the potential for accidental spillages to contaminate surface water or groundwater.

Best practice guidance on the prevention of spillages of chemical outlines the following measures:

- Areas where transfer and handling of chemicals is to occur should have impermeable surface;
- Drainage systems onsite should be designed to enable the containment of spillages and appropriate disposal and treatment; and
- Emergency procedures are implemented for a spillage incident and leak detection measures (if appropriate);
- Regular maintenance and inspection of chemical storage facilities to be conducted (may be carried out by onsite ECoW); and
- Provision and training in the use of spill kits, as outlined below.

An appropriately sized spill kit(s) will be provided, maintained and located at strategic points across the site, as shown in Plate 3.9. 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 be deployed, as necessary, should a spillage occur elsewhere within the construction compound.

Plate 3.9: Spill kit provision on site



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.

All maintenance and operation of machinery, and use of chemicals and oils on site, 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.

Regular vehicle and machinery maintenance will be conducted to ensure that there is minimal potential for fuel or oil leaks / spillages to occur.

Plate 3.10 and Plate 3.11: Drip trays and bunds show examples of drip trays and bunds.

Plate 3.10 and Plate 3.11: Drip trays and bunds to prevent chemical spillages



3.3.3 Concrete, Cement and Grout

Concrete, cement and grouts which are batched and transported on site will be subject to the same requirements as outlined in Section 3.3.1.

To comply with best practice, concrete, cement and grout mixing and washing areas should:

- Be sited in an impermeable hardstanding or geotextile within a designated area;
- Be sited at least 10 m from any watercourse or surface water drain, rock outcrop or sinkhole;
- Install settlement and re-circulation systems for water re-use in the batching process to minimise water use, treatment requirements and risk of pollution;
- Designated and contained washing areas for batching plant and vehicles (further details of vehicle washing provided in Section 3.3.4);
- Collect contaminated wash waters which cannot be reused and discharge to foul sewer or tanker off-site (further details of discharge of water is provided in Section 3.1.5). Contaminated water should never be released to the water environment.

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 3.12.

Plate 3.12: Shuttering for concrete foundation (wind turbine base)



3.3.4 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 3.13 displays a typical concrete wash-out facility.

Plate 3.13: Concrete wash-out 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 plant 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 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. An example of a dry-ramp wheel wash facility is shown in Plate 3.14.

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. All HGVs taking construction materials to and from the site will be sheeted to prevent the spillage or deposit of material on the highway.

Plate 3.14: Vehicle wheel wash facility



3.4 Activities in the Water Environment

Temporary activities related to construction phase works within the water environment include construction of temporary and permanent watercourse crossings,

3.4.1 Authorisation

Engineering activities within the water environment, including construction of watercourse crossings, culverting, diversions and dewatering requires authorisation under the Controlled Activities Regulations (CAR).

The level of authorisation required will be confirmed by the Contractor prior to the construction phase.

3.4.2 Watercourse Crossings

The crossing of watercourses is to be avoided in the design where possible. Existing culverts and watercourse crossings, if any, may be upgraded and anticipated to be replaced with suitable pre-cast culvert designs.

Where required to be installed, watercourse crossings should be designed in order to minimise effects of developments on the natural integrity and continuity of watercourses. The following best practice guidance should be used:

- Forest and Water Guidelines⁴⁰;
- SEPA WAT-SG-25 River Crossing – Good Practice Guide⁴¹;
- SEPA WAT-PS-06-02: Culverting watercourses⁴²; and

⁴⁰ Forestry Commission (2011) *Forest and Water Guidelines, 5th Edition*, Forestry Commission [Online] Available at: <https://www.confor.org.uk/media/246145/forest-and-water-guidelines.pdf> (Accessed: 09/06/2020).

⁴¹ SEPA (2010) *WAT-SG-25 Engineering in the water environment: good practice guide. River Crossings*. [Online] Available at: <https://www.sepa.org.uk/media/151036/wat-sg-25.pdf> (Accessed: 09/06/2020).

⁴² SEPA (2015) *WAT-PS-06-02: Culverting of Water courses - Position Statement and Supporting Guidance* [online] Available at: https://www.sepa.org.uk/media/150919/wat_ps_06_02.pdf (Accessed: 09/06/2020).

- CIRIA C689: Culvert design and operation guide⁴³.

Pre-installation

Identification of ecological requirements and limiting factors (e.g. breeding birds and fish spawning) should be conducted prior to installation of a watercourse crossing. The ECoW should be consulted before watercourse crossing construction can commence.

The hydraulic capacity of the crossing is to be assessed and constructed for flows up to the 1:200 year event. Further information on the hydraulic capacity of a watercourse crossing or culvert is outlined in SEPA River Crossing – Good Practice Guide.

Watercourse crossings should not be installed in 'active' areas of a watercourse e.g. meandering bends and depositional areas.

Consideration should be given to the type of watercourse crossing acknowledging that hard engineering structures, such as concrete culverts, can make it more difficult to restore a site or decommission temporary structures e.g. access tracks. Single span bridges or bridges with an in-stream support should be used for large watercourse crossings and culverts for smaller scale crossings. Further details on the type of culvert to use is provided in Section 3.4.3.

Installation

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. Watercourse crossings will be installed perpendicular to the direction of flow.

In total eight new watercourse crossings are required for the Development. It is anticipated the following type of watercourse crossings are to be installed on site:

- Ready-made concrete 'box style' or bottomless arched concrete or plastic culverts.

However, in accordance with best practice guidance, each watercourse crossing shall be designed on a case by case basis to be appropriate for the width of watercourse being crossed, and the prevailing ecological and hydrological situation (i.e. the sensitivity of the watercourse). A number of factors, both environmental and engineering will influence the selection of structure type and the design of the crossing.

All watercourse crossings should be installed in line with SEPA WAT-SG-25 River Crossing good practice guide. General good practice in watercourse crossing design and construction will ensure that site conditions are taken into account and the objectives of the CAR are achieved. These include:

- The use of appropriate structures to carry access tracks across watercourses taking into account the scale of the watercourse, ecological value, sensitivity to construction activities, topography and construction methodology;
- There is a preference to avoid construction in watercourses altogether through the use of arch culverts appropriately designed not to impede the flow of water and allow safe passage for wildlife, such as fish, water voles, otters etc. However, short- and long-term impact of designs should be considered, and there can be a case for using pipe or box culverts;
- When installing culverts, care will be taken to ensure that the construction does not pose a permanent obstruction to migrating species of fish, or riparian mammals (i.e. the crossings will make provision for fish and wildlife migration);

⁴³ CIRIA (2010) *C689: Culvert design and operation guide* [Online] Available at: https://www.ciria.org/Resources/Free_publications/C689.aspx?WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91 (Accessed: 10/06/2020)

- Culverts should be sized so that they do not interfere with the bed of the stream post construction, (i.e. the crossings will leave the watercourse in as natural condition as possible or permit re-establishment of substrate post construction);
- Single culverts will be used in preference to a series of smaller culverts that may be more likely to become blocked with flotsam and create erosion (i.e. the crossings will not constrict the channel);
- Although no fish have been recorded within the tributaries running through the Site, if any fish are found during the construction of any culverts, they will be removed from the immediate construction site to a place of safety if deemed necessary after consultation with the relevant fisheries interest;
- To minimise impacts on the breeding of any fish found, any in-stream works in these areas will be conducted during months which have less impact on their breeding and development, where possible;
- Ease and speed of construction are important to minimise disruption to the watercourse and surrounding habitat;
- Culverts and headwalls should be designed to last the operational life of the Development; and
- Designs should be low maintenance and where possible self-cleansing; and
- Structures should be visually in keeping with the surroundings.

Maintenance

Erosion to the bed and banks at a watercourse crossing as a result of scouring during high rainfall and storm events. Erosion can expose span structure foundations and/ or cause a drop forming at the outlet of the watercourse crossing.

If this occurs, the inclusion of erosion protection measures may be required, such as baffles. The crossing should be reinstated and reinforced to allow for scour during higher flows. The crossing should be reinstated to allow for fish passage and continuity of the watercourse bed. If this is not possible, inclusion of a fish pass may be required.

If maintenance works are required within the watercourse bed then isolation of the watercourse is required and authorisation from SEPA may be required.

Culverts are prone to blockage by debris and may require routine clearing.

3.4.3 Culverts

Culverts are used to create artificial channels and allow for the continuity of water drainage and balance upstream and downstream of infrastructure associated with the Development e.g. access tracks.

Closed culverts for river crossings would only be justified for single track roads over small watercourses (<2 m wide). Closed culverts are sufficient for cross-drainage under an onsite access track, as outlined in Section 3.1.3.

Bottomless arch culverts and box culverts should be used for all culverts over watercourses of 2 m or greater in width.

Culverts will be installed and designed in line with best practice guidance, including CIRIA C689, and 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;
- The culvert must not exacerbate or create flooding;
- 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.
- A natural stone headwall will be provided upstream and downstream of culverts to protect the road embankment. Further protection will be provided to the banks using soft engineering techniques as much as possible.
- Where there is risk of bed erosion upstream or downstream of culverts, natural stone rip-rap will be provided.

3.4.4 Dewatering

Dewatering may be required for excavations, construction of foundations or borrow pits. Dewatering is regulated under CAR GBR15 if less than 10m³ per day.

Dewatering should be employed in line with the following best practice guidance:

- SEPA WAT-SG-29: Temporary Construction Methods;
- SEPA Good Practice Guide WAT-SG-28: Intakes and Outfalls⁴⁴; and
- SEPA Regulatory Method WAT-RM-11: Licensing Groundwater Abstractions including Dewatering⁴⁵.

If the dewatering volume is greater than 10m³/ day, a CAR licence is required and SEPA WAT-RM-11 is to be referred to. Discharge of water as a result of dewatering must not cause further erosion and energy dissipation measures should be put in place as outlined in SEPA WAT-SG-28 guidance.

Dewatering must consider the impact on other groundwater abstractions and groundwater dependent terrestrial ecosystems (GWDTE). Further information on the protection of GWDTE and groundwater abstractions are provided in Section 3.5 and 3.6.

3.5 Measures to Protect Groundwater Dependent Terrestrial Ecosystems (GWDTE)

Foundations, borrow pits and linear infrastructure such as roads, tracks and trenches can disrupt groundwater flow. If carried out in close proximity to GWDTE, construction activities can have adverse effects on these receptors.

Measures to protect GWDTE are based on mitigation and good practice, similar to those outlined already in this document, as well as avoidance of GWDTE habitats during design. The following guidance document(s) are used to inform protection of GWDTE habitats:

- SEPA LUPS-GU-31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems⁴⁶.

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

Key measures include:

⁴⁴ SEPA (2019) *WAT-SG-28: Engineering in the Water Environment Good Practice Guide: Intakes and outfalls Second Edition* [Online] Available at: https://www.sepa.org.uk/media/150984/wat_sg_28.pdf (Accessed: 12/06/2020)

⁴⁵ SEPA (2017) *WAT-RM-11: Regulatory Method: Licensing Groundwater Abstractions including Dewatering* [Online] Available at: <https://www.sepa.org.uk/media/151997/wat-rm-11.pdf> (Accessed: 12/06/2020)

⁴⁶ SEPA (2017) Land Use Planning System SEPA Guidance Note 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems (LUPS-GU-31) [Online] Available at: <https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf> (Accessed: 12/06/2020)

- Silt traps may be deployed to trap and filter sediment-laden run-off throughout the 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 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.

3.6 Measures to Protect Groundwater Abstractions and Private Water Supplies

A watching brief will be undertaken during the access track upgrade to ensure any pipework is identified and protected.

3.7 Water Quality Monitoring Programme

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

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 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 with SEPA in advance of construction.

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

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

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

- Once a month during construction works; and

- Twice a month for three months then once a month for a further 3 months during the post 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.



CORRIEGARTH 2 WIND FARM

TECHNICAL APPENDIX 12.2

PRIVATE WATER SUPPLIES RISK ASSESSMENT

SEPTEMBER 2020



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A12 APPENDIX 12.2: PRIVATE WATER SUPPLY RISK ASSESSMENT

A12.1 INTRODUCTION

This appendix provides a risk assessment of private water supplies (PWS) identified within the hydrologically connected catchments of the Corriegarth 2 Wind Farm ('the Development').

This Appendix supplements **Chapter 12: Hydrology and Hydrogeology** of the Corriegarth 2 Wind Farm Environmental Impact Assessment ('the EIA Report'), and should be read in conjunction with the EIA Report. Chapter 12 of the EIA Report outlines the assessment of potential effects of the Development on the hydrological environment, including private water supplies.

Chapter 4: Project Description of the EIA Report sets out the proposed new infrastructure as part of the Development. The location of the Development and the PWS Study Area is provided in Figure 12.1 of the EIA report, and outlines of the hydrological catchment provided in Figure 12.2 of the EIA report.

The avoidance of effects on the water environment is built in to the design of the Development by avoiding construction in particularly wet areas and in proximity (50 metres (m)) to watercourses and by routing tracks so as to avoid the need for watercourse crossings, as far as practicable.

A suite of measures to protect and mitigate against impacts of the Development on the watercourse and groundwater has been built in to the Development construction and design, and is outlined in Chapter 12 of the EIA Report and in Appendix A12.2: Water and Construction Environmental Management Plan (WCEMP). The WCEMP has been developed in consultation with the Scottish Environment Protection Agency (SEPA), NatureScot (formally SNH) and Environmental Health Offices of Scottish Councils, and builds on best practice guidance. The mitigation measures outlined in the WCEMP are known to be effective in preventing effects on the quality and quantity of water in watercourses and groundwater, and the source waters and distribution systems (supply) of PWS.

This risk assessment will consider the potential risk to PWS following implementation of good practice construction mitigation measures outlined in the WCEMP.

This assessment also outlines any requirements for a private water supply monitoring programme, and suggested frequency of monitoring. Any implemented monitoring programme would be established in agreement with SEPA and the Local Authority prior to the construction phase of the Development. The monitoring programme will demonstrate the effectiveness of the mitigation and avoidance measures in eliminating effects on PWS and sources.

A12.2 METHODOLOGY

The Arcus methodology for PWSRA has been developed in conjunction with SEPA and reviewed by Scottish Councils. The Arcus methodology for PWS risk assessment (PWSRA) follows the approach outlined below:

- Identify private water supplies with potential to be affected by the Development;
- Identify the source of water feeding the water supply and its catchment;

- Identify infrastructure and activities in hydrological connectivity with water supply source, distribution infrastructure and supply;
- Identify the potential effect on the water supply i.e. whether construction of the Development has the potential to change the quality, quantity and/ or continuity of water at the receptor; and
- Determine whether the private water supply is at risk and determine appropriate mitigation to minimise or avoid the risk.

The methodology for identifying and risk assessing PWS consists of the following six stages:

- Identification of PWS through consultation with the Highland Council within 2 km of the Core Study Area;
- Resident or property owner consultation via letter to those properties supplied by a PWS;
- Desk-based study and hydrological assessment;
- Site-based survey of the PWS, including discussion with resident (where possible and required);
- Risk assessment; and
- Approval and review by statutory consultees.

A12.2.1 Legislation and Guidance

The procedure for identifying and risk assessing PWS is based on the following legislation and guidance:

- The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017 ('the Regulations')¹;
- The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017 - Guidance for Local Authorities (v4.0)²;
- Water Environment (Controlled Activities) (Scotland) Regulations 2011³; and
- SEPA Land Use Planning System Guidance Note 31 2017 v3.0 (LUPS-GU31)⁴.

The PWSRA will assess the risk for all PWS which are located within the following categories outlined by SEPA LUPS-GU31 guidance:

- Groundwater abstractions within 100 m radius of all excavations less than 1 m in depth; and
- Groundwater abstractions within 250 m of all excavations deeper than 1m.

A12.2.2 Survey Area

A Private Water Supply Study Area is defined as 2 km from the Site Boundary, with the aim of identifying all PWS within 2 km of the Development.

¹ UK Government (2017) The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017 [Online] <http://www.legislation.gov.uk/ssi/2017/282/contents/made> (Last accessed: 02/03/2020)

² DWQR (2019) The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017: Guidance for Local Authorities Ver 4.0 [Online] Available at: <https://dwqr.scot/media/42030/the-water-intended-for-human-consumption-private-supplies-scotland-regulations-2017-guidance-v4-feb-2019-as-issued.pdf> (Last accessed: 17/06/2020)

³ UK Government (2011) The Water Environment (Controlled Activities) (Scotland) Regulations 2011 [Online] Available at: <http://www.legislation.gov.uk/ssi/2011/209/contents/made> (Last accessed: 17/06/2020)

⁴ SEPA (2017) Land Use Planning System (LUPS) SEPA Guidance Note 31 v3.0 [Online] Available at: <https://www.sepa.org.uk/library/content-search/?q=LUPS-GU31&LibGo=Search&page=1> (Last accessed: 17/06/2020)

A12.2.3 Consultation

Consultation with the Council was conducted on 29th October 2019.

Consultation with residents and landowners of properties supplied by hydrologically connected PWS were contacted June 2020, and responses received on 11th June 2020. The consultation process involves provision of a questionnaire to residents to obtain further details on PWS. The questionnaire and reasoning behind the questions are outlined in Table 12.1.

Table 12.1: Resident Consultation Questionnaire and Reasoning

Question	Reasoning
Type of supply (with list of options)	Allows for identification of the likely PWS source water and provide an understanding of its potential connectivity to the Development, and developing a source-pathway-receptor model. This allows for an initial level of sensitivity to be applied to the PWS source as part of the final risk assessment.
Use of supply	Aids in developing the source-pathway-receptor model and conceptual site model. Also to attribute sensitivity for the final risk assessment. Also provides information on the likely volumes of water abstracted at the PWS.
Type of water treatment	Understanding of the baseline vulnerability of the source and existing protection measures in place.
Number of people supplied	Provides information on the likely volumes of water abstracted at the PWS. Also helps to attribute sensitivity for the final risk assessment. It is acknowledged that this number can vary, particularly if the PWS supplies a commercial property.
Number of livestock supplied	Provides information on the likely volumes of water abstracted at the PWS. Also to attribute sensitivity for the final risk assessment. It is acknowledged that this number can vary seasonally.
Volume of water abstracted (m³)	Allows for initial assessment on the catchment or 'zone of influence' of the water supply. This is the likely area the supply is draining water from. This informs an understanding of the PWS potential connectivity to the Development. For example, a large groundwater abstraction further from the Development may be hydrologically connected due to its larger zone of influence. A smaller abstraction, closer to the Development, may not be hydrologically connected because it has a very small zone of influence. It is acknowledged that this is often unknown or estimated by residents.
Any comment of the condition of your water supply	This informs an understanding of the existing level of vulnerability of the PWS and potential need for additional protection measures. For example, PWS that have previously been influenced by quantity reductions during drought periods may be more vulnerable than those who have not experienced this. Any information regarding previous water quality issues or quantity issues can inform an understanding of where the water is likely to be sourced from and the pathway it takes to get to the property.

Consultation letters and questionnaires were sent to the residents of the following properties with PWS:

- Corriegarth Lodge & Keepers Cottage;
- Garthbeg Farm; and
- Garthbeg Bungalow.

Responses were received from all contacted residents.

A12.2.4 Site Visit

A hydrological site walkover was conducted on 6th November 2019. A survey of PWS infrastructure was not deemed necessary based on the finding of the desk-based assessment, further information is provided in Section A12.3.

A12.2.5 Assessment of Risk

The level of risk is attributed to each of the PWS based on the sensitivity level of the receptor (source water, distribution infrastructure and point of supply), combined with the level of magnitude of impact. The resultant level of risk is based on the risk matrix outlined in Table 12.2.

Table 12.2: Risk Matrix

Magnitude of Effect	Sensitivity of Resource or Receptor				
	Very High	High	Medium	Low	Negligible
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

A12.3 RISK ASSESSMENT

A12.3.1 Identification of PWS

A total of five PWS have been identified within the PWS Study Area, three were identified through consultation with the Council and a further two through consultation with landowners. The location of the identified PWS are shown in Figure 12.4 of the EIA Report.

The details of the identified PWS and their hydrological connectivity to the Development are outlined in Table 12.4. This incorporates details provided through consultation with residents of properties and questionnaire responses.

PWS which are deemed to be hydrologically disconnected from the Development following desk-based assessment of hydrological and hydrogeological catchment boundaries, or PWS which are located upstream of the Development, are scoped out of the risk assessment and residents not consulted.

As a result, the following three PWS are risk assessed for impacts from the Development:

- PWS Corriegarth Lodge & Keepers Cottage;
- Garthbeg Farm; and
- Garthbeg Bungalow.

A12.3.2 Assessment

The potential risks to the hydrologically connected PWS as a result of construction and operation of the Development are detailed in Table 12.4. As detailed in Section A12.1, the risk is assessed with consideration of the mitigation measures outlined in Appendix A12.2: WCEMP, further details of the mitigation measures are outlined in Section of this assessment.

Further discussion on the sensitivity of each of the PWS receptors to the Development is provided in the following sections.

A12.3.2.1 PWS Corriegarth Lodge

PWS Corriegarth supplies two properties: Corriegarth Lodge and Keepers Cottage.

A consultation letter and questionnaire response was received outlining the property is supplied by a borehole sunk to a depth of approximately 105 m below ground level (BGL) located at the properties, and as such is a groundwater source. As the source is a borehole it was not deemed necessary to conduct a survey of the PWS as the source water is below ground, however a hydrology walkover of the site has been conducted.

The British Geological Survey (BGS) 1:625,000 hydrogeology and geology maps⁵ details the aquifer in this area as low productivity with water sourced mainly from isolated fracture flow. The bedrock geology is granite and is overlain in-part by superficial deposits of glacial till, which are relatively impermeable and act as a barrier to vertical ingress of water to the bedrock units. There is also an area of no superficial deposits which increases the potential for pollutants to enter the bedrock unit.

The Groundwater Vulnerability Map for Scotland⁶ vulnerability of the aquifer is 4b which deems it vulnerable to pollutants not readily adsorbed or transformed and with more rapid travel times of any released pollutants.

Due to the depth of the source water, the sensitivity of the PWS is deemed low.

The source water and supply are hydrologically disconnected from the main infrastructure Development associated with the wind farm by north-east to south-west trending fault lines in the bedrock unit, and is within a separate surface water catchment.

The PWS has the potential to be hydrologically connected to the access tracks and has the potential to be affected by works associated with upgrades and vehicle movements. It is likely this interaction is minimal due to the depth of the borehole.

The PWS is located approximately 115 m south of the upgraded access track, an excavation of less than 1 m, and not located within 100 m or 250 m of excavations in line with SEPA LUPS-GU31 guidance.

Following implementation of measures detailed in Section 12.4, the overall level of risk attributed to the Corriegarth Farm PWS is negligible as outlined in Table 12.4.

⁵ BGS (2020) GeoIndex Onshore [Online] Available at: <https://www.bgs.ac.uk/geoindex/> (Last accessed: 18/06/2020)

⁶ SNIFFER (2004) Groundwater Vulnerability Maps

A12.3.2.2 *Garthbeg Farm*

Garthbeg Farm PWS supplies one property of the same name. A consultation letter and questionnaire response was received and confirmed the property is supplied by a borehole sunk to an approximate depth of 120 m BGL, located at the property, and as such is a groundwater source. As the source is a borehole it was not deemed necessary to conduct a survey of the PWS as the source water is below ground.

The British Geological Survey (BGS) 1:625000 hydrogeology and geology maps⁷ details the aquifer in this area as low productivity with water sourced mainly from isolated fracture flow. The bedrock geology is granite and is overlain by superficial deposits of glacial till which are relatively impermeable and act as a barrier to vertical ingress of water to the bedrock units. The presence of such superficial deposits act as a protection barrier to surface level works, provided any excavations do not penetrate below the superficial deposit depth. An area of gravel and river deposits is located to 100 m to the south of the PWS, which is highly permeable and related to the presence of the River E to the south.

The source water and supply are hydrogeologically disconnected from the infrastructure Development and access tracks by north-east to south-west trending fault lines in the bedrock unit, and surface water catchments.

The PWS has the potential to be hydrologically connected to the access tracks and Development infrastructure through surface water groundwater interaction with lower reaches of River E and Loch Garth. It is likely this interaction is minimal due to the depth of the borehole and presence of superficial deposits, as well as distance from main infrastructure associated with turbine excavations. As a result, the sensitivity of Garthbeg Farm PWS is deemed low.

The PWS is located approximately 190 m north of the upgraded access track, an excavation of less than 1 m, and not located within 100 m or 250 m of excavations in line with SEPA LUPS-GU31 guidance.

Following implementation of mitigation measures the overall level of risk attributed to the Garthbeg Farm PWS is negligible as outlined in Table 12.4.

A12.3.2.3 *Garthbeg Bungalow*

Garthbeg Bungalow PWS supplies one property of the same name. A consultation letter and questionnaire response was received and confirmed the property is supplied by a borehole of 12 m deep located at the property, and as such is a groundwater source. As the source is a borehole it was not deemed necessary to conduct a survey of the PWS as the source water is below ground.

The Garthbeg Bungalow PWS is located in close proximity to Garthbeg Farm supply, and as such the assessment of the sensitivity of the supply is similar to those outlined in Section A12.3.2.2 and the sensitivity of the Garthbeg Bungalow is deemed low.

The PWS is located approximately 290 m north of the upgraded access track, an excavation of less than 1 m, and not located within 100 m or 250 m of excavations in line with SEPA LUPS-GU31 guidance.

Following implementation of good construction practice measures the overall level of risk attributed to the Garthbeg Bungalow PWS is negligible as outlined in Table 12.4.

⁷ BGS (2020) GeoIndex Onshore [Online] Available at: <https://www.bgs.ac.uk/geoindex/> (Last accessed: 18/06/2020)

Table 12.3: Identified PWS within PWS Study Area

Private Water Supply and Property	Type of PWS	Source Water	Grid ref' of source and supply	Distance from Development	Catchment	Hydrologically Connected to the Development	Risk Assessment Required
PWS Fairburn Lodge	Domestic (1 property)	Surface water (Stream)	NH 50231 19228	1.5 km north-east of the Site Boundary	River Fechlin	Hydrologically disconnected from Development by River Gourag.	No
PWS Tir Nan Og	Domestic (1 property)	Groundwater (Well)	NH 52026 19188	1.3 km north-east of the Site Boundary	River E (lower)	Hydrologically disconnected from Development by Loch Garth and River Gourag catchment boundaries.	No
PWS Corriegarth Lodge & Keepers Cottage	Domestic (2 properties)	Groundwater - Borehole (104 m deep)	NH 50830 17081	75 m south of Site Boundary - c115 m south of upgraded access track	River Fechlin	Disconnected from Development infrastructure by bedrock unit and north-east to south-west trending fault lines. Hydrologically connected to existing access track.	Yes
Garthbeg Farm	Domestic	Groundwater – Borehole (120 m deep)	NH 51757 16903	85 m north of Site Boundary - c190 m north of upgraded access track	River E	Hydrogeologically separated from Development infrastructure by bedrock unit and north-east to south-west trending fault lines. Hydrogeologically separated from access track by River E and superficial till deposits.	Yes
Garthbeg Bungalow	Domestic	Groundwater – Borehole (12 m deep)	NH 51806 16981	155 m north of Site Boundary - c290 m north of upgraded access track		Potential for connection to Development through fracture flow and interaction with groundwater surface waters at River E and Loch Garth.	Yes

Table 12.4: Risk Assessment

Private Water Supply and Property	Supply Type and Source Water	SEPA LUPS-GU31 Guidance		Sensitivity Level	Potential Impacts from Development	Mitigation	Impact Level	Risk
		Excavations < 1 m within 100 m	Excavations > 1 m within 250 m					
PWS Corriegarth Lodge & Keepers Cottage	Groundwater - Borehole (105 m deep)	✗	✗	Low Deep borehole and source water at depth > 100 m below ground level. Superficial deposits.	Chemical pollution, sediment pollution and impediments to flow as a result of upgrade works associated with the access track. Chemical and oil pollution from vehicles accessing site.	Good practice measures detailed in Section A12.4.	Negligible	Negligible
Garthbeg Farm	Groundwater – Borehole (120 m deep)	✗	✗	Low Deep borehole and source water at depth > 100 m below ground level. Presence of Superficial deposits	Chemical pollution, sediment pollution and impediments to flow as a result of upgrade works associated with the access track. Chemical and oil pollution from vehicles accessing site.	Good practice measures detailed in Section A12.4.	Negligible	Negligible
Garthbeg Bungalow	Groundwater – Borehole (12 m deep)	✗	✗	Low Works above water table. Presence of Superficial deposits	Chemical pollution, sediment pollution and impediments to flow as a result of upgrade works associated with the access track. Chemical and oil pollution from vehicles accessing site.	Good practice measures detailed in Section A12.4.	Negligible	Negligible

A12.4 GOOD PRACTICE MEASURES

The following good practice mitigation measures will be implemented during the construction of the upgraded access track:

- Silt traps to be installed on the down-slope side of tracks to ensure sediment is not transferred towards the settling tank or into the wider hydrological system;
- Infiltration trenches to be placed down-slope of overburden and rock stockpiles and will be designed to treat run-off before discharging back into the drainage network;
- Settlement lagoons to be installed to facilitate the settlement of sediment-laden run-off from turbine foundation excavations by allowing suspended solids to settle out of the water before it is discharged to ground or a watercourse;
- Check dams and silt traps to be installed on the down-slope side of tracks up-gradient of the PWS to ensure sediment is not transferred towards the source;
- Overburden and rock stockpiles and will not be located up-gradient of the PWS;
- 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;
- Outfall pipes will drain into a bunded section of the drainage ditch to allow suspended solids to settle. Further measures could include the use of flocculent to further facilitate the settlement of suspended solids, if required. This would only be carried out under following consultation with the local Environmental Health Officer; and
- Private Water Supply Monitoring Programme, as outlined below.

A12.5 PRIVATE WATER SUPPLY MONITORING PROGRAMME

A programme of water supply monitoring will ensure that water management measures are functioning appropriately.

The following sampling frequency is proposed in order to represent baseline hydrochemical conditions and set threshold values for water parameters:

- Once per month for 12 months prior to the construction phase;
- Once per month during construction phase; and
- Once per month for a period of two months following construction.

It is proposed that during the upgrade of the access track which passes up-gradient of the supply, the water quality will be monitored by weekly visual inspections and in-situ monitoring.

Prior to the construction phase of the Development, the occupants of Corriegarth Lodge & Keepers Cottage will be provided with an emergency contact sheet with the following details:

- A contact name and number of an appropriate person related to the Development; and
- A contact name and number at the environmental health department of the Council

A12.5.1.1 *Private Water Supply Analysis Suite*

The following water constituents will be monitored:

- pH;
- Total Petroleum Hydrocarbons (TPH);
- Suspended solids;
- Electrical conductivity;
- Heavy metals; and
- Microbiological parameters (e.coli, total coliforms and enterococci).

A12.5.2 Additional Mitigation

A 'watching brief' should be used to clearly mark any pipes which serve the property.

A12.5.3 Alternative Potable Source

An alternative potable source (in the form of a water bowser) can be provided during the construction of the access track up-gradient of the PWS, if required. As the occupants of the supply are financially involved with the Development, agreement to this measure will be sought prior to the determination of the Development.

A12.6 SUMMARY

The following private water supplies are identified as having the potential to be at risk from chemical pollution and sediment pollution as a result of the Development:

- Corriegarth Lodge & Keepers Cottage;
- Garthbeg Farm; and
- Garthbeg Bungalow.

The PWS are all groundwater sources at depth and are considered to be of low sensitivity. The magnitude of impact is considered minimal and following implementation of good practice measures, sampling and a 'watching brief', the overall magnitude of impact is negligible for all PWS. The overall risk to PWS as a result of works associated with the Development is negligible.



CORRIEGARTH 2 WIND FARM

APPENDIX A13.1

PEAT SLIDE RISK ASSESSMENT

SEPTEMBER 2020



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1 INTRODUCTION

1.1 Background

Arcus Consultancy Services were commissioned by BayWa r.e. to carry out a Peat Slide Risk Assessment (PSRA) for the proposed Corriegarth 2 Wind Farm (The Development). The Development will consist of the following key infrastructure:

- Up to 16 three-bladed turbines with a maximum tip height of 149.9 m and rotor diameters of up to 133 m including external transformers (if required);
- Associated foundations, blade laydown areas and crane hardstandings at each wind turbine location;
- Access tracks linking the turbine locations;
- Substation compound incorporating electrical switchgear and wind farm control elements;
- Temporary construction compound;
- Underground cabling running adjacent to the access tracks where possible; and
- Up to two onsite borrow pits.

The proposed Site layout is shown on Figure 13.1.1 appended with this report in Appendix A.

1.2 Scope and Purpose

This PSRA provides factual information on the peat survey results relating to the proposed turbine locations. Desk-based information and site surveys have been utilised to assess the potential risk of any peat landslide. 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 Guidance¹ in assessing the likelihood and consequence of such an event.

¹ <https://www.gov.scot/publications/peat-landslide-hazard-risk-assessments-best-practice-guide-proposed-electricity/>

2 SITE INFORMATION

2.1 Site Description and Topography

The Site is located south-east of Loch Ness and approximately 15 km north-east of Fort Augustus, and the site boundary is approximately 1,694 hectares (ha), as shown on Figure 13.1.1. The Site incorporates the boundaries of the operational Corriegarth Wind Farm in its entirety. The Site is centred on National Grid Reference (NGR) 257500, 813100.

The topography of the Site and immediate vicinity is complex and largely consist of rural upland farmland used for grazing and grouse shooting. The Site itself varies significantly in elevation ranging from approximately 550 - 720 m Above Ordnance Datum (AOD) in the central part of the Site, which is within the Operational Corriegarth Wind Farm, before sloping west along the access track towards the B862, with elevations reducing to approximately 200 m AOD. A number of hills are present in the immediate vicinity of the Site boundary while the summit of Carn na Saobhaidhe is within the western site area, at 603 m AOD.

2.2 Published Geology

2.2.1 *Superficial Soils*

Published British Geological Survey (BGS) mapping² of superficial soils indicates the majority of the site to be underlain by peat with small pockets of till, glacial sand and gravel in the east of the Site. Figure 13.1.2 illustrates the published Superficial Soils.

2.2.2 *Solid Geology*

Published bedrock geology mapping indicates the Site to be underlain by a variety of bedrock geology. The Gairbeinn Pebbly Psammite Member in the form of Pebbly Psammite dominates the northern sector of the Site while the Monadhliath Semipelite Formation (Semipelite) underlies the southern sector.

The Loch Laggan Psammite Formation, which is predominantly micaceous and feldspathic psammite with thin semipelite beds, covers the central sector of the Site other than a thin band of the Ruthven Semipelite Formation, in the form of Semipelite and Gneissose, which runs across the central western area.

Small pockets of the North Britain Siluro-Devonian Calc-Alkaline Dyke Suite (Felsite) are scattered sporadically across the Site, and the Foyers Igneous Complex (Quartz-Diorite) is present at the north-western extent, near the site entrance.

Figure 13.1.3 illustrates the published Solid Geology

2.2.3 *Geomorphology*

Geomorphological mapping can act as a primary instrument in highlighting geological risk factors when considering peat slides. The Scottish Government Guidance provides 5 basic features in which a geomorphological map should convey:

- The position of major slope breaks (e.g. convexities and concavities);
- The position and alignment of major natural drainage features (e.g. peat gullies and streams);
- The location and extent of erosion complexes (e.g. hags and groughs, large areas of bare peat);
- Outlines of past peat landslides (including source areas and deposits), if visible; and

² British Geological Survey (BGS) 2019: <http://mapapps2.bgs.ac.uk/geoindex/home.html>

- The location, extent and orientation of cracks, fissures, ridges and other prefailure indicators.

Figure 13.1.4 'Geomorphology Map' has been prepared to inform a baseline information of the Site with consideration given to existing site conditions through site visit and aerial photography, slope angles and geomorphological data.

The Sites hydrology is dominated by the River E and its tributaries, the majority of which run from east to west across the site with its remaining tributaries flowing north from the southern sector of the Site. The River Gourag is also present in the western sector of the site flowing in a southerly direction, eventually running into the River Foyers.

Across the Site as a whole, there is little evidence of past peat failure; however, four possible historic peat slide/fissure locations are recorded within the southern sector of the Site, two of which are in an area of intensive peat hags and two are in an area of sparse peat hags. Notably all are located on the northern slope of Càrn na Làraiche Maoile in areas recorded as having peat at depths of between 1.0 m and 1.5 m.

The possible historic peat slide/fissure are located approximately 200 m to 300 m south of T3, T4 and T5; however, the turbines are located at a lower altitude where the slope is at a shallower gradient which would reduce the slide risk at these locations. Photographs are provided in Appendix A.

There is evidence of intensive peat haggings within the northern, eastern and south-eastern areas of the site along with sparse areas of peat hags in southern, central and north-western areas.

The Site has varied and extensive slopes with numerous hills located around the boundary of the Site. The majority of the Site where the turbines are located is dominated by 4° to 12° slopes, while within the wider Site area, crests of up to 27° are present around the area of Carn na Saobhaidhe in the western sector of the Site. Infrastructure on or in proximity to slopes has been carefully designed with respect to peat and topography. The Slope Gradients are included in Figure 13.1.7.

2.2.4 Hydrology and Hydrogeology

The Site lies within the catchments of the River E and River Foyers.

The River E flows east to west across the core study area and rises in the southeast of the Site before discharging into Loch Mhor (also known as Loch Garth). The River E has an overall SEPA status of "Moderate".

The Allt Bad Fionnaich and Allt a' Ghille Charaic tributaries of the River E rise approximately 800 m and 900 m east of the Site boundary respectively and flow west across the Site to join River E at the southwest boundary of the Site. A number of small unnamed tributaries of the River E are present at the south of the Site, flowing south to north.

The River Gourag, a tributary of the River Foyers, exists in the west of the Site. It issues from Loch Mohr and flows south into the River Foyers. The River Gourag has an overall SEPA status of "Good".

BGS 1:50,000 digital mapping and the BGS GeoIndex shows the bedrock aquifer underlying the Study Area to consist of the Grampian Group and Unnamed Igneous Intrusion, late Silurian to early Devonian. These rocks are classified by the BGS as a 'low productivity aquifer' with small amounts of groundwater in the near-surface weathered zone and secondary fractures.

2.3 Sources of Information

The following sources of information were used as part of the desk study investigations:

- British Geological Survey - Online GeoIndex ³;
- Ordnance Survey (OS) topographical information;
- Aerial and Satellite photography via Ordnance Survey and Google Earth.
- Soil Survey of Scotland - 'MacAulay Institute for Soil Research' 1984;
- Soil Survey of Scotland - 'Scottish Peat Surveys' 1964;
- Scottish Government (SG) - 'Peat Landslide Hazard and Risk Assessments' December 2017;
- Scottish Government, Scottish Natural Heritage, SEPA (2017) Peatland Survey⁴, Guidance on Developments on Peatland;
- The Scottish Government - Scotland's Third National Planning Framework, 2014⁵;
- The Scottish Government - Scottish Planning Policy, 2014⁶;
- Assessments by other EIA specialists (specifically hydrology and ecology for data on sensitive receptors); and
- Scotland's Environment Interactive Map⁷.

³ <https://mapapps2.bgs.ac.uk/geoindex/home.html>

⁴ <https://www.gov.scot/publications/peatland-survey-guidance/>

⁵ <https://www.gov.scot/publications/national-planning-framework-3/>

⁶ <https://www.gov.scot/publications/scottish-planning-policy/>

⁷ <https://soils.environment.gov.scot/maps/soil-maps/national-soil-map-of-scotland/>

3 GUIDANCE AND METHODOLOGY

3.1 General Guidance on Peat Failure

The SG guidance divides peat instability into two categories⁸: '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 2.0 m (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 1.5 m; and
- Slope gradients are shallow (between 2° and 10°).

It should be noted however that peat instability events, although uncommon, can occur outwith these limits and reports of bog bursts are generally restricted to the Republic and Northern Ireland.

Preparatory factors which effect 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 Wind Farm 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. The site layout included embedded design measures to avoid deep peat where possible and took consideration of site topography.

3.2 Assessment Approach

This PSRA has been carried out in accordance with Scottish Government (SG) guidance of 2017, titled 'Peat Landslide Hazard and Risk Assessments - Best Practice Guide for Proposed Electricity Generation Developments', Scottish Government.

⁸ Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (2017): <file:///arcus01/Technical%20Information/Engineering/Geotechnical%20and%20Environmental%20Reference%20Documents/Peat/ScotGov-PeatLandslideHazardandRisk-2017.pdf> (Accessed 13/01/2020)

In June 2014, the new 'Scottish Planning Policy' (SPP)⁹ and 'National Planning Framework (NPF3)¹⁰ were published. In relation to peat and the assessment of effects on resource, NPF3 references Scottish Natural Heritage 'Scotland's National Peatland Plan¹¹'. These policy, framework and guidance documents are therefore also considered in this PSRA. The PSRA undertaken is based on;

- Desk based assessment;
- Site visits;
- Historic peat probing data;
- Further peat probing including 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.

3.3 Peat Probing Methodology

Initial peat probing (phase one) was undertaken by Arcus as part of the preliminary EIA works, supplemented by existing peat data from the Operational Corriegarth Wind Farm. This was combined with detailed peat probing within the affixed Site layout and immediate vicinity at more detailed level. Preliminary probing consisted of 100 m centres within the proposed area for the locations of the turbines, in this case in the surrounding areas of the existing Operational Corriegarth Wind Farm. Following on from this, the design freeze layout was probed in a more detailed methodology (phase two) comprising 50 m intervals along track centre lines and up to 25 m either side to create a corridor. Probes were undertaken at 10 m centres at turbines in accordance with SG guidance.

Following design iteration revisions, further peat probing was required in order to cover areas not previously probed following the same methodology as the Phase 2 probing.

3.4 Development of Hazard Rank

The early stages of the PSRA includes a desk study of existing data, site visits and preliminary peat probing with consideration given to the assessment of wider constraints and the design of the Development layout. Following collection of peat depth data and site reconnaissance information gathering, an assessment was carried out to determine the potential effects on the peat resource from 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 depth, slope gradient and other key factors would be undertaken in order to determine a hazard rank calculated zonally across the Site reflecting risk of peat instability/constraint to construction.

Where practical, the Development layout would be designed to avoid areas of a risk score above 'low'. Where this cannot be achieved, areas affected will be discussed in the EIA as having significant effect, with relative mitigation measures proposed to reduce this, and

⁹ Scottish Government Scottish Planning Policy (2014): <https://www.gov.scot/publications/scottish-planning-policy/> (Accessed 13/11/2019)

¹⁰ Scottish Government National Planning Framework 3: <https://www2.gov.scot/About/Performance/scotPerforms> (Accessed 13/11/2019)

¹¹ <https://www.nature.scot/scotlands-national-peatland-plan-working-our-future>

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

The existing peat depths across the Site have been determined through a phased survey approach. The survey was initiated to inform the EIA and Site design work while supporting the PSRA.

Initial peat depth surveys were undertaken in August, September and December 2019 comprising the 100 m grid coverage across the Site, as detailed in section 3 in accordance with the phase one approach as detailed in the Scottish Government guidance for investigating peat.

Further peat depth surveys (phase two) was undertaken across several visits between June, July and August 2020. The probe positions for this visit were focussed on the proposed turbine, 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, an intense 10 m grid across the proposed turbine locations.

Peat Cores were also undertaken and the findings are discussed in Section 4.4 and details are included in Appendix D.

4.2 Peat Depth

Throughout the peat surveys to date, a total of 3,380 probes were sunk. Of these, 13.4% recorded no peat or peat less than 0.5 m, while 31.7% recorded peat between 0.5 m and 1.0 m. Deep peat (where the depth was greater than >1.0 m) was recorded at 54.9% of locations.

The maximum peat depth recorded was 5.3 m in the south-eastern area of the Site. Generally, peat depths exceeded 1.0 m, which is anticipated with localised generally flat topography and rural upland setting.

Figure 13.1.6 'Interpolated Peat Depths' included in Appendix A illustrates the peat depths across the Site. The distribution of peat deposits along the proposed tracks and infrastructure are shown on Figure 13.1.5 'Recorded Peat Depths' included in Appendix A.

Peat depths at turbines and the wider Site are included in Table 1 and 2 respectively while the general Site survey conditions are illustrated in photographs 1 to 6. Additional photographs are included in Appendix B.

Photograph 1 – Taken in the southern Site area in close proximity to T5, facing south.



Photograph 2 – Taken in the central Site area on an existing track, facing west.



***Photograph 3 – Taken in the northern Site area in close proximity to T13,
facing north-west***



***Photograph 4 – Taken in the eastern Site area in close proximity to T8, facing
south-west***



Photograph 5 – Taken in the eastern Site area in close proximity to T7, facing west



Photograph 6 – Taken in the north-eastern Site area facing south



The peat slide risk assessment was undertaken on the finalised Site layout provided by the design team. Table 1 indicates the average peat depths encountered at each proposed turbine location while Table 2 summarises the peat depths recorded across the entire project.

Table 1 – Peat Depths at Turbines and Associated Hardstand

Proposed Turbine No.	Average Peat Depths at 50 m Radius (m)
T1	0.95
T2	1.30
T3	0.75
T4	1.50
T5	0.79
T6	1.17
T7	1.43
T8	1.48
T9	1.15
T10	0.55
T11	0.76
T12	1.20
T13	1.04
T14	1.14
T15	0.78
T16	1.11

Table 2 – Peat Depth Summary

Peat Depth Range (m)	No of peat probes	Percentage of Total (%)
0.00 - 0.50	638	14.77
0.51 - 1.00	1365	31.60
1.01 - 1.50	996	23.06
1.51 - 2.00	929	21.50
2.01 - 2.50	265	6.13
2.51 - 3.00	98	2.27
3.01 - 3.50	12	0.28
3.51 - 4.00	14	0.32
4.01 - 4.50	2	0.05
4.51 - 5.00	0	0.00
5.01 - 5.50	1	0.02

4.3 Substrate

To assist with the peat slide risk assessment, an estimation of the underlying substrate was obtained during the preliminary site visits, comprising a resistance-based approach at base of probe.

- Gradual refusal – Clay;
- Crunching/Gritty – Weathered Rock/Sand and Gravel; or
- Abrupt Refusal/Hard – Rock

The substrate parameters are only a guide and much of the probing undertaken as part of the detailed peat probe investigations did not consider substrate values during the works, therefore a conservative 'not proven' value is assumed for these probes as included in the Hazard and Exposure Assessment in Section 5 of this report.

4.4 Peat Cores

A series of peat cores were obtained from 11 of the 16 proposed turbine locations where peat was recorded at depths greater than 1.0 m during the peat probing assessment in order to further characterise the peatland. As a precaution, T1 was included within the peat coring assessment despite peat being recorded at 0.95 m. The methodology in which the peat coring was undertaken was guided by the Peatland Survey (2017) *Guidance on Developments on Peatland*¹², commissioned by the Scottish Government, Scottish National Heritage and SEPA. An outline of the methodology along with photographs and characterisation of the peat cores are presented in the Peat Coring Records in Appendix D.

Characteristics of the peat were recorded to be generally consistent across the site with a trend in the changes of the peat properties with depth. Firm ground was recorded at all coring locations, which could be an indicator of low moisture content within the peat. This assumption is strengthened by the fact that upon squeezing, minimal volumes of liquid were extruded by the soil matrix, especially in the upper soil horizons where less decomposition has occurred and higher volumes of free-flowing liquids could be expected. Details on botanical and vegetation parameters are included in **Chapter 7: Ecology** of the EIA Report and the associated Ecology Technical Appendices.

Humification of peat is determined using the Von Post scale which indicates the degree to which peat has undergone humification or, more correctly, a type of decomposition which includes breakdown under anaerobic conditions. The Von Post Scale (H) ranges from 1 to 10, the higher the number the higher the degree of humification. Von Post values ranged from H2 to H8 within the peat cores obtained at the Development with averages across different depth ranges presented in Table 3.

Table 3 –Von Post value by depth

Depth range (m)	No of peat cores	Low H Value	High H Value	Mean H Value
0.0 – 0.5	11	2	7	4.1
0.5 -1.0	10	4	8	5.9
1.0 – 1.5	5	6	8	7.2

The definitions for the mean values identified at each depth range are as follows:

- H4 - Slightly decomposed peat containing some amorphous material. Strongly muddy brown water but no peat passes between the fingers. Residue is somewhat pasty.
- H6 - Moderately decomposed peat with a fair amount of amorphous material and indistinct plant structure. On pressing, about one third of the peat passes between

¹² Scottish Government, Scottish Natural Heritage, SEPA (2017) Peatland Survey. *Guidance on Developments on Peatland*,

the fingers. Residue is strongly pasty, but shows the plant structure more distinctly than in unsqueezed peat.

- H7 - Strongly decomposed peat with much amorphous material and faintly recognisable plant structure. On squeezing, about one half of the peat is extruded. The water is very dark in colour.

Fine fibres were recorded at a high content within the peat, particularly in the upper horizons with quantities reducing to a moderate content with greater depth. Similarly, the quantity of coarse fibres generally reduced with depth, typically from moderate to low content. Wood remains were only recorded at a low content within the upper soil horizons at two locations (T9 and T13); no other evidence of wood remains were encountered during the investigation.

The vast majority of peat at the site was recorded as Dark Brown in colour. Exceptions to this included at T7 where Brown peat was recorded and T9 where Black Brown peat was noted. Black Brown peat was also recorded from 0.0 – 0.5 m at T4 and >0.5 m at T1 and T16.

HAZARD AND EXPOSURE ASSESSMENT

4.5 Background

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

$$\text{Hazard Ranking} = \text{Hazard} \times \text{Exposure}$$

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.

4.6 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.

4.7 Hazard Assessment

The potential for a peat slide to occur during the construction of a Wind Farm 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

4.8 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 deep peat generally occurs in areas of shallow gradient 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:

$$\text{Hazard Rating Coefficient} = \text{Slope Gradient} \times \text{Peat Thickness} \times \text{Substrate}$$

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
>15 to 30	Medium
>30 to 50	High
> 50	Very High

4.9 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 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 sought from various literature values and for the purposes of the assessment in this report have the following average values have been utilised in the formula to inform the stability assessment;

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 ($^\circ$), typically ranging from 21.6 to 43.5 therefore **29.6** has been adopted for the purposes of the assessment.

γ – 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 a similar and more onerous approach, high risk areas are indicated where F is <1.0 , medium risk areas are indicated between 1.01 to 1.50, low risk between 1.51 and 2.00 and very low/negligible values > 2.0 .

Using digital terrain modelling and GPS co-ordinates of each peat probe, a factor of Safety, F has been calculated for each probe location which has been created through ArcGIS Spatial Analyst tools. The 'Factor of Safety Plan' is shown on Figure 13.1.8.

4.10 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 Operational Corriegarth Wind Farm 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.

4.11 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 6: 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 7: Coefficients for Distance from Receptor

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

Table 8: Coefficients for Receptor Elevation

Receptor Elevation	Elevation Coefficients
< 10 m	1
10 m to 50 m	2
50 m to 100 m	3
> 100 m	4

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

$$\text{Exposure Rating Coefficient} = \text{Receptor} \times \text{Distance} \times \text{Elevation}$$

From the Hazard Rating Coefficient, the risk to stability can be ranked as set out in Table 9.

Table 9: Exposure Rating

Exposure Rating Co-efficient	Potential Stability Risk (Pre-Mitigation)
<6	Very Low
6 to 12	Low
13 to 24	High
25 to 30	Very High
>30	Extremely High

4.12 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 10.

Table 10: Rating Normalisation

Hazard Rating		Exposure Rating	
Current Scale	Normalised Scale	Current Scale	Normalised Scale
< 6 Negligible	1	<5 Very Low	1
6 to 12 Low	2	5 to 15 Low	2
13 to 24 Medium	3	16 to 30 High	3
25 to 30 High	4	31 to 50 Very High	4
>30 Very high	5	>50 Extremely High	5

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

5 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 11 and 12 below:

Table 11 - 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 12- 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 ten hazard zones using the approach in Section 5. A summary of the Hazard Ranking result for each identified area is summarised in Table 13 and is presented in Figure 13.1.9 'Hazard Ranking Zonation Plan'.

6 SLIDE RISK AND MITIGATION

6.1 General

This PSRA has shown the Site to be generally of low hazard ranking with areas of moderate risk across the most southern track and at T1, T2, T3, T4, T5 and T6 and locally north of T7 within a section of track, see Figure 13.1.9.

Where the hazard ranking has been lowered through mitigation measures, the original ranking will remain in the overall hazard zoning plan and it should be acknowledged that the hazard zonation plan is based on the pre-mitigation status

While the site layout design includes embedded design measures in relation to avoiding deep peat, specific recommended mitigation in low and medium ranked areas are proposed, and it is 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 Table 13. 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 13 – Hazard Rank

Hazard Area and Infrastructure		Unmitigated Hazard		Mitigated Hazard	
Hazard Area	Infrastructure Affected	Ranking	Key Aspects	Specific Actions	Ranking
H1	Existing Track, Existing Substations Proposed Track, Construction Compound, Substation, Borrow Pit 1	Low	Location and topography: Main access track to site from the public road, western face of Carn na Saobhaide. The former borrow pit and operational substation are located in this area. Locally steep slopes but gently sloping north-west towards site entrance. The proposed borrow pit and substation are located in this zone. Geomorphology: River E runs north west to south east. Sparse Peat Haggings to the north of the Zone.. Peat Depth: (min) 0.9m - (max) 2.2m. Average 1.55m Slope Gradient: 0° to 30°	Best practice construction methods should be used during borrow pit extraction and reinstatement and construction of the substation	Low

			Exposure: Proposed infrastructure, minor watercourses and existing tracks.		
H2	T16, Proposed Access Track	Moderate	Location and topography: West of the Site – Localised steep areas, sloping down to north-west. Geomorphology: Tributary of River E runs west to east along northern Zone area. Localised intensive Peat haggings in northern and western Zone areas. Peat Depth: (min) 0.15m - (max) 2.74m. Average: 1.19m Slope Gradient: 0° to 30° Exposure: Proposed Infrastructure, minor watercourse, peat haggings.	Micro-siting in to areas of thinner peat is recommended, where required. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted. Adoption of best practice methods to manage drainage. Monitoring programme for peat slide throughout the construction period should be considered.	Low
H3	T15, Proposed Access Track	Low	Location and topography: North West of the Site – Generally flat Geomorphology: Tributary watercourse of River E runs south west to north east along the northern Site area. Localised sparse peat haggings in northern zone area. Peat Depth: (min) 0.01m - (max) 1.70m. Average: 0.75m Slope Gradient: 0° to 10° Exposure: Proposed Infrastructure, minor watercourse, peat haggings.	Micro-siting in to areas of thinner peat is recommended, where required. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted. Adoption of best practice methods to manage drainage in excavations works. Monitoring programme for peat slide throughout the construction period should be considered.	Low

H4	T14, Proposed Access Track	Low	Location and topography: Sloping down to the west gently Geomorphology: Tributary to River E runs west to east along northern Site Area. Multiple artificial drainage sites in southern zone area. Sparse peat haggings in centre and south eastern zone area. Intensive peat haggings in northern zone area. Peat Depth: (min) 0.03m (max) 2.90m. Average: 1.01m Slope Gradient: 0° to 10° Exposure: Proposed Infrastructure, minor watercourse, peat haggings.	Micro-siting in to areas of thinner peat is recommended, where required. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted. Adoption of best practice methods to manage drainage in excavations works. Monitoring programme for peat slide throughout the construction period should be considered.	Low
H5	Turbines 9, 10, 11, 12, 13, Proposed Access Track	Low	Location and topography: North section of the Site sloping down northward gently –, Geomorphology: Tributary of River E runs from south west to north between T12 & T11. Separate tributary to River E runs west to east south of T9. Intensive peat haggings throughout with the exception of the areas surrounding t11 and to the west of T10 which are affected by sparse peat haggings. Peat Depth: (min) 0.02m - (max) 3.0m. Average: 1.11m Slope Gradient: 0° to 10°	Micro-siting in to areas of thinner peat is recommended, if required. Adoption of best practice methods to manage drainage in excavations works. Monitoring programme for peat slide throughout the construction period should be considered.	Low

			Exposure: Proposed Infrastructure, minor watercourse, peat haggs.		
H6	T7, T8, Proposed Access Track.	Moderate	Location and topography: East section of the Site – Generally flat, sloping upwards to the east of T7 and T8 Geomorphology: River E dissipates at Southern zone area. Tributary of River E runs west to east north of T8 in northern zone area. Intensive peat haggs throughout, some area of exposed peat in the southern zone area. Peat Depth: (min) 0.04 m - (max) 4.15m. Average: 1.54 m Slope Gradient: 0° to 30° Exposure: Proposed Infrastructure, minor watercourse, peat haggs, exposed bare peat.	Micro-siting in to areas of thinner peat is recommended, if required. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted. Adoption of best practice methods to manage drainage in excavations works. Monitoring programme for peat slide throughout the construction period should be considered.	Low

H7	T4, T5, T6, Proposed Access Track	Moderate	Location and topography: South East Site area extending to southern Site area – steeply sloping to the south towards Carn na Laraiche Maoile. Geomorphology: Tributary watercourses run north west to south east throughout the zone. Sparse peat haggin throughout with the exception of the north and east of T6 in the eastern zone area which exhibits intensive peat haggin. Some localised bare peat to the extreme north east of the zone. Peat Depth: (min) 0.02m - (max) 3.76m. Average: 1.35m Slope Gradient: 0° to 30+° Exposure: Proposed Infrastructure, minor watercourse, peat hags, exposed bare peat.	Micro-siting in to areas of thinner peat is recommended, if required. Adoption of best practice methods to manage drainage in excavations works. Monitoring programme for peat slide throughout the construction period should be considered.	Low
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H8	T2, T3, Proposed Access Track	Moderate	Location and topography: South western site area – zone slopes upwards to the south towards Loire Meirach. Geomorphology: Subsidiaries of the River E run from north to south throughout the zone. Intensive peat hags throughout. Peat Depth: (min) 0.02 (max) 5.3m. Average: 1.12m Slope Gradient: 0° to 30+° Exposure: Proposed Site Infrastructure, minor watercourses, peat hags.	Micro-siting in to areas of thinner peat is recommended, if required. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted. Adoption of best practice methods to manage drainage in excavations works. Monitoring programme for peat slide throughout the construction period should be considered.	Low
H9	T1, Proposed Access Track, Borrow Pit.	Moderate	Location and topography: Western Site Area – Zone slopes upwards to the west towards Carn Fliuch-bhaid. Geomorphology: river E runs north to south through the zone, evidence of artificial drainage to the east of the zone, sparse peat hagg in the southern zone area. Peat Depth: (min) 0.04m - (max) 2.9m. Average: 1.03m Slope Gradient: 0° to 30+° Exposure: Proposed Site Infrastructure, peat hags, minor watercourse.	Micro-siting in to areas of thinner peat is recommended, if required. In areas where peat depths exceed 1m, it is recommended that floating track construction methods should be adopted. Adoption of best practice methods to manage drainage in excavations works. Monitoring programme for peat slide throughout the construction	Low

				period should be considered. Best practice construction methods should be used during borrow pit extraction and reinstatement.	
H10	Operational Wind Farm and tracks	Very Low	Location and topography: Central Site Area – gently undulating topography. Geomorphology: river E runs along southern edge of the zone, evidence of artificial drainage throughout the zone, sparse peat haggings northern and southern zone areas. Peat Depth: (min) 0.0m - (max) 4.0m. Average: 1.31m Slope Gradient: 0° to 30+° Exposure: Proposed Site Infrastructure, peat haggings, minor watercourse, artificial drainage.	No Infrastructure proposed	Very Low

6.2 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.

6.3 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 Wind Farm;
- 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 design Development.

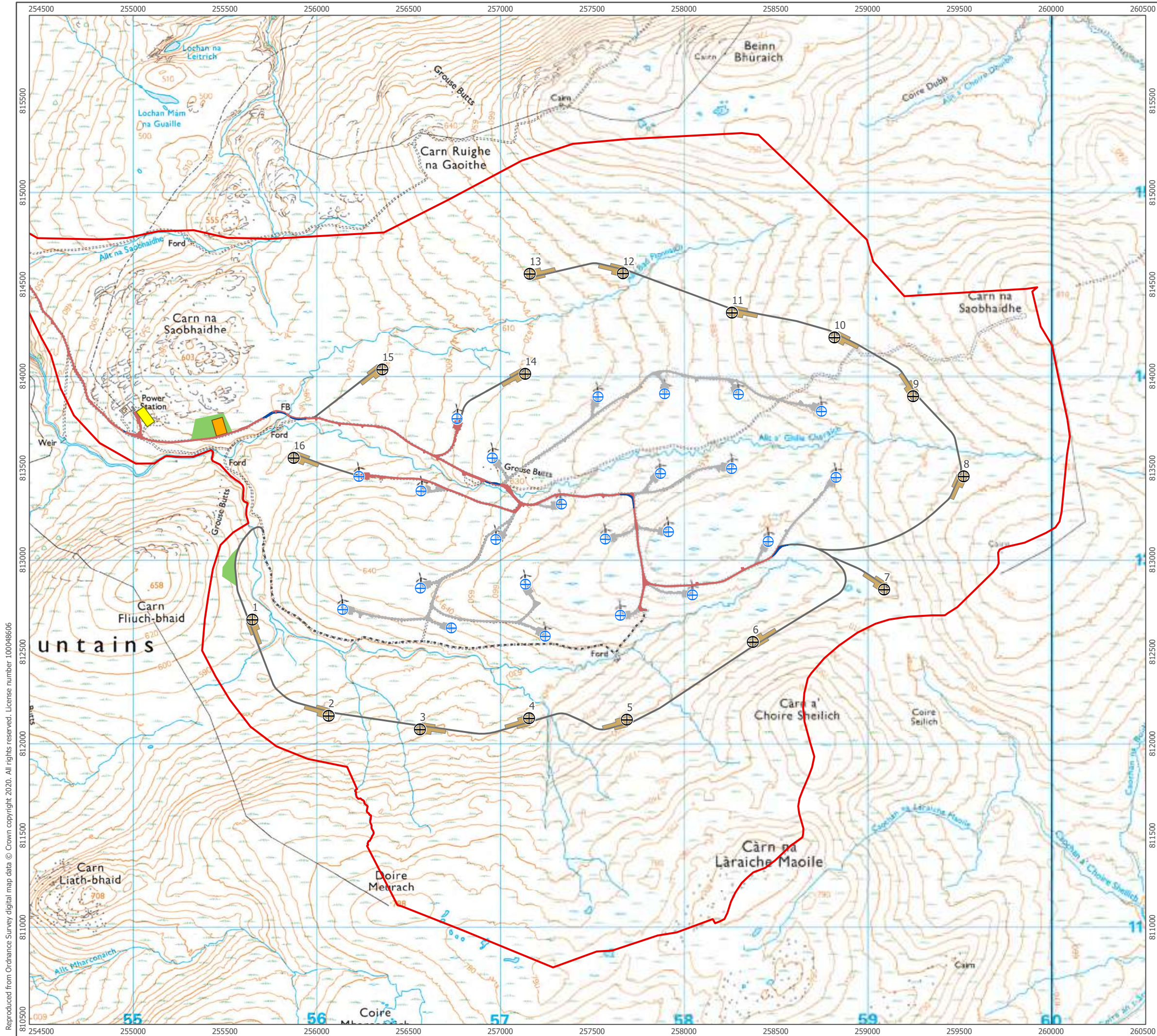
7 PSRA CONCLUSIONS

This PSRA has been undertaken for the proposed Corriegarth 2 Wind Farm in accordance with the Scottish Government Guidance. The early stages of the assessment included a desk study, historic peat probing across the Site, followed by further intensive probing exercise, selective peat coring across the finalised Site layout design. The information gathered during this investigation was used to develop a Hazard Ranking across the Development Site.

The findings of the probing indicate that the majority of the Site is underlain by deep peat and pre-mitigation risk assessment recorded areas of 'moderate' hazard rank in relation to peat slide, notably the southern site area between T1 and T6. However, the remainder of the site was generally within areas of 'low' hazard rank..

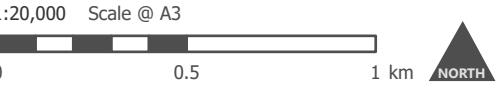
Proposed site infrastructure locations and existing site conditions should be checked on Site at the time of construction and adoption of micro-siting specific mitigation measures outlined in Section 6 should be required in order to maintain the design objective of avoiding any potential peat slide risk.

APPENDIX A - FIGURES



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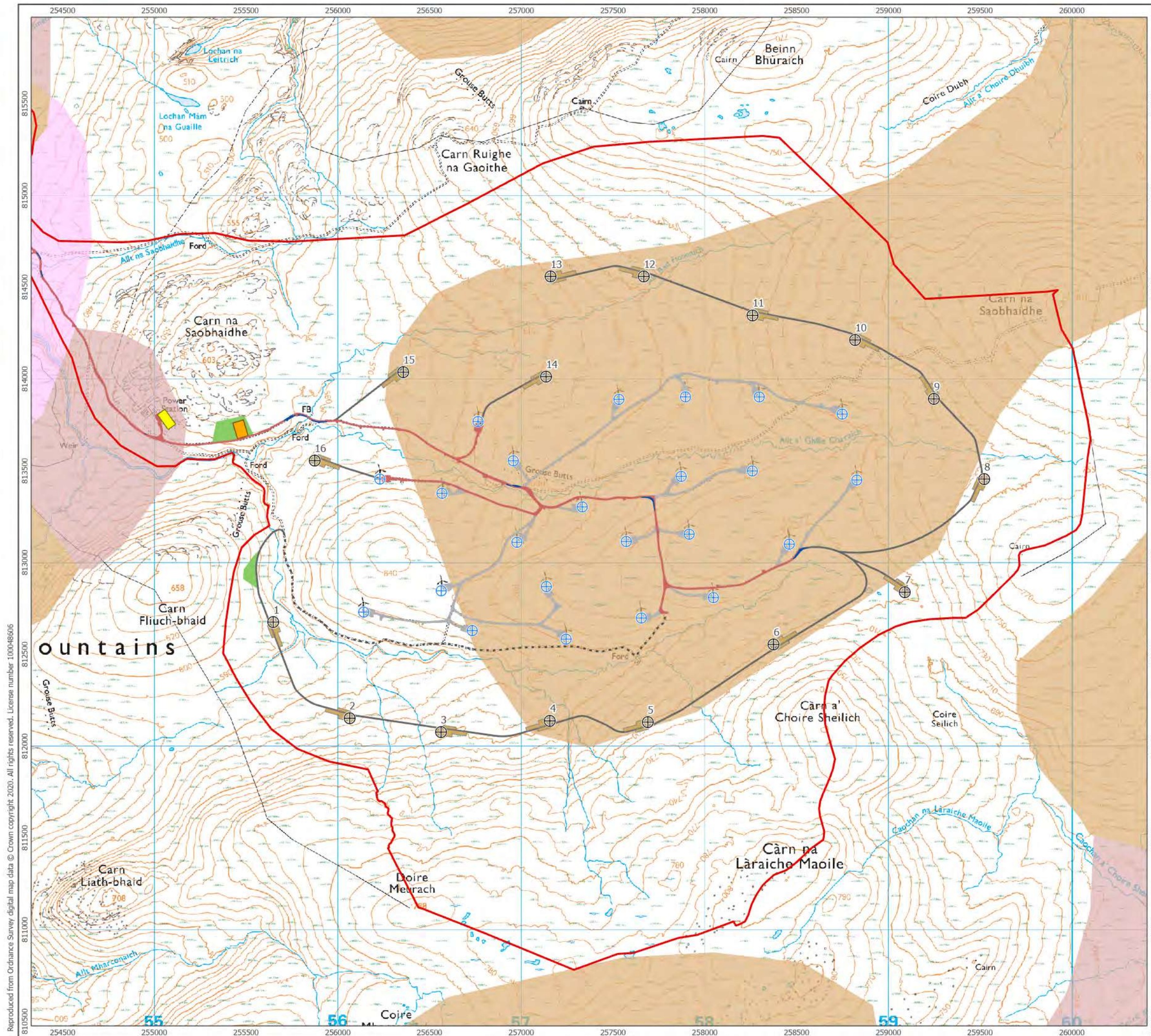
-  Site Boundary
-  Proposed Turbine Location
-  Operational Corriegarth Wind Turbines
-  Existing Track (Use restricted to construction phase for access to borrow pit only)
-  Borrow Pit Extents
-  Construction Compound
-  Crane Hardstanding
-  Existing Tracks to be Utilised
-  Existing Wind Farm Tracks
-  Laydown Area
-  Proposed Access Tracks
-  Substation Compound
-  Track Widening Area



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Site Layout Plan
Figure 13.1.1

Corriegarth 2 Wind Farm
Peat Slide Risk Assessment



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P:\Projects\Engineering\Projects\3369 Corriegarth\3369 Corriegarth.aprx\3369-REP-059 Fig13.1.2 Superficial Geology

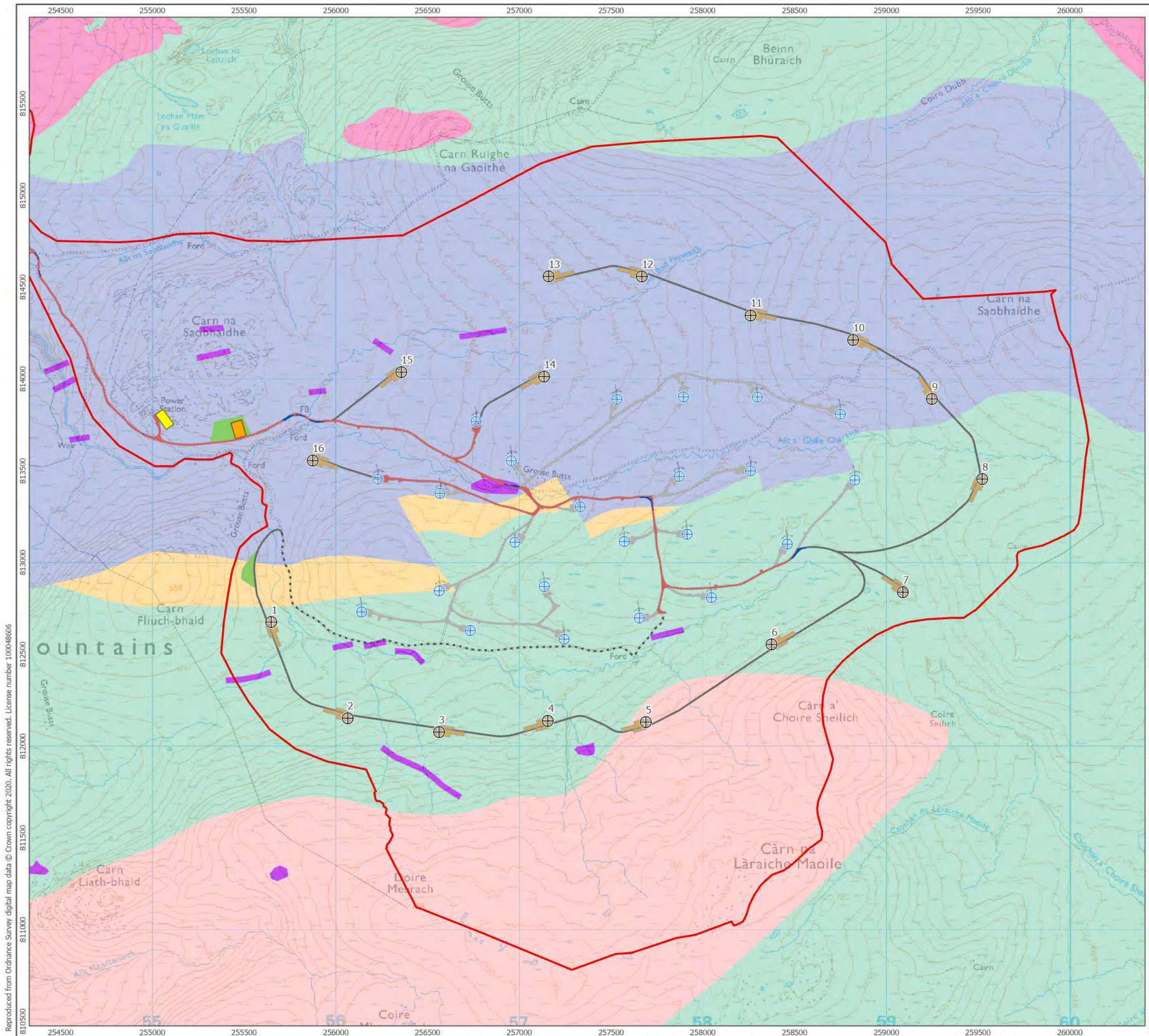
- Site Boundary
- Proposed Turbine Location
- Operational Corriegarth Wind Turbines
- Existing Track (Use restricted to construction phase for access to borrow pit only)
- Borrow Pit Extents
- Construction Compound
- Crane Hardstanding
- Existing Tracks to be Utilised
- Existing Wind Farm Tracks
- Laydown Area
- Proposed Access Tracks
- Substation Compound
- Track Widening Area
- Superficial Geology
 - Diamicton
 - Peat
 - Sand and Gravel



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Superficial Geology
Figure 13.1.2

Corriegarth 2 Wind Farm
Peat Slide Risk Assessment



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Site Boundary

Proposed Turbine Location

Operational Corriegarth Wind Turbines

Existing Track (Use restricted to construction phase for access to borrow pit only)

Borrow Pit Extents

Construction Compound

Crane Hardstanding

Existing Tracks to be Utilised

Existing Wind Farm Tracks

Laydown Area

Proposed Access Tracks

Substation Compound

Track Widening Area

Bedrock Geology

Foyers Igneous Complex

Gairbeinn Pebbly Psammite Member

Loch Laggan Psammite Formation

Monadhliath Semipelite Formation

North Britain Siluro-Devonian Calc-Alkaline Dyke Suite

Ruthven Semipelite Formation

Unnamed Metamorphosed Igneous Rocks, Pre-Caledonian to Caledonian

1:20,000 Scale @ A3

0

0.5

1 km

NORTH

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Date: 07/10/2020

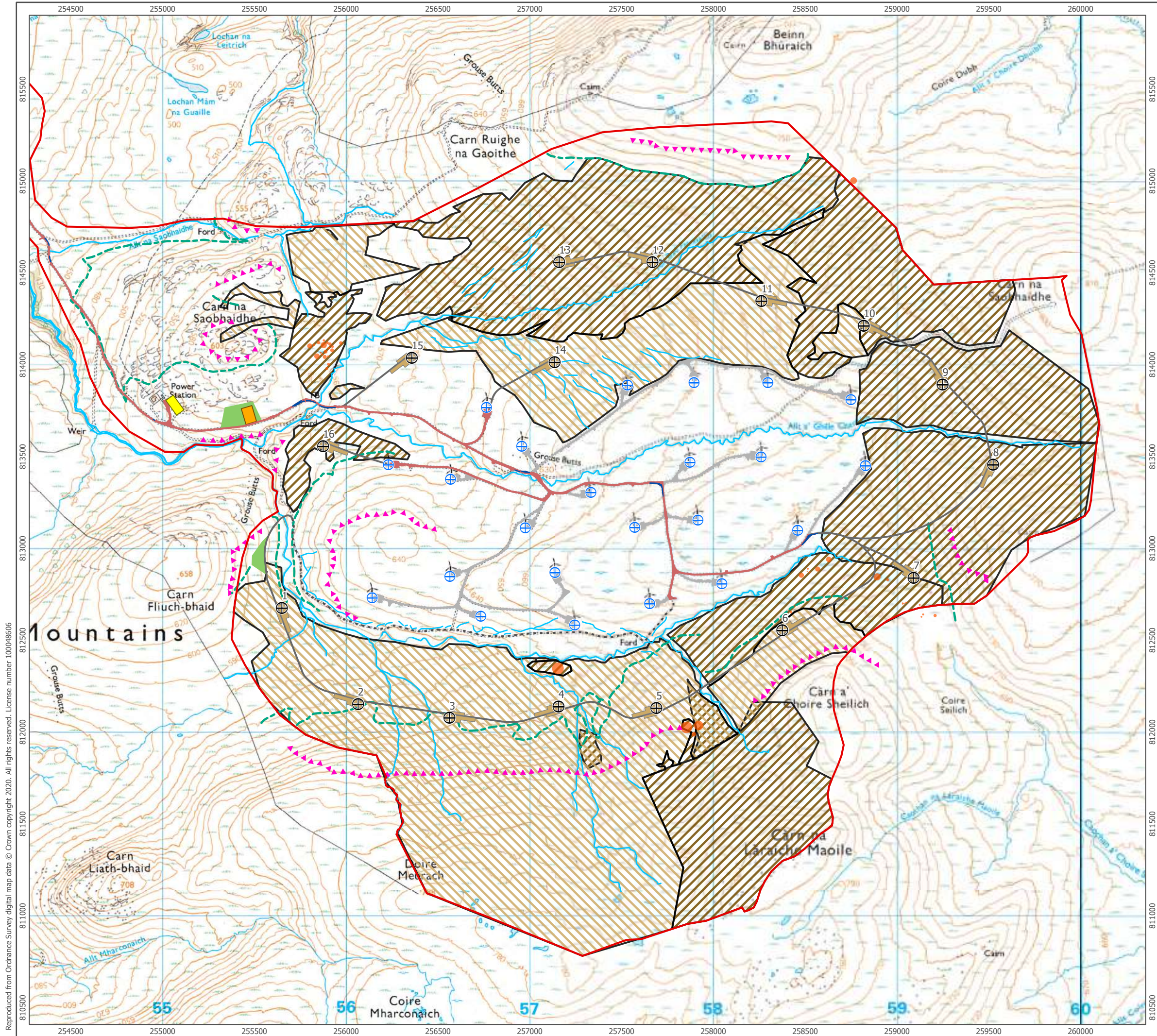
Bedrock Geology

Figure 13.1.3

Corriegarth 2 Wind Farm

Peat Slide Risk Assessment

P:\Projects\Engineering\Projects\3369 Corriegarth\3369 Corriegarth.aprx\3369-REP-060 Fig13.1.3 Bedrock Geology



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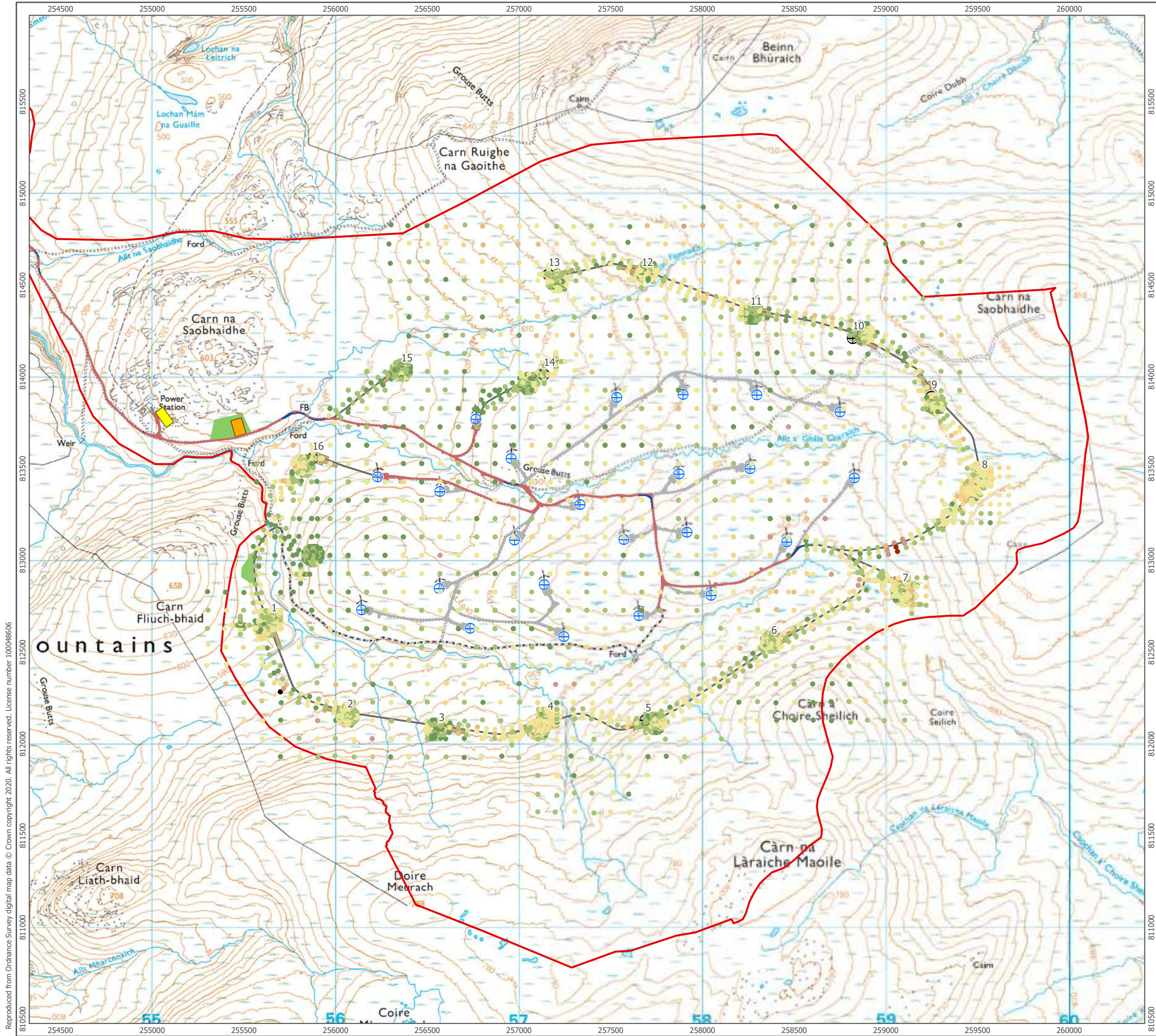
-  Site Boundary
-  Proposed Turbine Location
-  Operational Corriegarth Wind Turbines
-  Existing Track (Use restricted to construction phase for access to borrow pit only)
-  Borrow Pit Extents
-  Construction Compound
-  Crane Hardstanding
-  Existing Tracks to be Utilised
-  Existing Wind Farm Tracks
-  Laydown Area
-  Proposed Access Tracks
-  Substation Compound
-  Track Widening Area
-  Bottom of Slope
-  Top of Slope
-  Natural Watercourses
-  Intensive Area of Peat Haggs
-  Large Areas of Exposed Peat
-  Sparse Area of Peat Haggs



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Geomorphology Map
Figure 13.1.4

**Corriegarth 2 Wind Farm
Peat Slide Risk Assessment**



- Site Boundary
- Proposed Turbine Location
- Operational Corriegarth Wind Turbines
- Existing Track (Use restricted to construction phase for access to borrow pit only)
- Borrow Pit Extents
- Construction Compound
- Crane Hardstanding
- Existing Tracks to be Utilised
- Existing Wind Farm Tracks
- Laydown Area
- Proposed Access Tracks
- Substation Compound
- Track Widening Area
- Recorded Peat Depths (m)
 - 0.00 - 0.50
 - 0.51 - 1.00
 - 1.01 - 1.50
 - 1.51 - 2.00
 - 2.01 - 2.50
 - 2.51 - 3.00
 - 3.01 - 3.50
 - 3.51 - 4.00
 - 4.01 - 4.50
 - 4.51 - 5.00
 - 5.01 - 5.50

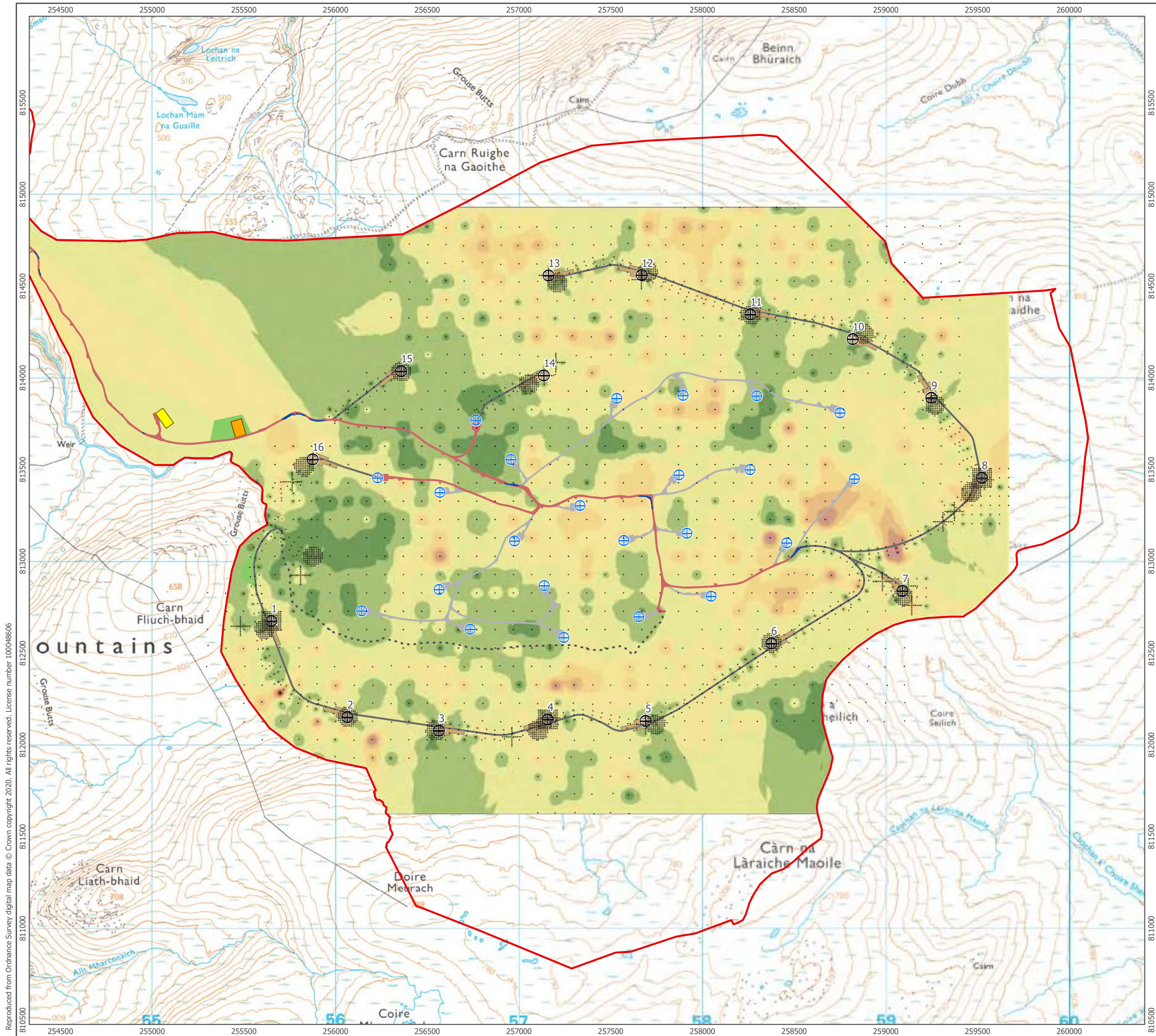
1:20,000 Scale @ A3

0 0.5 1 km NORTH

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Checked By: SC	Date: 10/09/2020

Recorded Peat Depths
Figure 13.1.5

Corriegarth 2 Wind Farm
Peat Slide Risk Assessment





Site Boundary

Proposed Turbine Location

Operational Corriegarth Wind Turbines

Existing Track (Use restricted to construction phase for access to borrow pit only)

Site Infrastructure

Borrow Pit Extents

Construction Compound

Crane Hardstanding

Existing Tracks to be Utilised

Existing Wind Farm Tracks

Laydown Area

Proposed Access Tracks

Substation Compound

Track Widening Area

Recorded Peat Depths

Interpolated Peat Depths (m)

0.00 - 0.50

0.51 - 1.00

1.01 - 1.50

1.51 - 2.00

2.01 - 2.50

2.51 - 3.00

3.01 - 3.50

3.51 - 4.00

4.01 - 4.50

4.51 - 5.00

5.01 - 5.50

1:20,000 Scale @ A3

0

0.5

1 km

NORTH

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Ref: 3369-REP-063

Checked By: SC

Date: 10/09/2020

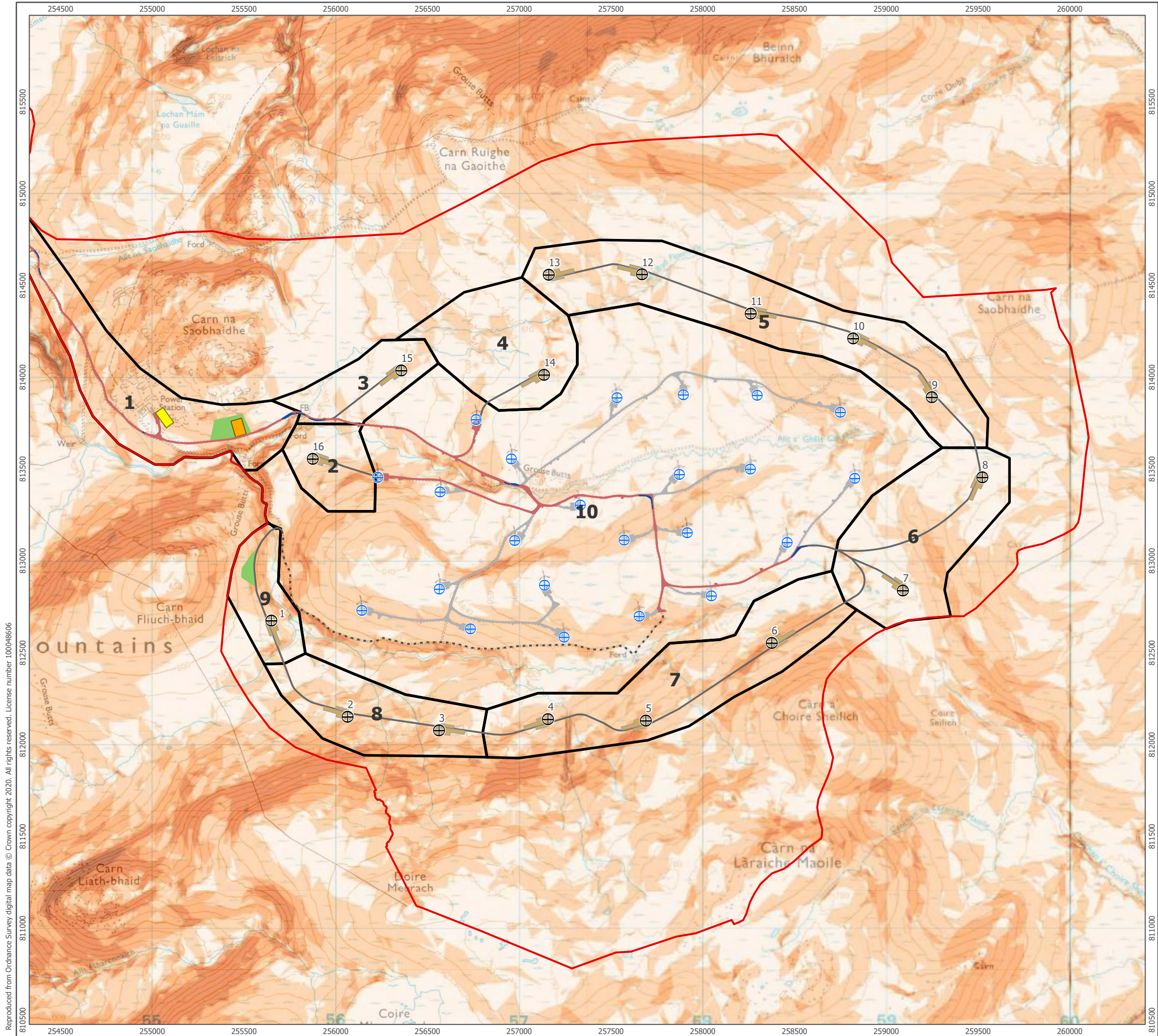
Interpolated Peat Depths

Figure 13.1.6

Corriegarth 2 Wind Farm

Peat Slide Risk Assessment

P:\Projects\Engineering\Projects\3369 Corriegarth\3369 Corriegarth.aprx\3369-REP-063 Fig13.1.6 Interpolated Peat Depths





Site Boundary

Proposed Turbine Location

Operational Corriegarth Wind Turbines

Existing Track (Use restricted to construction phase for access to borrow pit only)

Borrow Pit Extents

Construction Compound

Crane Hardstanding

Existing Tracks to be Utilised

Existing Wind Farm Tracks

Laydown Area

Proposed Access Tracks

Substation Compound

Track Widening Area

Slope Angle (deg)

0 - 5

5 - 10

10 - 15

15 - 30

30+

1:20,000

Scale @ A3

0

0.5

1 km

NORTH

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Slope Gradient

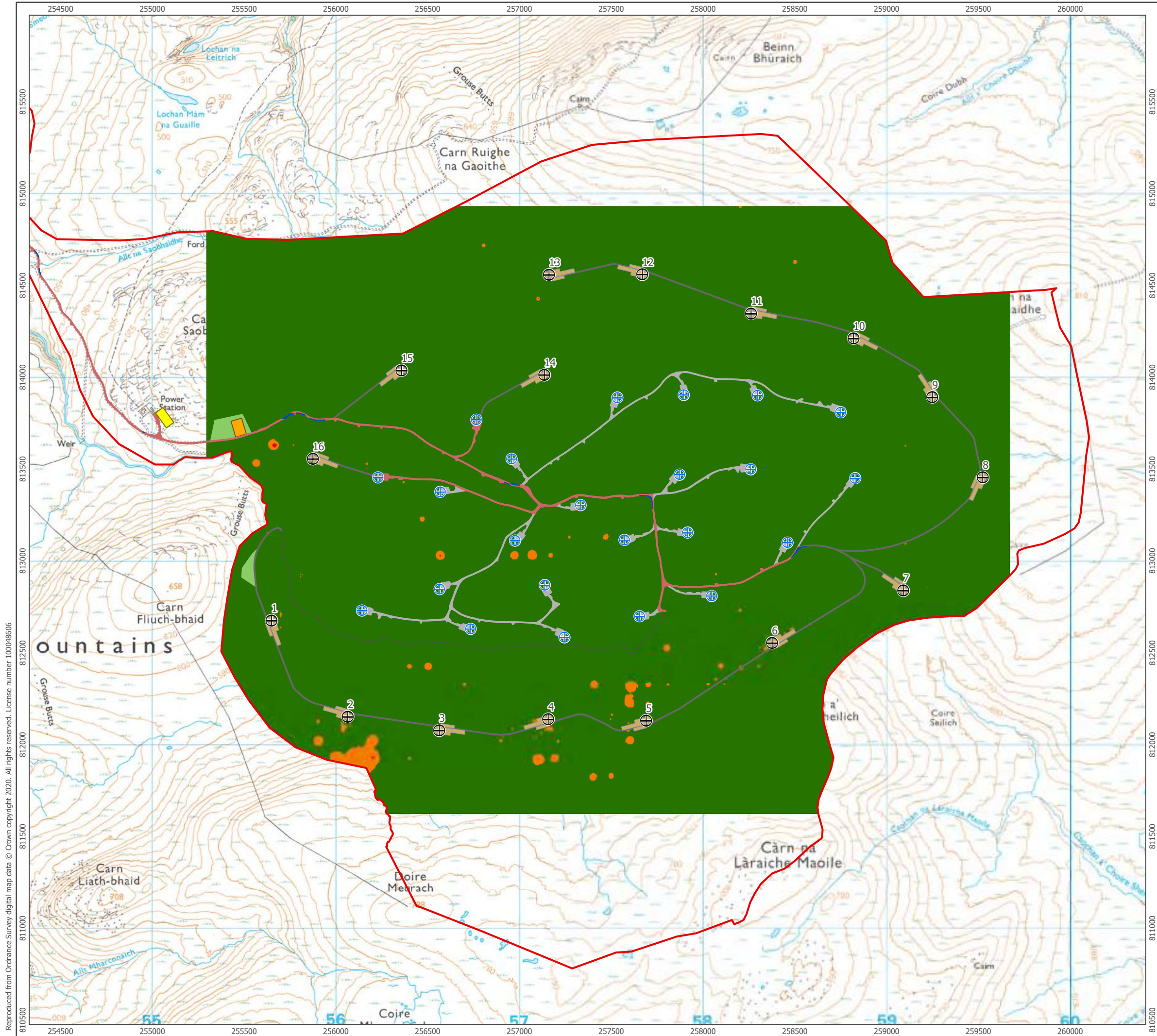
Figure 13.1.7

Corriegarth 2 Wind Farm

Peat Slide Risk Assessment

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P:\Projects\Engineering\Projects\3369 Corriegarth\3369 Corriegarth.aprx\3369-REP-064 Fig13.1.7 Slope Gradient



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Site Boundary

Proposed Turbine Location

Operational Corriegarth Wind Turbines

Existing Track (Use restricted to construction phase for access to borrow pit only)

Borrow Pit Extents

Construction Compound

Crane Hardstanding

Existing Tracks to be Utilised

Existing Wind Farm Tracks

Laydown Area

Proposed Access Tracks

Substation Compound

Track Widening Area

Factor of Safety

Low Risk

Moderate Risk

Low Risk

1:20,000 Scale @ A3

00.51 km

NORTH

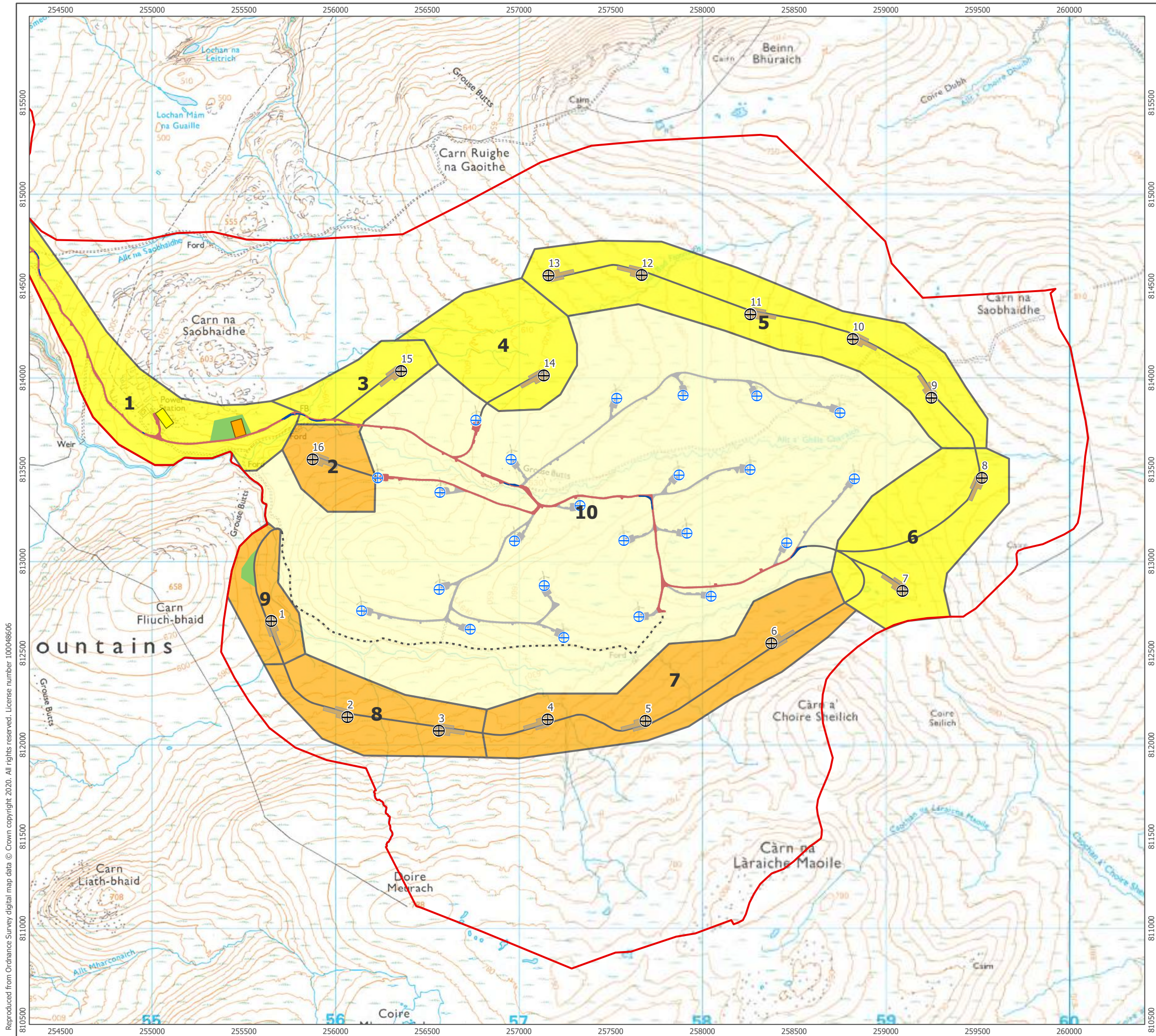
Produced By: BM	Ref: 3369-REP-065
Checked By: SC	Date: 10/09/2020

Factor of Safety Plan

Figure 13.1.8

Corriegarth 2 Wind Farm

Peat Slide Risk Assessment



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Site Boundary

Proposed Turbine Location

Operational Corriegarth Wind Turbines

Existing Track (Use restricted to construction phase for access to borrow pit only)

Borrow Pit Extents

Construction Compound

Crane Hardstanding

Existing Tracks to be Utilised

Existing Wind Farm Tracks

Laydown Area

Proposed Access Tracks

Substation Compound

Track Widening Area

Hazard Risk Zones

Very Low Risk

Low Risk

Moderate Risk

1:20,000 Scale @ A3

00.51 km

NORTH

Produced By: BM

Ref: 3369-REP-066

Checked By: SC

Date: 10/09/2020

Hazard Rank Zonation Plan

Figure 13.1.9

Corriegarth 2 Wind Farm

Peat Slide Risk Assessment

P:\Projects\Engineering\Projects\3369 Corriegarth\3369 Corriegarth.aprx\3369-REP-066 Fig13.1.9 Hazard Rank Zonation Plan

APPENDIX B - PHOTOGRAPHS

CORRIEGARTH SITE PHOTOS



57.190,-4.330

259290	813429
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57.185,-4.336

258909

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57.184,-4.338

258784

812778



57.184,-4.338

258784

812778



57.203,-4.347

258313

814911



57.203,-4.347

258313

814911



57.197,-4.358

257626

814266



57.198,-4.357

257690

814375

APPENDIX C - HAZARD RANK ASSESSMENT RECORDS

3369 - Corriegarth 2 Wind Farm - PSRA - Tabulated Peat Probe Data																					
ID	X	Y	SLOPE	Slope Co-efficient	PEAT DEPTH	Peat Co-efficient	Gen Substrate	Substrate Co-off.	Risk Rating Coefficient	Risk Rating Normalisation	Receptor	Receptor Co-off.	Distance	Receptor Dist Co-off.	Z Difference (remove +/-)	Receptor elevation Co-off	Impact Rating	Impact Rating Normalisation	Hazard Ranking		
1	292763.7	962878	5.7	4	0.6	2	R	1.5	12	2	Important Habitat	8	45.58	3	1.12	1	24	3	6	1 TO 4 Negligible	
2	292662.2	962782	4.7	4	0.9	2	G	1	8	2	Important Habitat	8	136.48	3	-11.37	1	24	3	6		
3	292660.7	962882	6.9	4	0.7	2	G	1	8	2	Important Habitat	8	37.66	3	-4.05	1	24	3	6		
4	292662.5	962980	13.2	6	0.8	2	C	2	24	3	Important Habitat	8	34.56	3	5.57	1	24	3	9		
5	292561.6	963181	14.4	6	0.6	2	G	1	12	2	Important Habitat	8	43.21	3	11.24	2	24	3	6		
6	292564.5	963084	18.4	8	0.2	1	C	2	16	3	Important Habitat	8	108.79	3	19.35	2	24	3	0	5 TO 10 Low	
7	292560.4	962982	13.0	6	0.4	1	R	1.5	9	2	Important Habitat	8	118.41	3	-5.11	1	24	3	6		
8	292563.2	962886	7.5	4	1	2	R	1.5	12	2	Important Habitat	8	97.11	3	5.88	1	24	3	6		
9	292561.6	962784	2.8	2	1	2	G	1	4	1	Important Habitat	8	52.59	3	1.19	1	24	3	3		
10	292559.8	962688	1.9	1	3.5	8	G	1	8	2	Minor Watercourse	6	78.62	3	3.85	1	18	3	6		
11	292463.8	962684	4.9	4	2	3	R	1	12	2	Minor Watercourse	6	7.05	4	0.59	1	24	3	6		
12	292462.8	962780	0.4	1	2	3	R	1.5	4.5	1	Important Habitat	8	3.01	4	-0.02	1	32	5	5		
13	292464.5	962879	2.9	2	1	2	G	1	4	1	Important Habitat	8	21.15	3	0.49	1	24	3	6		
14	292463.1	962979	4.2	4	1.2	3	G	1	12	2	Important Habitat	8	84.46	3	4.85	1	24	3	6		
15	292462.5	963080	5.7	4	1	2	G	1	8	2	Important Habitat	8	63.18	3	-3.36	1	24	3	6		
16	292463.5	963178	8.7	6	1	2	R	1.5	18	3	Important Habitat	8	1.73	4	-0.18	1	32	5	15		
17	292260.5	963185	3.5	2	3	3	G	1	6	2	Minor Watercourse	6	51.14	3	2.49	1	18	3	6		
18	292363.7	963283	9.0	6	0.4	1	G	1	6	2	Important Habitat	8	120.29	3	-5.48	1	24	3	6		
19	292366.6	963376	6.2	4	0.6	2	R	1.5	12	2	Minor Watercourse	6	155.97	3	12.10	2	18	3	6		
20	292361.9	963482	6.9	4	1.2	3	G	1	12	2	Minor Watercourse	6	62.47	3	5.17	1	18	3	6		
21	292261.1	963582	0.7	1	1.5	3	G	1	3	1	Important Habitat	8	1.78	4	-0.02	1	32	5	5		
22	292261.3	963480	5.2	4	0.1	1	R	1.5	6	2	Minor Watercourse	6	24.15	3	4.40	1	18	3	6		
23	292263.9	963383	5.8	4	0.7	2	G	1	8	2	Minor Watercourse	6	98.60	3	3.80	1	18	3	6		
24	292261.6	963282	3.5	2	2	3	G	1	6	2	Minor Watercourse	6	88.51	3	10.97	2	18	3	6		
25	292170.3	963288	25.1	8	0.8	2	R	1.5	24	3	Minor Watercourse	6	17.71	3	4.76	1	18	3	9		
26	292164.1	963380	3.0	2	0.5	1	R	1.5	3	1	Minor Watercourse	6	71.81	3	3.42	1	18	3	3		
27	292165.3	963483	8.2	6	0.4	1	G	1	6	2	Minor Watercourse	6	29.76	3	5.15	1	18	3	6		
28	292163.9	963581	6.8	4	0.6	2	G	1	8	2	Important Habitat	8	36.43	3	-1.28	1	24	3	6		
29	292060.1	963680	6.0	4	1.2	3	G	1	12	2	Important Habitat	8	38.91	3	4.06	1	24	3	6		
30	291963.3	963684	7.5	4	1.1	3	G	1	12	2	Important Habitat	8	2.04	4	-0.25	1	32	5	10		
31	291861.8	963684	10.0	6	1.2	3	G	1	18	3	Important Habitat	8	1.94	4	0.36	1	32	5	15		
32	291857.5	963584	8.5	6	0.6	2	G	1	12	2	Minor Watercourse	6	51.56	3	12.33	2	18	3	6		
33	291964.3	963581	6.0	4	1	1	C	2	8	3	Important Habitat	8	87.05	3	-5.88	1	24	3	6		
34	292063.3	963580	8.6	6	0.2	1	R	1.5	9	2	Important Habitat	8	91.21	3	-3.17	1	24	3	6		
35	292061.9	963484	4.0	2	1.2	3	G	1	6	2	Minor Watercourse	6	39.64	3	5.28	1	18	3	6		
36	292056.4	963382	5.8	4	0.7	2	G	1	8	2	Minor Watercourse	6	49.98	3	7.83	1	18	3	6		
37	292057.1	963288	16.7	8	0.3	1	R	1.5	12	2	Important Habitat	8	21.92	3	-5.49	1	24	3	6		
38	292363.4	963181	6.9	4	0.9	2	G	1	8	2	Important Habitat	8	86.86	3	-10.26	1	24	3	6		
39	292365.0	963092	3.4	2	0.9	2	G	1	4	1	Minor Watercourse	6	90.05	3	4.07	1	18	3	3		
40	292363.6	962986	1.7	1	4.1	8	G	1	4	1	Important Habitat	8	39.36	3	-0.79	1	24	3	6		
41	292359.7	962881	3.6	2	1	2	G	1	4	1	Important Habitat	8	5.83	4	-0.33	1	32	5	5		
42	292362.4	962786	2.5	2	1	2	C	2	8	2	Minor Watercourse	6	2.93	4	0.14	1	24	3	6		
43	292362.2	962681	4.1	4	0.6	2	R	1.5	12	2	Minor Watercourse	6	64.71	3	9.69	1	18	3	6		
44	292360.3	962582	8.7	6	0.6	2	G	1	12	2	Minor Watercourse	6	117.54	3	9.42	1	18	3	6		
45	292260.9	962581	3.0	2	0.6	2	R	1.5	6	2	Wind Turbine	6	66.17	3	3.04	1	18	3	6		
46	292261.8	962684	4.6	4	0.2	1	G	1	4	1	Wind Turbine	6	47.75	3	-2.67	1	18	3	3		
47	292262.0	962785	3.9	2	0.6	2	R	1.5	6	2	Important Habitat	8	2.37	4	-0.12	1	32	5	10		
48	292260.2	962879	5.6	4	0.5	1	G	1	4	1	Important Habitat	8	0.53	4	-0.03	1	32	5	5		
49	292262.0	962983	1.0	1	1.5	3	R	1.5	4.5	1	Minor Watercourse	6	46.93	3	1.85	1	18	3	3		
50	292263.1	963081	1.3	1	2.2	3	G	1	3	1	Minor Watercourse	6	11.99	3	0.23	1	18	3	3		
51	292162.4	963184	2.8	2	0.5	1	G	1	2	1	Important Habitat	8	2.43	4	-0.08	1	32	5	5		
52	292161.9	963082	1.8	1	2	3	R	1.5	4.5	1	Minor Watercourse	6	21.75	3	-0						

139	290903.4	962480	6.5	4	0.4	1	R	1.5	6	2	Important Habitat	8	33.21	3	-2.06	1	24	3	6	
140	290962.0	962579	3.0	2	0.2	1	G	1	2	1	Important Habitat	8	145.72	3	2.37	1	24	3	3	
141	291064.5	962581	6.9	4	0.2	1	G	1	4	1	Important Habitat	8	158.27	3	2.36	1	24	3	3	
142	291062.4	962681	4.9	4	0.4	1	G	1	4	1	Important Habitat	8	175.83	3	-18.98	1	24	3	3	
143	290961.6	962686	2.7	2	0.2	1	G	1	4	1	Minor Watercourse	6	106.96	3	13.31	2	18	3	3	
2	144	290961.9	962782	2.7	0.5	1	C	1.5	3	1	Minor Watercourse	6	86.81	3	13.15	2	18	3	2	
145	291063.4	962779	3.8	2	0.6	2	C	2	8	2	Wind Turbine	6	85.71	3	3.23	1	18	3	6	
146	291160.7	962780	4.0	4	0.8	2	R	1.5	12	2	Important Habitat	8	74.54	3	-6.38	1	24	3	6	
147	291262.3	962781	3.7	2	0.6	2	G	1	4	1	Important Habitat	8	2.83	4	0.20	1	32	5	5	
148	291361.0	962785	6.2	4	0.5	1	R	1.5	6	2	Minor Watercourse	6	44.45	3	3.42	1	18	3	3	
4	149	291466.4	962783	7.7	0.5	1	G	1	4	2	Minor Watercourse	6	41.33	3	8.43	1	18	3	3	
150	291459.2	962691	16.2	8	0.5	1	R	1.5	12	2	Minor Watercourse	6	20.25	3	2.93	1	18	3	6	
151	291261.4	962880	3.5	2	1.1	3	R	1.5	9	2	Important Habitat	8	11.75	3	-0.32	1	24	3	6	
152	291158.1	962879	6.7	4	0.4	1	R	1.5	6	2	Important Habitat	8	85.00	3	-6.71	1	24	3	6	
153	291065.4	962879	4.0	4	0.2	1	G	1	4	1	Wind Turbine	6	44.03	3	3.15	1	18	3	3	
154	290965.9	962876	2.8	2	0.5	1	C	2	8	1	Tracks or Paths	2	19.62	3	0.73	1	6	1	1	
155	290864.2	962878	4.8	4	0.7	2	G	1	8	2	Tracks or Paths	2	17.13	3	0.68	1	6	1	2	
156	290864.7	962986	7.2	4	0.3	1	G	1	4	1	Tracks or Paths	2	85.43	3	-1.02	1	6	1	1	
157	290962.1	962984	4.1	4	0.2	1	G	1	4	1	Tracks or Paths	2	93.94	3	3.58	1	6	1	1	
158	291063.7	962980	1.8	1	1	2	G	1	2	1	Minor Watercourse	6	81.27	3	-3.62	1	18	3	3	
159	291164.7	962982	6.2	4	0.5	1	G	1	4	1	Minor Watercourse	6	36.62	3	-0.46	1	18	3	3	
160	291164.6	963082	6.5	4	0.6	2	G	1	8	2	Important Habitat	8	1.58	4	-0.12	1	32	5	10	
161	291057.5	963084	3.3	2	0.3	1	G	1	2	1	Minor Watercourse	6	2.34	4	0.07	1	24	3	3	
162	290959.3	963084	2.7	2	0.6	2	G	1	4	1	Minor Watercourse	6	37.58	3	0.29	1	18	3	3	
163	290861.5	963085	6.2	4	0.6	2	G	1	8	2	Minor Watercourse	6	88.03	3	5.73	1	18	3	3	
164	290774.8	963180	6.4	4	0.3	1	R	1.5	6	2	Minor Watercourse	6	3.55	4	-0.03	1	24	3	6	
165	290862.6	963182	6.5	4	0.2	1	R	1.5	6	2	Minor Watercourse	6	4.33	1	0.47	1	24	3	6	
166	290963.7	963183	3.3	2	0.7	2	G	1	4	1	Minor Watercourse	6	10.55	3	-0.06	1	18	3	3	
167	291063.8	963185	9.3	6	0.3	1	R	1.5	9	2	Important Habitat	8	2.78	4	-0.02	1	32	5	10	
168	291163.8	963184	3.5	2	1.1	3	R	1.5	9	2	Important Habitat	8	1.82	4	-0.06	1	32	5	10	
169	291157.9	963285	0.5	1	1.2	3	G	1	3	1	Important Habitat	8	3.19	4	-0.02	1	32	5	5	
170	291166.9	963278	1.7	1	1	2	G	1	1	1	Important Habitat	8	1.73	4	-0.04	1	32	5	5	
171	291166.1	963481	1.4	1	0.8	2	G	1	2	1	Important Habitat	8	20.98	3	0.33	1	24	3	3	
172	291065.8	963481	6.7	4	0.4	1	G	1	4	1	Important Habitat	8	33.82	3	3.46	1	24	3	3	
173	290956.4	963485	2.3	2	0.9	2	G	1	4	1	Important Habitat	8	22.95	3	0.64	1	24	3	3	
174	290864.7	963486	6.8	4	0.4	1	R	1.5	6	2	Important Habitat	8	72.68	3	0.86	1	24	3	6	
4	175	290661.6	963482	6.2	0.5	1	G	1	4	1	Important Habitat	8	1.48	1	0.46	1	32	5	5	
176	290668.0	963585	4.8	4	0.6	2	R	1.5	12	2	Important Habitat	8	2.80	4	-0.23	1	32	5	10	
177	290562.3	963683	0.6	1	1.1	3	G	1	3	1	Important Habitat	8	2.10	4	-0.01	1	32	5	5	
178	290467.6	963779	0.6	1	1.1	3	G	1	3	1	Important Habitat	8	2.45	4	-0.03	1	32	5	5	
179	290472.3	963882	1.8	1	1	1	G	1	1	1	Important Habitat	8	7.11	4	0.20	1	32	5	5	
180	290461.5	963982	1.2	1	0.9	2	G	1	2	1	Important Habitat	8	1.72	4	0.02	1	32	5	5	
181	290563.6	963982	2.3	2	0.9	2	R	1.5	6	2	Important Habitat	8	1.99	4	0.08	1	32	5	10	
182	290561.6	963882	1.6	1	1.1	3	R	1.5	4.5	1	Important Habitat	8	1.58	4	0.01	1	32	5	5	
183	290564.5	963781	0.5	1	1	3	G	1	3	1	Important Habitat	8	1.99	4	0.02	1	32	5	5	
184	290666.4	963686	1.6	1	0.5	1	G	1	1	1	Important Habitat	8	2.77	4	0.07	1	32	5	5	
185	290661.7	963783	0.7	1	1.3	1	R	1.5	4.5	1	Important Habitat	8	1.49	4	0.00	1	32	5	5	
186	290665.4	963882	2.8	2	0.9	2	G	1	8	2	Important Habitat	8	0.84	4	0.04	1	32	5	5	
187	290666.2	963980	4.8	4	0.9	2	G	1	8	2	Important Habitat	8	2.26	4	-0.17	1	32	5	10	
188	290764.7	963981	6.4	4	0.6	2	R	1.5	12	2	Important Habitat	8	2.29	4	-0.09	1	32	5	10	
189	290763.5	963886	5.2	4	1.1	3	G	1	12	2	Important Habitat	8	2.57	4	-0.07	1	32	5	10	
190	290761.0	963782	7.3	4	0.4	1	R	1.5	6	2	Important Habitat	8	31.26	3	3.67	1	24	3	6	
6	191	290763.0	963682	9.3	0.5	1	G	1	4	2	Important Habitat	8	72.78	3	11.11	2	24	3	6	
192	290760.2	963583	11.3	6	0.4	1	R	1.5	6	2	Important Habitat	8	80.65	3	13.59	2	24	3	6	
193	290860.9	963579	7.2	4	0.4	1	R	1.5	6	2	Important Habitat	8	46.99	3	-4.11	1	24	3	6	
194	290867.6	963692	6.0	4	0.6	2	R	1.5	12	2	Important Habitat	8	40.98	3	-1.99	1	24	3	6	
195	290866.8	963790	3.7	2	0.5	1	G	1	2	1	Important Habitat	8	9.09	4	-0.52	1	32	5	5	
2	196	290860.8	963886	2	0.8	2	R	1.5	6	2	Important Habitat	8	2.46	4	0.10	1	32	5	10	
197	290863.7	963986	8.4	6	0.2	1	G	1	12	2	Important Habitat	8	2.49	4	-0.13	1	32	5	10	
198	290964.9	963980	5.7	4	0.7	2	G	1	8	2	Important Habitat	8	1.93	4	-0.05	1	32	5	10	
199	290962.5	963881	3.1	2	0.4	1	C	2	4	1	Important Habitat	8	19.32	3	0.82	1	24	3	3	
200	290965.3	963785	6.1	4	1.3	3	R	1.5	18	3	Important Habitat	8	2.32	4	0.18	1	32	5	15	
201	290963.6	963684	3.2	2	1.1	3	G	1	18	3	Important Habitat	8	1.88	4	-0.09	1	32	5	10	
202	290964.2	963583	4.8	4	0.9	2	G	1	8	2	Important Habitat	8	0.99	4	0.00	1	32	5	10	
203	291064.4	963588	2.1	2	0.5	1	R	1.5	3	1	Important Habitat	8	0.90	4	-0.03	1	32	5	5	
204	291063.6	963685	6.4	4	1.1	3	G	1	12	2	Important Habitat	8	2.51	4	-0.27	1	32	5	10	
205	291062.8	963781	4.2	4	0.9	2	G	1.5	12	2	Important Habitat	8	2.97	4	-0.14	1	32	5	10	
4	206	291063.8	963882	4	0.7	2	G	1	12	2	Important Habitat	8	23.59	3	0.53	1	24	3	6	
3.7	207	291156.6	963880	3.7	2	0.5	1	R	1	1	Important Habitat	8	98.87	3	5.73	1	24	3	3	
208	291159.7	963782	2.1	2	0.9	2	G	1	4	1	Important Habitat	8	49.27	3	-0.57	1	24	3	3	
209	291162.3	963681	2.3	2	2.1	3	R	1.5	9	2	Important Habitat	8	7.16	4	0.25	1	32	5	10	
210	291262.0	963582	1.7	1	2.6	3	G	1	4	1	Important Habitat	8	96.42	3	1.99	1	24	3	3	
211	291263.4	963783	2.1	2	1.5	2	G	1	4	1	Important Habitat	8	46.00	3	1.56	1	24	3	3	
1	212	291359.1	963687	1.5	1.7	3	R	1.5	4.5	1	Important Habitat	8	35.51	1	0.96	1	24	3	3	
213	291362.6	963584	8.2	6	0.8	2	G	1	12	2	Important Habitat	8	121.72	3	9.28	1	24	3	6	
214	291362.8	963485	9.7	6	0.9	2	G	1	12	2	Important Habitat	8	149.40	3	8.19	1	24	3	6	
215	291465.0	963482	6.1	4	1	2	G	1	8	2	Important Habitat	8	50.60	3	3.47	1	24	3	6	
1	216	291460.8	963587	5.8	4	0.7	2	R	1.5	12	2	Important Habitat	8	24.42	3	0.92	1	24	3	6
1	217	291461.7	963686	1.8	1	2	G	1	8	2	Important Habitat	8	1.75	3	-0.03	1	32	5	5	
218	291560.8	963685	2.7	2	0.6	2	R	1.5	6	2	Important Habitat	8	2.02	4	0.01	1	32	5	10	
219	291561.1	963581	4.7	4	2.6	3	G	1	12	2	Important Habitat	8	19.48	3	-1.43	1	24	3	6	
220	291563.0	963481	9.8	6	0.2	1	C	2	12	2	Important Habitat	8	19.30	3	1.38	1				

281	290662.8	962083	7.7	4	0.5	1	R	1.5	6	2	Important Habitat	8	45.09	3	8.09	1	24	3	6
282	290565.2	962083	0.6	1	2.3	3	R	1.5	4.5	1	Important Habitat	8	0.07	4	0.00	1	32	5	5
283	290458.5	962088	1.3	1	2.2	3	R	1.5	4.5	1	Important Habitat	8	1.73	4	-0.04	1	32	5	5
284	290368.1	962082	2.1	2	0.1	1	G	1	2	1	Important Habitat	8	61.39	3	-1.82	1	32	3	8
285	290263.5	962080	6.6	4	0.2	1	G	1	4	1	Tracks or Paths	2	3.84	4	0.36	1	2	2	1
2	286	290162.4	962082	2.3	1	2.3	1	1.5	6	1	Minor Watercourse	6	1.107	3	1.107	1	18	3	6
287	290059.5	962084	4.6	4	0.1	1	G	1	4	1	Minor Watercourse	6	55.54	3	3.17	1	18	3	3
288	289964.1	962077	4.9	4	0.2	1	G	1	4	1	Road	3	16.19	3	0.31	1	9	2	2
289	289962.3	962185	8.5	6	0.1	1	G	1	6	2	Minor Watercourse	6	8.20	4	0.51	1	24	3	6
290	290083.6	962182	1.4	1	0.1	1	G	1	1	1	Tracks or Paths	2	19.88	3	-0.38	1	6	1	1
2	291	290163.1	962186	3.4	2	1.5	1	1.5	3	1	Tracks or Paths	2	4.30	1	0.22	1	8	2	8
292	290269.9	962182	2.8	2	0.3	1	R	1.5	3	1	Tracks or Paths	2	14.89	3	-0.66	1	6	1	1
293	290362.5	962183	7.9	4	0.2	1	G	1	4	1	Tracks or Paths	2	26.52	3	-0.43	1	6	1	1
294	290463.6	962181	1.5	1	0.9	2	R	1.5	3	1	Important Habitat	8	13.85	3	-0.28	1	24	3	3
295	290562.4	962182	1.8	1	1.3	3	G	1	3	1	Important Habitat	8	2.48	4	0.07	1	32	5	5
296	290662.1	962183	7.2	4	0.2	1	G	1	4	1	Tracks or Paths	2	23.08	3	-2.90	1	6	1	1
297	290760.2	962181	12.5	6	0.8	2	G	1	12	2	Major Water	FALSE	38.57	2	13.40	2	0	1	2
298	290864.4	962178	8.1	6	1.3	3	G	1	18	3	Minor Watercourse	6	17.14	3	1.80	1	18	3	9
299	290962.3	962183	4.5	4	0.2	1	R	1.5	6	2	Important Habitat	8	35.33	3	-0.76	1	24	3	6
300	291062.6	962183	2.8	2	0.7	2	R	1.5	6	2	Important Habitat	8	82.77	3	1.35	1	24	3	6
301	291160.7	962181	6.0	4	0.5	1	G	1	6	1	Wind Turbine	8	80.51	3	-8.57	1	18	3	3
302	291263.0	962183	5.9	4	0.3	1	G	1	4	1	Important Habitat	8	16.69	3	-0.04	1	24	3	3
303	291357.7	962183	2.1	2	1.3	3	G	1	4	2	Important Habitat	8	48.39	3	0.69	1	24	3	6
304	291459.3	962178	6.9	4	1.3	3	G	1	12	2	Important Habitat	8	142.23	3	15.86	2	24	3	6
305	291563.9	962177	18.3	8	0.1	1	R	1	8	2	Wind Turbine	6	193.11	3	-7.10	1	18	3	6
306	291862.1	961983	2.7	2	1.2	3	R	1.5	9	2	Important Habitat	8	1.93	4	-0.09	1	32	5	10
307	291865.3	961982	5.9	4	5.9	1	G	1	4	2	Important Habitat	8	74.95	1	7.85	1	24	3	6
308	291765.9	961981	2.0	2	0.7	2	G	1	4	1	Wind Turbine	8	101.07	3	3.60	1	18	3	3
309	291662.8	961981	6.6	4	0.5	1	G	1	4	1	Wind Turbine	6	113.11	3	-5.29	1	18	3	3
310	291560.7	961988	12.8	6	0.7	2	G	1	12	2	Wind Turbine	8	187.25	3	-25.27	1	18	3	6
311	291462.1	961982	11.4	6	0.3	1	G	1	6	2	Important Habitat	8	195.69	3	22.01	2	24	3	6
312	291360.5	961983	7.4	4	7.4	1	G	1	4	1	Important Habitat	8	105.77	3	1.91	1	24	3	3
313	291264.8	961981	2.8	2	2.1	3	G	1	6	2	Important Habitat	8	12.46	3	0.44	1	24	3	6
314	291161.2	961982	2.0	2	0.5	1	R	1.5	3	1	Important Habitat	8	1.34	4	0.04	1	32	5	5
315	291061.6	961980	17.3	8	0.4	1	G	1	8	2	Important Habitat	8	13.86	3	-3.68	1	24	3	6
316	290958.7	961980	20.8	8	0.6	2	G	1	16	FALSE	Important Habitat	8	8.68	4	-2.05	1	32	5	0
317	290866.1	961975	4.1	4	0.7	1	G	1	4	1	Important Habitat	8	2.48	3	-0.18	1	32	5	3
318	290764.8	961978	8.2	6	0.4	1	G	1.5	9	2	Important Habitat	8	0.42	4	-0.06	1	32	5	10
319	290659.1	961982	7.5	4	0.3	1	R	1.5	6	2	Important Habitat	8	53.19	3	9.85	1	24	3	6
320	290559.9	961983	1.9	1	1.8	3	G	1	3	1	Important Habitat	8	0.37	4	-0.01	1	32	5	5
321	290460.7	961986	2.6	2	1	2	R	1.5	6	2	Important Habitat	8	2.52	4	0.06	1	32	5	10
322	290361.7	961982	1.6	1	0.8	2	G	1	16	2	Important Habitat	8	16.72	1	-0.27	1	24	3	3
323	290263.3	961981	7.2	4	0.2	1	R	1.5	6	1	Tracks or Paths	2	8.42	4	1.02	1	8	2	4
324	290166.5	961982	1.4	1	0.3	1	G	1	1	1	Important Habitat	8	1.45	4	0.04	1	32	5	5
325	290062.8	961980	3.5	2	0.2	1	G	1	2	1	Minor Watercourse	6	52.54	3	1.87	1	18	3	3
326	289963.0	961981	5.5	4	0.2	1	G	1	4	1	Road	3	45.57	3	-2.19	1	18	2	9
327	289959.2	961883	4.7	4	0.1	1	G	1	4	1	Road	6	100.14	3	11.79	2	9	2	2
328	290061.4	961881	1.7	1	0.2	1	G	1	1	1	Minor Watercourse	6	76.69	3	1.44	1	18	3	3
329	290166.4	961886	1.8	1	0.4	1	G	1	1	1	Important Habitat	8	13.95	3	-0.43	1	24	3	3
330	290267.0	961884	6.4	4	0.2	1	R	1.5	6	2	Tracks or Paths	2	16.87	3	1.84	1	6	1	2
331	290362.7	961879	0.3	1	0.4	1	G	1	1	1	Important Habitat	8	24.79	3	0.13	1	24	3	3
332	290458.5	961880	7.0	1	4.6	8	R	1.5	12	2	Important Habitat	8	2.31	4	0.00	1	32	5	10
333	290560.8	961882	10.1	4	0.3	1	G	1	4	1	Important Habitat	8	11.39	1	1.57	1	24	3	3
334	290667.6	961882	10.9	6	0.4	1	G	1	4	2	Tracks or Paths	2	77.22	3	-11.21	1	6	1	2
335	290759.2	961882	7.3	4	0.6	2	G	1	8	2	Tracks or Paths	2	12.39	3	0.46	1	6	1	2
336	290858.9	961888	2.7	2	1.2	3	G	1	6	2	Important Habitat	8	1.28	4	0.01	1	32	5	10
337	290957.0	961886	2.7	2	1	2	G	1	4	1	Important Habitat	8	2.39	4	0.07	1	32	5	5
338	291059.9	961878	22.7	8	0.5	1	G	1.5	16	FALSE	Minor Watercourse	6	14.75	3	5.34	1	18	3	3
339	291161.6	961882	4.9	4	1.3	3	G	1	18	3	Important Habitat	8	1.95	4	0.09	1	32	5	5
340	291256.6	961887	2.8	2	2.5	3	G	1	6	2	Important Habitat	8	1.55	4	0.08	1	32	5	10
341	291362.0	961880	5.7	4	0.4	1	G	1	4	1	Important Habitat	8	53.96	3	3.10	1	24	3	3
342	289643.1	962447	3.2	2	0.1	1	G	1	2	1	Major Water	FALSE	56.11	3	1.31	1	0	1	1
343	289962.0	961782	4.9	4	0.1	1	G	1	4	1	Important Habitat	8	67.93	3	-0.36	1	24	3	3
344	290061.6	961782	3.5	2	0.2	1	G	1	2	1	Important Habitat	8	70.68	3	-0.96	1	24	3	3
345	290160.8	961782	2.5	2	0.3	1	G	1	2	1	Important Habitat	8	1.64	4	0.07	1	32	5	5
346	290263.1	961782	3.9	2	0.1	1	G	1	2	1	Minor Watercourse	6	22.95	3	0.86	1	18	3	3
347	290360.4	961782	0.4	1	0.1	1	G	1	1	1	Important Habitat	8	24.85	3	0.09	1	24	3	3
348	290466.4	961786	1	1	0.9	5	G	1	8	2	Important Habitat	8	2.26	4	0.03	1	32	5	10
349	290563.0	961780	9.0	6	0.2	1	G	1	6	2	Important Habitat	8	33.72	3	8.27	1	24	3	6
350	290664.3	961786	12.5	6	0.2	1	G	1	6	2	Tracks or Paths	2	104.54	3	-14.91	1	6	1	2
351	290765.9	961786	5.0	4	0.1	1	G	1	4	1	Tracks or Paths	2	17.93	3	0.88	1	6	1	1
352	290860.6	961783	3.3	2	0.9	2	G	1	4	1	Important Habitat	8	0.57	4	-0.03	1	32	5	5
353	290963.9	961783	3.2	2	0.9	2	G	1	4	1	Important Habitat	8	4.82	4	0.24	1	32	5	5
354	291058.6	961784	5.0	4	1.5	6	R	1.5	12	2	Important Habitat	8	3.50	3	-0.25	1	24	3	3
355	291161.3	961782	12.4	6	0.8	2	G	1	12	2	Minor Watercourse	6	6.27	4	1.34	1	24	3	6
356	291261.9	961783	2.9	2	0.8	2	G	1	4	1	Important Habitat	8	1.74	4	0.08	1	32	5	5
357	291359.9	961785	3.8	2	1	2	R	1.5	6	2	Minor Watercourse	6	26.70	3	0.53	1	18	3	6
358	291461.6	961783	7.5	4	1.9	3	G	1	12	2	Important Habitat	8	82.46	3	7.10	1	24	3	6
359	291463.9	961885	7.0	4	0.3	1	G	1	7.0	1	Important Habitat	8	152.16	3	-15.31	2	24	3	3
360	291561.3	961881	12.2	6	0.6	1	G	1	12	2	Important Habitat	8	205.99	3	12.40	2	24	3	6
361	291566.2	961783	8.6	6	0.3	1	R	1.5	9	2	Important Habitat	8	112.20	3	7.30	1	24	3	6
362	291658.9	961776	12.4	6	0.7	2	G	1	12	2	Important Habitat	8	86.64	3	-0.70	1			

423	291361.4	961482	5.7	4	0.4	1	G	1	4	1	Important Habitat	8	1.49	4	0.15	1	32	5	5
424	291260.7	961481	8.1	6	0.4	1	G	1	6	1	Important Habitat	8	2.34	4	0.19	1	32	5	10
425	291140.2	961478	16.0	8	0.4	1	G	1	8	1	Minor Watercourse	6	25.08	3	10.83	2	18	3	6
426	291057.3	961478	6.3	4	0.4	1	G	1	4	1	Minor Watercourse	6	107.93	3	18.60	2	18	3	3
427	290960.6	961480	4.0	2	0.5	1	G	1	2	1	Important Habitat	8	117.46	3	-1.04	1	24	3	3
428	290862.0	961482	4.9	4	0.1	1	R	1.5	12	1	Important Habitat	8	1.89	3	1.39	1	24	3	4
429	290761.9	961481	2.4	2	0.4	1	R	1.5	3	1	Important Habitat	8	18.45	3	1.07	1	24	3	3
430	290664.6	961482	18.5	8	0.1	1	R	1.5	12	2	Important Habitat	8	95.22	3	-10.60	1	24	3	6
431	290563.9	961481	22.4	8	0.3	1	G	1	8	2	Important Habitat	8	120.68	3	25.62	2	24	3	6
432	290461.7	961487	13.5	6	0.5	1	G	1	6	1	Important Habitat	8	37.96	3	4.71	1	24	3	3
1	433	290361.0	961485	0.7	1	0.7	3	1.5	4.5	1	Important Habitat	8	1.78	3	0.01	1	32	5	5
1	434	290262.0	961479	0.8	1	2	3	1.5	4.5	1	Important Habitat	8	1.92	4	0.02	1	24	3	5
435	290163.6	961483	5.1	4	0.1	1	G	1	4	1	Important Habitat	8	17.23	3	1.88	1	24	3	3
436	290059.5	961482	1.2	1	0.2	1	G	1	1	1	Important Habitat	8	1.65	4	0.04	1	32	5	5
437	289959.0	961481	9.5	6	0.2	1	G	1	6	1	Important Habitat	8	31.29	3	4.38	1	24	3	6
438	289858.1	961477	4.9	4	0.1	1	R	1.5	6	1	Important Habitat	8	130.89	3	1.07	1	24	3	6
439	289761.3	961484	5.6	4	0.1	1	R	1.5	6	2	Road	3	75.00	3	11.39	2	9	2	4
440	289764.5	961581	9.6	6	0.2	1	G	1	6	2	Road	3	47.59	3	7.72	1	9	2	4
441	290663.3	961182	1.0	1	0.8	2	G	1	2	1	Important Habitat	8	2.15	4	-0.03	1	32	5	5
442	290561.4	961183	18.3	8	0.3	1	G	1	8	2	Important Habitat	8	59.36	3	-7.31	1	24	3	6
443	290565.6	961287	19.1	8	0.3	1	G	1	8	2	Important Habitat	8	96.69	3	-19.01	1	24	3	6
444	290461.8	961287	6.5	4	0.2	1	G	1	4	1	Important Habitat	8	77.39	3	12.61	2	24	3	3
445	290461.7	961184	6.8	4	0.4	1	R	1.5	6	2	Important Habitat	8	127.58	3	23.39	2	24	3	6
446	290365.2	961180	8.4	6	0.4	1	R	1.5	9	2	Important Habitat	8	74.98	3	6.59	1	24	3	6
447	290367.0	961182	9.0	6	0.4	1	G	1	6	2	Important Habitat	8	76.88	3	6.94	1	24	3	6
448	290363.0	961280	6.4	4	1.5	3	G	1.5	12	1	Important Habitat	8	2.88	4	-0.32	1	32	5	10
449	290261.9	961284	3.3	2	0.8	1	R	1.5	3	1	Important Habitat	8	11.77	3	0.43	1	24	3	3
450	290261.6	961183	1.1	1	1.8	3	G	1	3	1	Important Habitat	8	1.35	4	0.02	1	32	5	5
451	290163.0	961183	4.2	4	0.2	1	R	1.5	6	2	Important Habitat	8	27.66	3	2.26	1	24	3	6
452	290163.1	961283	2.3	2	0.1	1	R	1.5	3	1	Important Habitat	8	2.20	4	0.08	1	32	5	5
453	290063.3	961282	3.0	2	0.6	2	G	1	4	1	Important Habitat	8	6.23	4	-0.22	1	32	5	5
454	290055.9	961183	3.2	2	0.1	1	R	1.5	3	1	Important Habitat	8	0.76	4	0.07	1	32	5	5
455	289961.9	961289	14.6	6	0.4	1	G	1	6	1	Important Habitat	8	36.15	3	4.39	1	24	3	6
456	289963.1	961183	13.4	6	0.4	1	G	1	6	2	Important Habitat	8	2.16	4	-0.51	1	32	5	10
457	289859.3	961178	7.5	4	0.2	1	G	1	4	1	Road	3	5.17	3	5.17	1	9	2	2
458	289865.0	961281	14.9	6	0.1	1	R	1.5	9	2	Important Habitat	8	102.35	3	-4.86	1	24	3	6
459	289761.3	961281	12.9	6	0.1	1	R	1.5	9	2	Road	3	30.97	3	6.25	1	9	2	6
460	289883.0	961091	4.0	2	0.2	1	G	1	2	1	Road	3	30.64	3	3.73	1	9	2	2
461	289962.9	961083	15.3	8	0.1	1	G	1	8	2	Important Habitat	8	30.14	3	-5.95	1	24	3	6
462	290060.5	961082	10.5	6	0.1	1	G	1	6	2	Important Habitat	8	43.69	3	2.87	1	24	3	6
463	290157.6	961080	5.1	4	0.2	1	G	1	4	1	Important Habitat	8	53.01	3	0.38	1	24	3	3
464	290261.9	961082	5.0	4	0.2	1	R	1.5	9	2	Important Habitat	8	8.82	4	0.31	1	32	5	10
465	290362.6	961085	20.5	8	0.2	1	R	1.5	12	1	Important Habitat	8	89.27	3	13.65	2	24	3	6
466	290462.1	961080	3.8	2	0.5	1	R	1.5	3	1	Important Habitat	8	128.80	3	-23.19	1	24	3	3
467	290560.1	961082	13.2	6	0.2	1	R	1.5	9	2	Important Habitat	8	32.20	3	-5.17	1	24	3	6
468	290560.1	961082	13.2	6	0.2	1	R	1.5	9	2	Important Habitat	8	32.20	3	-5.17	1	24	3	6
469	290660.5	961084	5.8	4	0.3	1	G	1	4	1	Important Habitat	8	22.05	3	1.86	1	24	3	3
470	290754.9	961082	0.8	1	0.8	3	G	1	8	2	Important Habitat	8	1.48	4	0.03	1	32	5	10
471	290762.5	961183	1.0	1	3.7	8	R	1.5	12	2	Important Habitat	8	2.34	4	-0.01	1	32	5	10
472	290861.4	961182	0.8	1	1.6	3	G	1	3	1	Important Habitat	8	1.37	4	-0.01	1	32	5	5
473	290859.0	961079	2.5	2	1.1	3	G	1	6	2	Important Habitat	8	1.49	4	0.05	1	32	5	10
474	290963.8	961079	1.5	1	1.9	3	G	1	3	1	Important Habitat	8	1.95	4	0.04	1	32	5	5
475	290963.6	961180	5.1	4	0.6	1	R	1.5	6	2	Important Habitat	8	2.35	4	0.20	1	32	5	10
476	291064.7	961181	2.4	2	0.3	1	G	1	2	1	Important Habitat	8	2.44	4	-0.01	1	32	5	5
477	291063.3	961082	2.1	2	0.8	2	G	1	4	1	Important Habitat	8	2.31	4	0.08	1	32	5	5
478	291158.8	961079	1.2	1	5.3	8	G	1	8	2	Important Habitat	8	1.77	4	0.00	1	32	5	10
479	291160.3	961178	3.2	2	0.8	2	G	1	4	1	Important Habitat	8	0.41	4	0.01	1	32	5	5
480	291261.1	961179	0.6	2	0.6	2	G	1	4	1	Important Habitat	8	4.16	4	0.01	1	32	5	5
481	291261.1	961083	4.5	4	0.2	1	G	1	4	1	Important Habitat	8	24.12	3	1.38	1	24	3	3
482	291363.5	961084	4.9	4	0.4	1	R	1.5	6	2	Minor Watercourse	6	4.29	4	0.35	1	24	3	6
483	291363.3	961183	6.6	4	0.2	1	G	1	4	1	Minor Watercourse	6	54.06	3	5.00	1	18	3	3
484	291457.1	961183	7.5	4	1.5	3	G	1.5	12	2	Minor Watercourse	6	12.73	3	0.21	1	18	3	6
485	291460.9	961079	4.1	4	1.1	3	R	1.5	9	2	Important Habitat	8	1.22	4	0.07	1	32	5	10
486	291560.1	961083	3.3	2	1.8	3	R	1.5	9	2	Important Habitat	8	0.44	4	0.00	1	32	5	5
487	291561.4	961084	3.3	2	1.8	3	R	1.5	9	2	Important Habitat	8	1.66	4	0.04	1	32	5	10
488	291561.8	960982	5.1	4	0.7	2	G	1	8	2	Important Habitat	8	1.94	4	0.16	1	32	5	10
489	291560.4	960982	5.3	4	0.7	2	G	1	8	2	Important Habitat	8	1.13	4	0.02	1	32	5	10
490	291560.9	960984	6.0	4	0.9	2	G	1	8	2	Important Habitat	8	0.92	4	-0.05	1	32	5	10
491	291561.4	960782	4.2	4	0.8	2	R	1.5	12	1	Important Habitat	8	1.63	4	0.13	1	32	5	10
492	291562.3	960682	2.4	2	0.8	2	R	1.5	6	2	Important Habitat	8	2.35	4	0.01	1	32	5	10
493	291562.2	960581	1.4	1	1.1	3	R	1.5	4.5	1	Important Habitat	8	2.91	4	0.01	1	32	5	5
494	291661.4	960582	0.6	1	3.3	8	R	1.5	12	2	Important Habitat	8	1.89	4	0.02	1	32	5	10
495	291661.4	960683	1.3	1	3.8	8	G	1	8	2	Important Habitat	8	1.26	4	0.03	1	32	5	10
1	496	291655.5	960685	1.3	1	3.8	8	R	1.5	1	Important Habitat	8	1.85	4	-0.02	1	32	5	10
497	291660.1	960783	1.4	1	2.4	3	R	1.5	4.5	1	Important Habitat	8	0.16	4	0.00	1	32	5	5
498	291661.8	960881	1.4	1	2.5	3	R	1.5	4.5	1	Important Habitat	8	2.32	4	0.05	1	32	5	5
499	291760.5	960883	2.5	2	1.2	3	G	1	6	2	Important Habitat	8	0.39	4	0.02	1	32	5	10
500	291762.4	960781	2.2	2	2	2	R	1.5	6	2	Important Habitat	8	2.92	4	0.12	1	32	5	10
1	501	291761.0	960681	0.3	1	0.9	3	1.5	0.9	1	Important Habitat	8	1.93	4	0.09	1	32	5	5
502	291763.0	960584	1.2	1	2	3	G	1	3	1	Important Habitat	8	2.54	4	-0.03	1	32	5	5
503	291862.9	960984	8.4	6	0.3	1	G	1	6	2	Important Habitat	8	7.71	4	-0.64	1	32	5	10
504	291761.3	960984	2.0	1	0.6	2	G	1	2	1	Important Habitat	8	1.13	4					

565	290974.9	962793	3.3	2	0.5	1	R	1.5	3	1	Wind Turbine	6	82.72	3	-4.28	1	18	3	3
566	290984.4	962795	4.5	4	0.8	2	G	1	8	0	Wind Turbine	6	75.31	3	-3.58	1	18	3	6
567	290994.1	962795	5.0	4	1.1	3	G	1	12	2	Wind Turbine	6	70.17	3	-2.82	1	18	3	6
568	290998.8	962797	5.9	4	1.1	3	R	1.5	18	3	Wind Turbine	6	65.97	3	-2.37	1	18	3	18
569	291006.4	962795	6.1	4	0.3	1	G	1	4	1	Wind Turbine	6	67.27	3	-1.45	1	18	3	18
570	291014.9	962795	4.8	4	4.8	1	R	1.5	6	2	Wind Turbine	6	63.13	3	-0.75	1	18	3	6
571	291024.7	962795	4.8	4	0.4	1	R	1.5	6	2	Wind Turbine	6	62.44	3	0.05	1	18	3	6
572	291035.2	962794	4.7	4	0.5	1	G	1	4	1	Wind Turbine	6	63.18	3	0.90	1	18	3	3
573	291045.7	962795	4.7	4	0.4	1	G	1	4	1	Wind Turbine	6	65.12	3	1.74	1	18	3	3
574	290996.5	962743	6.7	4	0.1	1	G	1	4	1	Minor Watercourse	6	116.69	3	15.16	2	18	3	3
575	290996.5	962755	6.9	4	6.9	1	R	1	4	1	Wind Turbine	6	106.93	3	1.80	1	18	3	3
576	290995.4	962764	6.5	4	0.5	1	G	1	4	1	Wind Turbine	6	97.95	3	-2.91	1	18	3	3
577	290994.4	962774	5.9	4	0.6	2	R	1.5	12	2	Wind Turbine	6	88.82	3	-2.96	1	18	3	6
578	290994.6	962784	5.5	4	0.7	2	R	1.5	12	2	Wind Turbine	6	79.49	3	-2.85	1	18	3	6
579	290994.2	962805	4.7	4	1.5	3	G	1	12	4	Wind Turbine	6	61.58	3	-2.71	1	18	3	3
580	290994.5	962815	4.5	4	1	2	R	1.5	4	2	Wind Turbine	6	53.40	3	-2.69	1	18	3	3
581	290995.0	962824	4.5	4	1.2	3	R	1.5	18	3	Wind Turbine	6	46.00	3	-2.72	1	18	3	6
582	290994.7	962834	4.2	4	0.5	1	G	1	4	1	Wind Turbine	6	39.64	3	-2.82	1	18	3	3
583	290994.8	962844	3.2	2	0.3	1	G	1	2	1	Wind Turbine	6	34.84	3	-2.80	1	18	3	3
584	291416.1	963174	3.6	2	0.3	1	R	1.5	3	1	Wind Turbine	6	52.58	3	0.85	1	18	3	3
585	291414.8	963184	3.4	2	0.4	1	R	1	2	1	Wind Turbine	6	42.02	3	0.77	1	18	3	3
586	291415.9	963194	3.3	2	0.2	1	G	1	2	1	Wind Turbine	6	32.03	3	0.52	1	18	3	3
587	291414.4	963204	3.5	2	0.4	1	G	1	2	1	Wind Turbine	6	22.08	3	0.42	1	18	3	3
588	291415.0	963214	3.8	2	0.4	1	G	1	2	1	Wind Turbine	6	12.27	3	0.11	1	18	3	3
589	291414.7	963224	3.9	2	0.2	1	G	1	2	1	Wind Turbine	6	4.20	4	-0.16	1	24	3	3
590	291410.7	963226	3.9	2	0.2	1	R	1.5	3	1	Wind Turbine	6	0.33	4	0.02	1	24	3	3
591	291405.0	963224	3.9	2	0.4	1	R	1.5	4	1	Wind Turbine	6	6.22	1	0.41	1	24	3	3
592	291394.9	963225	3.5	2	0.2	1	R	1.5	3	1	Wind Turbine	6	16.17	3	1.00	1	18	3	3
593	291385.3	963225	3.0	2	0.2	1	G	1	2	1	Wind Turbine	6	25.72	3	1.13	1	18	3	3
594	291375.0	963224	4.8	4	0.3	1	G	1	4	1	Wind Turbine	6	36.02	3	0.33	1	18	3	3
595	291365.1	963225	4.8	4	0.2	1	R	1.5	6	2	Wind Turbine	6	45.97	3	-0.47	1	18	3	6
596	291414.6	963274	3.1	2	0.9	2	R	1.5	4	1	Wind Turbine	6	47.95	3	-0.52	1	18	3	3
597	291415.3	963264	2.1	2	0.5	1	G	1	2	1	Wind Turbine	6	38.57	3	-0.58	1	18	3	3
598	291414.9	963255	2.1	2	0.7	2	G	1	4	1	Wind Turbine	6	28.95	3	-0.61	1	18	3	3
599	291415.3	963245	2.2	2	0.4	1	G	1	2	1	Wind Turbine	6	19.89	3	-0.66	1	18	3	3
600	291414.9	963234	3.5	2	0.5	1	G	1	2	1	Wind Turbine	6	9.27	4	-0.51	1	24	3	3
601	291424.6	963225	3.7	2	0.4	1	R	1.5	3	1	Wind Turbine	6	13.70	3	-0.78	1	18	3	3
602	291435.4	963224	2.4	2	0.5	1	G	1	2	1	Wind Turbine	6	24.54	3	-1.29	1	18	3	3
603	291444.7	963225	2.2	2	1	2	G	1	4	1	Wind Turbine	6	33.74	3	-1.59	1	18	3	3
604	291454.5	963225	2.5	2	1	2	R	1.5	6	2	Wind Turbine	6	43.56	3	-1.89	1	18	3	6
605	291464.8	963223	2.7	2	1	2	G	1	4	1	Important Habitat	8	42.87	3	0.53	1	24	3	3
606	291944.8	962984	1.8	1	0.9	2	R	1	0.9	1	Wind Turbine	6	98.38	3	-2.64	1	18	3	3
607	291955.4	962984	1.8	1	0.7	2	G	1	2	1	Wind Turbine	6	93.85	3	-2.66	1	18	3	3
608	291965.1	962984	1.8	1	0.6	2	G	1	2	1	Wind Turbine	6	90.82	3	-2.69	1	18	3	3
609	291974.7	962984	1.7	1	0.5	1	G	1	1	1	Wind Turbine	6	88.26	3	-2.67	1	18	3	3
610	291984.7	962984	1.3	1	1	2	G	1	2	1	Wind Turbine	6	86.47	3	-2.65	1	18	3	3
611	291992.8	962988	1.1	1	0.9	2	G	1	2	1	Wind Turbine	6	90.04	3	-2.79	1	18	3	3
612	291994.9	962984	1.1	1	1	2	G	1	2	1	Wind Turbine	6	86.30	3	-2.74	1	18	3	3
613	292005.0	962984	1.4	1	0.9	2	G	1	2	1	Wind Turbine	6	87.11	3	-2.85	1	18	3	3
614	292014.8	962984	1.7	1	0.9	2	G	1	2	1	Important Habitat	8	82.62	3	3.83	1	24	3	3
615	292025.1	962984	1.9	1	0.4	1	G	1	1	1	Important Habitat	8	72.54	3	3.59	1	24	3	3
616	292034.6	962984	2.2	2	0.5	1	G	1	2	1	Important Habitat	8	63.46	3	3.35	1	24	3	3
617	291995.4	963034	1.9	1	0.8	2	R	1.5	1	1	Important Habitat	8	87.03	3	3.54	1	24	3	3
618	291994.5	963025	1.9	1	1	2	G	1	2	1	Important Habitat	8	90.33	3	3.84	1	24	3	3
619	291995.6	963015	1.9	1	0.6	2	G	1	2	1	Important Habitat	8	92.67	3	3.64	1	24	3	3
620	291994.9	963004	1.7	1	0.5	1	G	1	1	1	Important Habitat	8	96.32	3	3.56	1	24	3	3
621	291994.8	962995	1.3	1	0.8	2	R	1.5	3	1	Wind Turbine	6	97.43	3	-2.93	1	18	3	3
622	291995.4	962974	1.2	1	0.8	2	R	1.5	1.5	1	Wind Turbine	6	75.86	3	-2.58	1	18	3	3
623	291994.9	962965	1.6	1	0.5	1	R	1.5	1.5	1	Wind Turbine	6	66.62	3	-2.36	1	18	3	3
624	291994.4	962954	1.6	1	0.6	2	R	1.5	3	1	Wind Turbine	6	56.48	3	-2.10	1	18	3	3
625	291995.1	962944	1.6	1	0.7	2	G	1	2	1	Wind Turbine	6	45.60	3	-1.82	1	18	3	3
626	291995.3	962935	1.6	1	0.6	2	G	1	2	1	Wind Turbine	6	36.84	3	-1.59	1	18	3	3
627	292125.1	962615	3.2	2	1.5	3	R	1.5	4	1	Wind Turbine	6	116.46	3	1.40	1	18	3	3
628	292135.1	962614	3.3	2	0.8	2	G	1	4	1	Wind Turbine	6	107.05	3	1.35	1	18	3	3
629	292145.3	962614	3.3	2	0.8	2	R	1.5	6	2	Wind Turbine	6	97.03	3	1.35	1	18	3	6
630	292155.4	962614	3.1	2	1.2	3	R	1	6	2	Wind Turbine	6	87.43	3	1.38	1	18	3	6
631	292164.5	962614	2.9	2	1.2	3	G	1	6	2	Wind Turbine	6	78.84	3	1.38	1	18	3	6
632	292175.4	962614	2.9	2	1.2	3	R	1	6	2	Wind Turbine	6	69.01	3	1.41	1	18	3	6
633	292183.9	962615	2.8	2	1.3	3	G	1	6	2	Wind Turbine	6	60.89	3	1.36	1	18	3	6
634	292194.4	962616	2.8	2	0.9	2	R	1.5	6	2	Wind Turbine	6	51.46	3	1.34	1	18	3	6
635	292205.3	962615	2.8	2	0.5	1	G	1	2	1	Wind Turbine	6	43.34	3	1.39	1	18	3	3
636	292215.0	962614	2.8	2	0.4	1	G	1	2	1	Wind Turbine	6	36.71	3	1.41	1	18	3	3
637	292224.8	962614	2.8	2	0.4	1	G	1	2	1	Wind Turbine	6	31.90	3	1.43	1	18	3	3
638	292234.9	962614	2.8	2	1.4	2	R	1.5	4	1	Wind Turbine	6	143.20	3	1.42	1	18	3	3
639	292185.0	962664	4.3	4	1.1	3	G	1	12	2	Wind Turbine	6	57.19	3	-1.74	1	18	3	6
640	292184.5	962655	4.2	4	1.5	3	G	1	12	2	Wind Turbine	6	54.73	3	-1.01	1	18	3	6
641	292185.1	962645	3.6	2	1.5	3	G	1	6	2	Wind Turbine	6	52.93	3	-0.33	1	18	3	6
642	292185.4	962635	3.5	2	1.8	3	R	1.5	9	2	Wind Turbine	6	53.31	3	0.29	1	18	3	6
643	292184.9	962625	3.1	2	1.7	3	R	1	6	2	Wind Turbine	6	56.07	3	0.86	1	18	3	6
644	292185.1	962604	2.8	2	1.4	3	G	1	6	2	Wind Turbine	6	65.50	3	1.89	1	18	3	6
645	292184.4	962595	2.8	2	1.3	3	R	1.5	9	2	Wind Turbine	6	71.93	3	2.35	1	18	3	6
646	292184.7	962584	2.8	2	1.2	3	G	1	6</										

707	291445.1	962794	11.4	6	0.5	1	R	1.5	9	2	Minor Watercourse	6	27.31	3	5.57	1	18	3	6
708	291436.0	962794	10.2	6	0.4	1	R	1.5	9	2	Minor Watercourse	6	19.14	3	3.82	1	18	3	6
709	291425.7	962794	11.5	6	0.4	1	G	1	6	2	Minor Watercourse	6	10.51	3	2.05	1	18	3	6
710	291414.9	962794	9.8	6	1.2	3	G	1	18	3	Minor Watercourse	6	1.02	4	0.08	1	24	3	9
711	291404.8	962794	2.9	2	2.4	3	G	1	6	2	Minor Watercourse	6	5.55	4	0.07	1	24	3	9
712	290724.9	961904	10.8	6	0.3	1	G	1	6	2	Tracks or Paths	2	15.70	1	2.14	1	6	2	4
713	290735.2	961904	11.5	6	0.3	1	R	1.5	9	2	Tracks or Paths	2	6.24	4	-0.25	1	8	2	4
714	290744.5	961904	10.3	6	0.2	1	G	1	6	2	Tracks or Paths	2	5.82	4	1.12	1	8	2	4
715	290755.1	961905	11.0	6	0.2	1	R	1.5	9	2	Tracks or Paths	2	15.19	3	-0.04	1	6	1	4
716	290744.8	961905	8.9	6	0.4	1	G	1	6	2	Important Habitat	8	10.52	3	-1.08	1	24	3	6
717	290774.0	961901	4.6	4	4.6	1	R	1.5	4	2	Important Habitat	8	2.31	4	0.04	1	32	5	5
718	290775.3	961904	4.5	4	0.4	1	G	1	4	1	Important Habitat	8	1.37	4	-0.03	1	32	5	5
719	290775.1	961895	5.2	4	0.3	1	G	1	4	1	Important Habitat	8	5.33	4	-0.50	1	32	5	5
720	290774.4	961885	6.4	4	0.4	1	G	1	4	1	Important Habitat	8	5.99	4	-0.63	1	32	5	5
721	290775.3	961875	6.6	4	0.2	1	G	1	4	1	Important Habitat	8	5.15	4	-0.60	1	32	5	5
722	290775.1	961865	6.3	4	0.4	1	R	1.5	4	2	Important Habitat	8	6.04	4	-0.41	1	32	5	5
723	290775.2	961855	4.5	4	0.6	2	G	1	8	2	Important Habitat	8	10.24	3	-0.58	1	24	3	6
724	290774.9	961914	5.4	4	0.3	1	G	1	4	1	Important Habitat	8	0.99	4	-0.06	1	32	5	5
725	290775.2	961924	5.7	4	0.2	1	G	1	4	1	Important Habitat	8	0.94	4	-0.03	1	32	5	5
726	290775.1	961935	6.0	4	0.3	1	G	1	4	1	Important Habitat	8	1.56	4	-0.07	1	32	5	5
727	290775.3	961944	6.0	4	0.4	1	R	1.5	4	2	Important Habitat	8	1.21	4	-0.03	1	32	5	5
728	290774.7	961954	5.9	4	0.4	1	G	1	4	1	Important Habitat	8	1.33	4	-0.10	1	32	5	5
729	290785.0	961904	4.0	4	0.4	1	G	1	4	1	Important Habitat	8	1.29	4	-0.03	1	32	5	5
730	290795.1	961905	4.8	4	0.4	1	G	1	4	1	Important Habitat	8	1.74	4	-0.08	1	32	5	5
731	290805.0	961904	4.6	4	0.4	1	G	1	4	1	Important Habitat	8	1.33	4	-0.10	1	32	5	5
732	290815.5	961904	4.0	2	0.4	1	G	1	4	1	Important Habitat	8	1.12	4	-0.08	1	32	5	5
733	290824.5	961905	3.5	2	0.2	1	G	1	2	1	Important Habitat	8	1.75	1	0.06	1	32	5	5
734	291175.3	961765	16.6	8	0.5	1	G	1	8	2	Important Habitat	8	5.33	4	-1.35	1	32	5	10
735	291185.0	961765	5.5	4	0.5	1	G	1	4	1	Important Habitat	8	1.94	4	0.02	1	32	5	5
736	291195.3	961765	3.1	2	0.5	1	G	1	2	1	Important Habitat	8	1.73	4	0.02	1	32	5	5
737	291205.3	961765	3.1	2	0.7	2	G	1	4	1	Important Habitat	8	1.81	4	0.02	1	32	5	5
738	291215.4	961764	3.4	2	1	2	G	1	4	1	Important Habitat	8	0.78	4	0.01	1	32	5	5
739	291224.9	961764	3.8	2	1.1	3	G	1	6	2	Important Habitat	8	1.09	4	-0.04	1	32	5	10
740	291228.1	961765	4.1	4	1	2	G	1	8	2	Important Habitat	8	2.88	4	-0.21	1	32	5	10
741	291225.1	961774	3.3	2	0.5	1	G	1	2	1	Important Habitat	8	0.87	4	0.00	1	32	5	5
742	291224.8	961784	3.4	2	0.3	1	G	1	2	1	Important Habitat	8	1.02	4	-0.02	1	32	5	5
743	291224.6	961794	3.4	2	1	2	G	1	4	1	Important Habitat	8	1.06	4	-0.03	1	32	5	5
744	291224.4	961805	3.4	2	1.5	3	G	1	6	2	Important Habitat	8	1.65	4	-0.04	1	32	5	10
745	291224.7	961814	3.4	2	2.5	3	G	1	6	2	Important Habitat	8	1.42	4	-0.02	1	32	5	10
746	291224.8	961754	4.3	4	0.5	1	G	1	4	1	Important Habitat	8	0.88	4	-0.05	1	32	5	5
747	291225.0	961744	4.3	4	0.4	1	G	1	4	1	Important Habitat	8	1.33	4	-0.05	1	32	5	5
748	291225.2	961734	3.9	2	0.3	1	G	1	3	1	Important Habitat	8	1.26	4	-0.03	1	32	5	5
749	291225.7	961725	4.6	4	0.3	1	G	1	4	1	Important Habitat	8	1.53	4	0.11	1	32	5	5
750	291224.4	961714	5.3	4	0.1	1	G	1	4	1	Important Habitat	8	1.31	4	-0.01	1	32	5	5
751	291234.4	961764	5.1	4	1	2	G	1	8	2	Important Habitat	8	1.51	4	-0.12	1	32	5	10
752	291244.7	961764	3.9	2	0.3	1	G	1	2	1	Important Habitat	8	1.34	4	-0.05	1	32	5	5
753	291254.5	961764	2.8	2	0.5	1	G	1	4	1	Important Habitat	8	1.31	4	-0.06	1	32	5	5
754	291265.0	961765	2.7	2	1	2	G	1	4	1	Important Habitat	8	1.85	1	0.06	1	32	5	5
755	291275.4	961765	2.5	2	1.4	3	G	1	6	2	Important Habitat	8	1.47	4	-0.03	1	32	5	10
756	291615.3	961654	9.2	6	0.3	1	R	1.5	9	2	Wind Turbine	6	17.43	3	-0.47	1	18	3	6
757	291624.7	961654	9.5	6	0.3	1	G	1	6	2	Wind Turbine	6	22.32	3	1.09	1	18	3	6
758	291635.4	961654	8.2	6	0.4	1	G	1	6	2	Wind Turbine	6	30.57	3	2.79	1	18	3	6
759	291645.0	961654	7.7	4	1.5	2	G	1	12	2	Important Habitat	8	31.36	3	3.75	1	24	3	6
760	291654.8	961655	6.9	4	0.6	2	R	1	8	2	Important Habitat	8	34.97	3	5.05	1	24	3	6
761	291665.1	961655	4.3	4	0.5	1	G	1	4	1	Important Habitat	8	25.16	3	-0.42	1	24	3	3
762	291670.0	961659	3.4	2	1	2	G	1	4	1	Important Habitat	8	20.26	3	-0.41	1	24	3	3
763	291675.3	961655	3.0	2	0.8	2	G	1	4	1	Important Habitat	8	15.04	3	0.13	1	24	3	3
764	291684.6	961654	1.9	1	1.9	3	G	1	3	1	Important Habitat	8	5.74	4	0.27	1	32	5	5
765	291695.3	961654	1.8	1	2	3	G	1	3	1	Important Habitat	8	1.32	4	0.03	1	24	3	3
766	291705.3	961654	1.9	1	5	8	G	1	8	2	Important Habitat	8	1.29	4	0.03	1	32	5	10
767	291715.1	961654	1.8	1	1.8	3	G	1	3	1	Important Habitat	8	1.09	4	0.02	1	32	5	5
768	291665.0	961604	4.3	4	1	2	R	1.5	12	2	Important Habitat	8	1.00	4	0.01	1	32	5	5
769	291665.1	961614	6.9	4	0.5	1	G	1	4	1	Important Habitat	8	1.29	4	0.08	1	32	5	10
770	291665.6	961625	10.9	6	0.5	1	G	1	6	2	Important Habitat	8	11.62	3	1.50	1	24	3	6
771	291664.6	961634	9.2	6	0.3	1	G	1	6	2	Important Habitat	8	21.32	3	2.58	1	24	3	6
772	291664.9	961644	8.0	4	0.4	1	G	1	4	1	Important Habitat	8	25.31	3	-0.68	1	24	3	3
773	291665.8	961665	3.8	2	1.4	3	G	1	6	2	Important Habitat	8	24.47	3	-0.93	1	24	3	6
774	291665.0	961674	3.7	2	1.5	3	G	1	6	2	Important Habitat	8	25.93	3	-1.19	1	24	3	6
775	291664.6	961684	2.9	2	1.5	2	R	1.5	9	2	Important Habitat	8	30.24	3	1.25	1	24	3	6
776	291665.2	961695	3.0	2	1.5	3	G	1	6	2	Important Habitat	8	32.13	3	-1.25	1	24	3	6
777	291665.3	961704	4.5	4	0.4	1	R	1.5	6	2	Important Habitat	8	36.73	3	-1.02	1	24	3	6
778	291225.3	962174	7.6	4	0.2	1	G	1	4	1	Wind Turbine	6	29.14	3	-3.23	1	18	3	3
779	291224.9	962184	7.4	4	0.2	1	G	1	4	1	Wind Turbine	6	21.33	3	-2.45	1	18	3	3
780	291225.1	962194	7.1	4	0.1	1	G	1	4	1	Wind Turbine	6	15.01	1	1.63	1	18	3	3
781	291225.5	962204	6.7	4	0.3	1	G	1	4	1	Wind Turbine	6	14.25	3	-0.81	1	18	3	3
782	291225.0	962214	6.1	4	0.4	1	G	1	4	1	Wind Turbine	6	20.16	3	-0.47	1	18	3	3
783	291223.8	962220	7.0	4	0.3	1	R	1.5	6	2	Wind Turbine	6	25.18	3	-0.71	1	18	3	6
784	291225.1	962224	6.7	4	0.2	1	G	1	4	1	Important Habitat	8	25.76	3	-1.74	1	24	3	3
785	291225.4	962234	5.9	4	0.8	2	G	1	8	2	Important Habitat	8	29.51	3	-1.78	1	24	3	6
786	291225.0	962244	5.1	4	0.9	2	G	1	8	2	Important Habitat	8	34.28	3	-1.90	1	24	3	6
787	291225.6	962254	5.7	4	0.4	1	R	1.5	6	2	Important Habitat	8	39.53	3	-1.71	1	24	3	6
788	291225.4	962264	6.1	4	0.3	1	G	1	4	1	Important Habitat	8	39.85	3	-2.41	1	24	3	3
789	291275.1	962224	4.0	2	0.8	2													

849	291267.1	961821	3.2	2	0.4	1	G	1	2	1	Important Habitat	8	2.52	4	-0.06	1	32	5	5
850	291277.6	961882	2.9	2	1.1	3	R	1.5	9	2	Important Habitat	8	2.42	4	0.11	1	32	5	10
851	291302.3	961890	2.2	2	0.2	1	G	1	2	1	Important Habitat	8	18.71	3	0.79	1	24	3	3
852	291293.4	961929	1.9	1	1.6	3	G	1	3	1	Important Habitat	8	49.80	3	0.22	1	24	3	3
853	291276.0	961929	1.9	1	2.1	3	R	1.5	4.5	3	Important Habitat	8	41.56	3	0.85	1	24	3	3
854	291628.8	961720	7.1	4	1.3	3	R	1.5	1.3	2	Wind Turbine	6	5.08	3	1.3	1	18	3	3
855	291631.0	961711	6.3	4	0.1	1	G	1	4	1	Wind Turbine	6	44.92	3	5.39	1	18	3	3
856	291630.7	961701	6.5	4	0.1	1	G	1	4	1	Wind Turbine	6	36.07	3	5.67	1	18	3	3
857	291628.8	961690	7.5	4	0.1	1	G	1	4	1	Wind Turbine	6	26.75	3	4.20	1	18	3	3
858	291632.0	961675	8.6	6	0.5	1	G	1	6	2	Wind Turbine	6	22.31	3	3.33	1	18	3	3
859	291636.9	961661	8.6	6	0.4	1	G	1	6	2	Wind Turbine	6	28.72	3	2.17	1	18	3	3
860	291628.5	961639	10.1	6	0.2	1	G	1	6	2	Important Habitat	8	17.16	3	0.76	1	24	3	6
861	291630.5	961627	7.2	4	0.3	1	R	1.5	6	2	Important Habitat	8	6.12	4	-0.36	1	32	5	10
862	291629.8	961618	5.3	4	0.5	1	R	1.5	6	2	Important Habitat	8	0.39	4	-0.03	1	32	5	10
863	291584.2	961671	6.9	4	0.5	1	G	1	4	1	Wind Turbine	6	25.80	3	-3.07	1	18	3	3
864	291593.2	961671	7.0	4	0.5	1	R	1.5	7.0	2	Wind Turbine	6	16.81	3	-2.15	1	18	3	3
865	291601.2	961671	8.1	6	0.4	1	G	1	6	2	Wind Turbine	6	8.84	4	-1.24	1	24	3	6
866	291612.1	961670	9.3	6	0.2	1	R	1.5	9	2	Wind Turbine	6	2.59	4	0.19	1	24	3	6
867	291621.3	961670	9.0	6	0.3	1	G	1	6	2	Wind Turbine	6	11.33	3	1.55	1	18	3	6
868	291642.5	961670	7.1	4	0.6	2	R	1.5	12	2	Wind Turbine	6	32.53	3	4.29	1	18	3	6
869	291652.9	961670	3.7	2	1	1	G	1	4	1	Important Habitat	8	37.38	3	-1.92	1	24	3	3
870	291625.0	961738	7.2	4	0.1	2	R	1	6	1	Wind Turbine	6	68.67	3	5.09	1	18	3	3
871	291610.5	961734	9.1	6	0.5	1	G	1	6	2	Wind Turbine	6	62.59	3	2.85	1	18	3	6
872	291581.0	961802	8.0	4	0.4	1	R	1.5	6	2	Wind Turbine	6	134.06	3	0.57	1	18	3	6
873	291560.5	961794	8.8	6	0.5	1	G	1	6	2	Important Habitat	8	120.71	3	6.91	1	24	3	3
874	291582.2	961736	7.7	4	0.4	1	G	1	4	1	Wind Turbine	6	70.75	3	-0.91	1	18	3	3
875	291569.9	961733	5.1	4	0.5	1	R	1	4	1	Important Habitat	8	70.99	3	1.703	1	24	3	3
876	291760.7	962040	4.6	4	1	2	R	1.5	12	2	Wind Turbine	6	48.12	3	1.19	1	18	3	3
877	291758.4	962053	4.1	4	0.6	2	R	1.5	12	2	Wind Turbine	6	37.90	3	0.41	1	18	3	6
878	291756.8	962065	4.2	4	0.6	2	G	1	8	2	Wind Turbine	6	31.32	3	-0.19	1	18	3	6
879	291774.3	962070	4.9	4	0.9	2	G	1	8	2	Wind Turbine	6	47.52	3	-1.31	1	18	3	6
880	291734.8	962065	4.2	4	0.5	2	G	1.5	6	2	Wind Turbine	6	11.69	3	0.50	1	18	3	6
881	291717.1	962091	2.2	2	1.1	3	G	1	6	2	Wind Turbine	6	19.42	3	-1.16	1	18	3	6
882	291730.9	962091	3.9	2	0.5	1	G	1	2	1	Wind Turbine	6	17.36	3	-1.14	1	18	3	3
883	291740.7	962093	4.9	4	0.5	1	G	1	4	1	Wind Turbine	6	23.57	3	-1.65	1	18	3	3
884	291752.6	962095	4.9	4	0.7	2	R	1.5	12	2	Wind Turbine	6	33.00	3	-2.23	1	18	3	6
885	291754.6	962088	5.0	4	0.6	1	G	1	6	2	Wind Turbine	6	31.09	3	1.90	1	18	3	6
886	291759.6	962092	5.0	4	0.8	2	G	1	8	2	Wind Turbine	6	37.12	3	-2.28	1	18	3	6
887	291770.0	962092	5.2	4	0.9	2	R	1.5	12	2	Wind Turbine	6	46.53	3	-2.87	1	18	3	6
888	291779.9	962091	5.5	4	0.8	2	G	1	8	2	Wind Turbine	6	55.72	3	-3.47	1	18	3	6
889	291790.6	962092	7.9	4	0.4	1	G	1	4	1	Wind Turbine	6	66.17	3	-4.34	1	18	3	3
890	291801.2	962092	8.4	6	0.5	2	R	1.5	6	2	Wind Turbine	6	76.24	3	-5.42	1	18	3	3
891	291767.5	962151	4.7	4	1.2	3	R	1.5	18	3	Wind Turbine	6	87.15	3	-5.48	1	18	3	9
892	291724.6	962164	4.5	4	0.5	1	G	1	4	1	Wind Turbine	6	89.90	3	-2.57	1	18	3	3
893	291710.8	962163	5.0	4	1	2	G	1	8	2	Wind Turbine	6	90.22	3	-1.55	1	18	3	6
894	291719.8	962223	3.4	2	0.6	2	G	1	4	1	Major Water	FALSE	142.10	3	16.79	2	0	1	1
895	291743.9	962227	3.0	2	0.8	2	R	1.5	6	2	Major Water	FALSE	119.80	3	15.38	2	0	1	2
896	291711.2	962242	6.9	4	0.3	1	G	1.5	6	2	Major Water	FALSE	111.11	3	11.33	2	0	1	1
897	291689.8	962334	6.1	4	0.3	1	G	1	4	1	Major Water	FALSE	133.68	3	14.13	2	0	1	1
898	291666.5	962389	3.7	2	0.6	2	G	1	4	1	Wind Turbine	6	81.31	3	4.47	1	18	3	3
899	291652.6	962382	4.2	4	0.8	2	G	1	8	2	Wind Turbine	6	82.88	3	5.50	1	18	3	6
900	291682.3	962412	6.5	4	0.7	2	G	1	8	2	Important Habitat	8	60.88	3	5.35	1	24	3	6
901	291699.7	962421	6.6	4	0.5	1	G	1	4	1	Important Habitat	8	52.01	3	3.66	1	24	3	3
902	291707.7	962469	1.1	1	1.3	3	G	1	3	1	Important Habitat	8	5.17	4	0.09	1	32	5	5
903	291690.0	962471	3.1	2	0.6	2	G	1	4	1	Important Habitat	8	2.21	4	0.08	1	32	5	5
904	291679.9	962472	5.3	4	0.3	1	G	1	4	1	Important Habitat	8	5.53	4	0.39	1	32	5	5
905	291668.0	962471	6.3	4	0.3	1	G	1	4	1	Important Habitat	8	13.76	3	1.25	1	24	3	3
906	291657.8	962469	5.8	4	0.4	1	G	1	4	1	Important Habitat	8	20.92	3	1.96	1	24	3	3
907	291650.0	962472	5.8	4	0.3	1	G	1	4	1	Wind Turbine	6	21.32	3	-1.31	1	18	3	3
908	291639.1	962454	5.9	4	0.5	1	G	1	4	1	Wind Turbine	6	11.36	3	0.68	1	18	3	3
909	291625.3	962448	5.9	4	0.6	2	G	1	8	2	Wind Turbine	6	15.48	3	1.33	1	18	3	6
910	291624.9	962475	4.6	4	0.6	2	G	1	8	2	Wind Turbine	6	14.15	3	-1.30	1	18	3	3
911	291618.1	962472	5.1	4	0.4	1	G	1	4	1	Wind Turbine	6	16.46	3	-1.39	1	18	3	3
912	291609.6	962471	5.1	4	0.4	1	G	1	8	2	Wind Turbine	6	23.41	3	-1.67	1	18	3	3
913	291529.5	962781	4.6	4	0.6	2	G	1	8	2	Wind Turbine	6	49.03	3	0.96	1	18	3	6
914	291530.1	962792	4.6	4	0.7	2	G	1	8	2	Wind Turbine	6	38.39	3	0.89	1	18	3	6
915	291529.1	962802	4.6	4	0.3	1	R	1.5	6	2	Wind Turbine	6	28.37	3	0.69	1	18	3	6
916	291531.5	962810	4.8	4	1	2	R	1	4	1	Wind Turbine	6	1	0.80	3	1	18	3	6
917	291529.1	962821	5.2	4	0.5	1	G	1	4	1	Wind Turbine	6	9.03	4	0.25	1	24	3	3
918	291529.7	962830	5.3	4	0.3	1	G	1	4	1	Wind Turbine	6	0.28	4	-0.02	1	24	3	3
919	291552.4	962815	5.1	4	0.5	1	R	1.5	6	2	Wind Turbine	6	26.79	3	2.38	1	18	3	6
920	291553.2	962810	4.8	4	0.4	1	G	1.5	6	2	Wind Turbine	6	30.94	3	2.60	1	18	3	6
921	291513.0	962804	4.6	4	0.2	1	G	1	4	1	Wind Turbine	6	30.87	3	-0.64	1	18	3	6
922	291512.2	962808	4.8	4	0.5	1	R	1.5	4.8	2	Wind Turbine	6	27.98	3	0.75	1	18	3	6
923	291505.6	962830	5.3	4	0.7	2	R	1.5	12	2	Wind Turbine	6	24.37	3	-2.02	1	18	3	6
924	291493.1	962826	6.4	4	0.3	1	R	1.5	6	2	Wind Turbine	6	37.19	3	-3.11	1	18	3	6
925	291489.9	962832	6.3	4	0.8	2	G	1	8	2	Wind Turbine	6	40.14	3	-3.60	1	18	3	6
926	291499.9	962831	5.6	4	0.8	2	G	1	8	2	Wind Turbine	6	30.13	3	-2.56	1	18	3	6
927	291510.2	962831	5.2	4	0.5	2	G	1	4	1	Wind Turbine	6	19.84	3	-1.70	1	18	3	3
928	291519.9	962831	5.2	4	0.2	1	G	1	4	1	Wind Turbine	6	10.15	3	-0.88	1	18	3	3
929	291530.1	962830	5.3	4	0.1	1	G	1	4	1	Wind Turbine	6	0.13	4	0.01	1	24	3	3
930	291539.1	962832	5.5	4	0.2	1	G	1	4	1	Wind Turbine	6							

991	291279.3	962202	2.0	2	1.6	3	G	1	6	2	Important Habitat	8	1.28	4	-0.04	1	32	5	10
992	291268.3	962202	2.2	2	1.1	3	G	1	6	2	Important Habitat	8	2.36	4	-0.08	1	32	5	10
993	291274.7	962214	2.5	2	1.2	3	R	1.5	9	2	Important Habitat	8	0.89	4	-0.04	1	32	5	10
994	291259.4	962209	2.2	2	1.2	3	G	1	6	2	Important Habitat	8	0.99	4	-0.04	1	32	5	10
995	291259.6	962202	2.5	2	1.0	2	G	1	4	1	Important Habitat	8	1.65	4	-0.03	1	32	5	5
996	291248.6	962209	4.6	4	0.7	2	G	1	4	1	Important Habitat	8	1.66	4	-0.12	1	32	5	3
997	291239.1	962200	6.3	4	0.4	1	G	1	4	1	Wind Turbine	6	0.10	4	0.01	1	24	3	3
998	291229.4	962201	6.3	4	0.4	1	G	1	4	1	Wind Turbine	6	9.71	4	-0.71	1	24	3	3
999	291217.9	962200	7.8	4	0.4	1	G	1	4	1	Wind Turbine	6	21.13	3	-1.93	1	18	3	3
1000	291208.1	962200	7.9	4	0.3	1	G	1	4	1	Wind Turbine	6	30.94	3	-3.13	1	18	3	3
1001	290888.5	962180	2.1	2	1.2	3	G	1.5	6	2	Important Habitat	8	2.56	4	-0.11	1	32	5	3
1002	290889.5	962390	1.1	1	1.1	3	R	1.5	4.5	1	Important Habitat	8	1.93	4	-0.03	1	32	5	5
1003	290905.9	962400	1.7	1	0.9	2	G	1	2	1	Important Habitat	8	1.75	4	-0.03	1	32	5	5
1004	290908.3	962408	0.9	1	0.8	2	G	1	2	1	Important Habitat	8	1.91	4	-0.01	1	32	5	5
1005	290919.5	962413	2.3	2	0.5	1	G	1	2	1	Important Habitat	8	0.71	4	-0.04	1	32	5	5
1006	290939.9	962420	3.4	2	0.7	2	G	1	4	1	Important Habitat	8	1.72	4	-0.02	1	32	5	5
1007	290926.3	962429	3.5	2	1	2	G	1	4	1	Important Habitat	8	11.18	3	0.56	1	24	3	3
1008	291950.1	962861	1.5	1	0.4	1	G	1	1	1	Wind Turbine	6	56.41	3	1.00	1	18	3	3
1009	291949.9	962871	1.5	1	0.4	1	G	1	1	1	Wind Turbine	6	51.01	3	0.76	1	18	3	3
1010	291949.5	962882	1.5	1	0.6	2	G	1	2	1	Wind Turbine	6	46.24	3	0.46	1	18	3	3
1011	291949.5	962892	1.5	1	1	2	G	1	2	1	Wind Turbine	6	43.96	3	0.22	1	18	3	3
1012	291951.6	962901	2.2	2	1.1	3	G	1	6	2	Wind Turbine	6	41.46	3	-0.02	1	18	3	6
1013	291951.5	962911	3.0	2	0.7	2	R	1.5	6	2	Wind Turbine	6	43.63	3	-0.58	1	18	3	6
1014	291954.1	962916	2.3	2	0.3	1	G	1	2	1	Wind Turbine	6	42.87	3	-0.82	1	18	3	3
1015	291948.3	962922	1.5	1	0.4	1	R	1.5	1.5	1	Wind Turbine	6	50.74	3	-0.95	1	18	3	3
1016	291950.4	962931	1.4	1	0.4	1	R	1	1	1	Wind Turbine	6	54.04	3	-1.19	1	18	3	3
1017	291949.8	962941	1.5	1	0.9	2	R	1.5	6	1	Wind Turbine	6	61.03	3	-1.42	1	18	3	3
1018	291952.5	962952	1.5	1	1	2	G	1	2	1	Wind Turbine	6	67.57	3	-1.71	1	18	3	3
1019	291923.4	962963	1.7	1	2	3	G	1	3	1	Wind Turbine	6	94.92	3	-1.97	1	18	3	3
1020	291885.9	962970	1.7	1	1.2	3	G	1	3	1	Wind Turbine	6	128.96	3	-2.13	1	18	3	3
1021	291881.9	962956	1.7	1	1.4	3	G	1	3	1	Wind Turbine	6	125.21	3	-1.70	1	18	3	3
1022	291895.1	962927	2.0	1	2.0	3	R	1.5	4.5	1	Wind Turbine	6	102.17	3	-0.86	1	18	3	3
1023	291890.5	962912	1.9	1	1.7	3	R	1.5	4.5	1	Wind Turbine	6	103.46	3	-0.29	1	18	3	3
1024	291900.7	962912	1.9	1	2.3	3	G	1	9.33	1	Wind Turbine	6	93.33	3	-0.37	1	18	3	3
1025	291909.7	962912	1.8	1	2.1	3	R	1.5	4.5	1	Wind Turbine	6	84.40	3	-0.44	1	18	3	3
1026	291920.3	962911	2.0	2	1.8	3	R	1.5	9	2	Wind Turbine	6	73.91	3	-0.48	1	18	3	6
1027	291930.8	962912	2.5	2	1.2	3	R	1	2	1	Wind Turbine	6	63.76	3	-0.53	1	18	3	6
1028	291939.5	962911	2.7	2	1	2	G	1	4	1	Wind Turbine	6	55.11	3	-0.53	1	18	3	3
1029	291954.4	962916	2.2	2	0.4	1	R	1.5	3	1	Wind Turbine	6	42.69	3	-0.83	1	18	3	3
1030	291959.8	962911	3.1	2	0.4	1	G	1	2	1	Wind Turbine	6	35.66	3	-0.60	1	18	3	3
1031	291970.4	962913	3.1	2	0.3	1	G	1	2	1	Wind Turbine	6	27.12	3	-0.75	1	18	3	3
1032	291970.4	962895	2.0	1	2.0	3	R	1	2	1	Wind Turbine	6	22.78	3	-0.20	1	18	3	3
1033	291978.5	962934	1.4	1	1	2	G	1	2	1	Wind Turbine	6	39.02	3	-1.45	1	18	3	3
1034	291980.5	962912	3.3	2	0.4	1	G	1	2	1	Wind Turbine	6	18.64	3	-0.72	1	18	3	3
1035	291990.2	962912	3.3	2	0.4	1	G	1	2	1	Wind Turbine	6	14.74	3	-0.79	1	18	3	3
1036	291999.6	962912	3.2	2	0.3	1	G	1	2	1	Wind Turbine	6	15.31	3	-0.83	1	18	3	3
1037	292163.5	962744	2.4	2	1.2	3	R	1.5	9	2	Important Habitat	8	32.91	3	0.48	1	24	3	6
1038	292144.8	962734	2.4	2	1	2	R	1.5	6	1	Important Habitat	8	53.72	3	0.93	1	24	3	6
1039	292165.8	962702	2.5	2	1	2	G	1	2	1	Important Habitat	8	59.06	3	2.29	1	24	3	3
1040	292180.7	962718	2.5	2	1.1	3	R	1.5	9	2	Important Habitat	8	37.91	3	1.58	1	24	3	6
1041	292195.4	962695	3.7	2	1.2	3	R	1.5	9	2	Important Habitat	8	57.96	3	2.60	1	24	3	6
1042	292208.7	962701	3.0	2	1.2	3	R	1.5	9	2	Important Habitat	8	51.69	3	2.30	1	24	3	6
1043	292169.8	962659	4.3	4	1.6	4	R	1.5	18	1	Wind Turbine	6	70.19	3	-1.44	1	18	3	6
1044	292209.3	962662	4.3	4	1	2	G	1	8	2	Wind Turbine	6	34.46	3	-1.45	1	18	3	6
1045	292222.1	962671	4.3	4	0.5	1	G	1	4	1	Wind Turbine	6	32.48	3	-2.08	1	18	3	3
1046	292209.9	962652	4.1	4	0.6	2	R	1.5	12	2	Wind Turbine	6	29.58	3	-0.71	1	18	3	6
1047	292210.1	962641	3.5	2	1	2	R	1.5	6	2	Wind Turbine	6	27.98	3	0.02	1	18	3	6
1048	292210.9	962631	2.9	2	0.2	1	G	1	2	1	Wind Turbine	6	29.46	3	0.57	1	18	3	3
1049	292209.7	962622	2.8	2	0.7	2	R	1.5	6	2	Wind Turbine	6	35.21	3	1.03	1	18	3	6
1050	292210.9	962612	2.8	2	0.5	1	G	1	2	1	Wind Turbine	6	41.45	3	1.54	1	18	3	3
1051	292211.0	962602	2.8	2	0.4	1	G	1	2	1	Wind Turbine	6	49.13	3	2.02	1	18	3	3
1052	292211.2	962592	2.8	2	0.3	1	G	1	2	1	Wind Turbine	6	57.37	3	2.50	1	18	3	3
1053	292208.0	962587	2.8	2	0.4	1	G	1	2	1	Wind Turbine	6	63.32	3	2.74	1	18	3	3
1054	292209.9	962581	2.8	2	0.5	1	R	1.5	3	1	Wind Turbine	6	67.83	3	3.04	1	18	3	3
1055	292210.7	962572	2.8	2	0.6	2	G	1	4	1	Wind Turbine	6	76.31	3	3.51	1	18	3	3
1056	292245.2	962608	2.8	2	0.4	1	G	1	2	1	Wind Turbine	6	35.41	3	1.71	1	18	3	3
1057	292241.1	962614	2.8	2	0.4	1	G	1	2	1	Wind Turbine	6	29.60	3	1.46	1	18	3	3
1058	292250.0	962611	2.9	2	0.4	1	R	1.5	3	1	Wind Turbine	6	33.78	3	1.55	1	18	3	3
1059	292259.8	962612	3.7	2	0.2	3	G	1.5	3	1	Wind Turbine	6	37.78	3	1.378	1	18	3	3
1060	292270.0	962611	2.7	2	0.2	1	G	1	2	1	Wind Turbine	6	45.21	3	1.08	1	18	3	3
1061	292243.6	962640	2.9	2	0.3	1	G	1	2	1	Wind Turbine	6	6.22	4	0.13	1	24	3	3
1062	292232.0	962631	2.8	2	0.8	2	G	1	4	1	Wind Turbine	6	13.73	3	0.61	1	18	3	3
1063	292128.6	962752	2.5	2	0.8	2	G	1	4	1	Important Habitat	8	65.07	3	1.10	1	24	3	3
1064	292153.6	962767	2.6	2	1.2	3	R	1.5	6	1	Important Habitat	8	37.17	3	0.41	1	24	3	6
1065	292147.2	962815	2.5	2	1.6	3	G	1	6	2	Important Habitat	8	18.16	3	0.71	1	24	3	6
1066	292133.7	962810	2.5	2	1.1	3	G	1	6	2	Important Habitat	8	31.88	3	1.10	1	24	3	6
1067	292118.9	962803	2.5	2	1.2	3	G	1	6	2	Important Habitat	8	48.21	3	1.60	1	24	3	6
1068	292094.0	962849	2.7	2	1.2	3	G	1	6	2	Important Habitat	8	54.69	3	1.93	1	24	3	6
1069	292109.8	962854	2.7	2	1.2	3	R	1.5	6	2	Important Habitat	8	38.26	3	1.36	1	24	3	6
1070	292125.7	962862	2.7	2	1.2	3	R	1.5	9	2	Important Habitat	8	20.43	3	0.68	1	24	3	6
1071	292090.4	962905	2.8	2	0.2	1	G	1	2	1	Important Habitat	8	51.40	3	2.01	1	24	3	3
1072	292074.2	962898	3.3																

1133	291356.5	963061	5.5	4	0.2	1	R	1.5	6	2	Important Habitat	8	122.68	3	16.70	2	24	3	6
1134	291350.7	963045	5.8	4	0.4	1	G	1	4	1	Important Habitat	8	115.51	3	15.10	2	24	3	3
1135	291342.2	963032	8.4	6	0.4	1	G	1	6	2	Important Habitat	8	107.13	3	13.44	2	24	3	6
1136	291293.8	963029	8.3	6	0.1	1	G	1.5	9	2	Important Habitat	8	59.29	3	7.08	1	24	3	6
1137	291280.6	963045	12.2	6	0.3	1	G	1	6	2	Important Habitat	8	55.46	3	7.56	1	24	3	6
1138	291287.9	963066	11.9	6	0.4	1	G	1	6	2	Important Habitat	8	57.33	3	8.34	1	24	3	6
1139	291262.9	963078	8.4	6	0.4	1	G	1	6	2	Important Habitat	8	44.04	3	4.18	1	24	3	6
1140	291240.2	963077	6.2	4	0.3	1	G	1	4	1	Important Habitat	8	27.29	3	2.55	1	24	3	3
1141	291276.0	963106	12.3	6	0.3	1	R	1.5	9	2	Important Habitat	8	73.37	3	8.10	1	24	3	6
1142	291301.0	963118	9.4	6	0.4	1	R	1.5	9	2	Important Habitat	8	99.77	3	12.96	2	24	3	6
1143	291315.1	963122	10.2	6	0.3	1	G	1	6	2	Important Habitat	8	112.26	3	15.20	2	24	3	6
1144	291302.8	963176	11.3	6	0.3	1	G	1	6	2	Important Habitat	8	113.35	3	18.71	2	24	3	6
1145	291280.9	963180	11.3	6	0.3	1	R	1.5	9	2	Important Habitat	8	92.27	3	14.52	2	24	3	6
1146	291237.9	963185	8.3	6	0.5	1	G	1	6	2	Important Habitat	8	52.54	3	5.87	1	24	3	6
1147	291254.6	963232	12.7	6	0.5	1	G	1	6	2	Important Habitat	8	74.59	3	7.95	1	24	3	6
1148	291273.8	963236	14.2	6	1.5	1	G	1.5	9	2	Important Habitat	8	93.63	3	12.82	2	24	3	6
1149	291233.3	963239	6.2	4	0.4	1	R	1.5	6	2	Important Habitat	8	53.11	3	4.55	1	24	3	6
1150	291226.4	963292	2.2	2	0.6	2	R	1.5	6	2	Important Habitat	8	46.37	3	3.30	1	24	3	6
1151	291241.6	963299	7.1	4	0.4	1	R	1.5	6	2	Important Habitat	8	62.36	3	4.21	1	24	3	6
1152	291217.7	963294	2.4	2	0.7	2	R	1.5	6	2	Important Habitat	8	38.02	3	2.97	1	24	3	6
1153	291212.6	963280	4.2	4	0.7	2	G	1	8	2	Important Habitat	8	30.02	3	2.72	1	24	3	6
1154	291216.7	963314	4.4	4	0.7	2	G	1	8	2	Important Habitat	8	41.92	3	2.96	1	24	3	6
1155	291186.2	963313	4.7	4	0.4	1	G	1	4	1	Important Habitat	8	12.01	3	1.26	1	24	3	6
1156	291172.3	963293	1.7	1	0.6	2	G	1	2	1	Important Habitat	8	2.16	4	0.02	1	32	5	5
1157	291142.3	963293	0.7	1	3	8	G	1	8	2	Important Habitat	8	2.15	4	-0.02	1	32	5	10
1158	291157.9	963318	1.4	1	1.6	3	G	1	8	2	Important Habitat	8	2.38	4	0.03	1	32	5	5
1159	291157.7	963332	1.6	1	1.7	3	G	1	8	2	Important Habitat	8	2.91	4	-0.03	1	32	5	5
1160	291126.9	963336	2.1	2	3.8	8	F	1.5	24	3	Important Habitat	8	2.81	4	-0.03	1	32	5	15
1161	291095.3	963334	7.8	4	0.3	1	G	1	4	1	Important Habitat	8	4.97	4	0.64	1	32	5	5
1162	291138.7	963278	0.9	1	3	3	R	1.5	4.5	1	Important Habitat	8	1.55	4	-0.01	1	32	5	5
1163	291128.6	963290	1.0	1	3.5	8	R	1.5	12	2	Important Habitat	8	2.74	4	0.04	1	32	5	10
1164	291117.0	963291	1.5	1	3.4	1	G	1.5	3.4	1	Important Habitat	8	3.04	4	0.04	1	32	5	5
1165	291107.5	963292	3.1	2	2.8	3	R	1.5	9	2	Important Habitat	8	2.49	4	-0.18	1	32	5	10
1166	291099.9	963292	4.3	4	2	3	F	1.5	18	3	Important Habitat	8	1.11	4	0.03	1	32	5	15
1167	291097.1	963277	4.8	4	2	3	R	1.5	18	3	Important Habitat	8	2.35	4	-0.19	1	32	5	15
1168	291089.5	963293	6.8	4	0.4	1	G	1	4	1	Important Habitat	8	5.71	4	0.45	1	32	5	5
1169	291078.3	963340	5.8	4	5.8	1	G	1	4	1	Important Habitat	8	22.00	3	3.05	1	24	3	3
1170	291079.1	963330	5.5	4	0.4	1	G	1	4	1	Important Habitat	8	17.42	3	2.68	1	24	3	3
1171	291079.8	963321	7.3	4	0.3	1	G	1	4	1	Important Habitat	8	15.57	3	2.72	1	24	3	3
1172	291080.2	963312	10.8	6	0.3	1	G	1	6	2	Important Habitat	8	15.05	3	3.14	1	24	3	6
1173	291079.5	963302	12.3	6	0.3	1	G	1	6	2	Wind Turbine	6	7.65	4	0.65	1	24	3	6
1174	291079.5	963294	11.9	6	0.2	1	G	1	6	2	Wind Turbine	6	0.55	4	0.11	1	24	3	6
1175	291070.1	963294	11.3	6	0.3	1	G	1	6	2	Wind Turbine	6	9.96	4	1.88	1	24	3	6
1176	291059.0	963295	5.1	4	0.2	1	G	1	4	1	Wind Turbine	6	21.07	3	3.75	1	18	3	3
1177	291050.1	963292	13.6	6	0.2	1	F	1	6	2	Wind Turbine	6	30.05	3	2.59	1	18	3	6
1178	291039.4	963291	21.3	8	0.3	1	G	1	8	2	Wind Turbine	6	40.72	3	-0.75	1	18	3	6
1179	291030.4	963291	24.2	8	0.4	1	G	1	8	2	Wind Turbine	6	49.74	3	-4.37	1	18	3	6
1180	291060.6	963317	8.4	6	0.3	1	G	1	6	2	Wind Turbine	6	30.25	3	0.94	1	18	3	6
1181	291079.9	963242	7.9	4	0.3	1	R	1.5	6	2	Important Habitat	8	15.43	3	-1.26	1	24	3	6
1182	291079.9	963252	7.9	4	0.4	1	G	1	4	1	Important Habitat	8	15.43	3	-1.25	1	24	3	3
1183	291079.9	963262	8.3	6	0.3	1	G	1	6	2	Important Habitat	8	15.39	3	-1.09	1	24	3	6
1184	291079.1	963271	12.4	6	0.5	1	G	1	6	2	Important Habitat	8	11.26	3	0.75	1	24	3	6
1185	291079.6	963281	11.4	6	0.4	1	G	1	6	2	Important Habitat	8	11.74	3	1.17	1	24	3	6
1186	291079.9	963292	11.8	6	0.4	1	G	1.5	9	2	Wind Turbine	6	2.30	4	-0.15	1	24	3	6
1187	291080.0	963294	11.9	6	0.5	1	G	1	6	2	Wind Turbine	6	0.00	4	0.00	1	24	3	6
1188	291059.0	963275	16.6	8	0.2	1	G	1	8	2	Wind Turbine	6	28.07	3	1.68	1	18	3	6
1189	291085.7	963332	8.9	6	0.2	1	G	1	6	2	Important Habitat	8	13.10	3	1.55	1	24	3	6
1190	291429.9	963042	3.4	2	0.8	2	G	1.5	6	2	Important Habitat	8	4.06	3	-2.27	1	24	3	6
1191	291418.4	963025	4.9	4	0.2	2	R	1.5	12	2	Important Habitat	8	88.11	3	-5.64	1	24	3	6
1192	291407.3	963018	5.6	4	0.8	2	G	1	8	2	Important Habitat	8	101.04	3	-6.69	1	24	3	6
1193	291439.9	962972	5.6	4	0.6	2	G	1	8	2	Important Habitat	8	90.41	3	-7.84	1	24	3	6
1194	291481.2	962992	5.9	4	0.4	1	R	1.5	6	2	Important Habitat	8	44.33	3	-2.76	1	24	3	6
1195	291516.5	962951	4.2	4	0.6	2	G	1	6	2	Important Habitat	8	54.90	3	-3.68	1	24	3	6
1196	291479.9	962932	5.2	4	0.5	1	R	1.5	6	2	Important Habitat	8	90.86	3	-7.13	1	24	3	6
1197	291461.1	962922	4.3	4	0.7	2	R	1.5	12	2	Important Habitat	8	108.80	3	-8.80	1	24	3	6
1198	291469.9	962872	4.2	4	1.1	3	G	1	12	2	Wind Turbine	6	73.21	3	-5.35	1	18	3	6
1199	291493.6	962878	4.3	4	0.6	2	G	1	6	2	Wind Turbine	6	59.97	3	-3.61	1	18	3	6
1200	291528.0	962844	5.7	4	0.6	2	G	1.5	12	2	Wind Turbine	6	14.39	3	-0.33	1	18	3	6
1201	291508.4	962836	5.2	4	0.2	1	R	1.5	6	2	Wind Turbine	6	22.31	3	-2.01	1	18	3	6
1202	291519.9	962782	4.6	4	0.6	2	G	1	8	2	Wind Turbine	6	49.36	3	0.18	1	18	3	6
1203	291499.9	962782	4.3	4	0.7	2	G	1	8	2	Wind Turbine	6	56.95	3	-1.35	1	18	3	6
1204	291549.9	962722	4.3	4	2.5	3	R	1.5	18	3	Minor Watercourse	6	66.10	3	10.98	2	18	3	9
1205	291549.9	962782	4.4	4	0.6	2	G	1	8	2	Wind Turbine	6	52.23	3	2.58	1	18	3	6
1206	291569.9	962722	3.7	2	2	2	G	1	6	2	Important Habitat	8	72.81	3	-4.01	1	24	3	6
1207	291600.0	962629	5.0	4	0.2	1	G	1	4	1	Important Habitat	8	5.31	4	-0.42	1	32	5	5
1208	291571.6	962630	4.6	4	1	2	R	1.5	12	2	Important Habitat	8	33.67	3	-2.74	1	24	3	6
1209	291549.9	962622	2.6	2	2.1	3	G	1	6	2	Minor Watercourse	6	36.46	3	1.84	1	18	3	6
1210	291529.4	962660	10.9	6	2	2	R	1.5	18	3	Minor Watercourse	6	20.41	3	1.04	1	18	3	6
1211	291557.7	962665	5.6	4	5.6	2	G	1	6	2	Important Habitat	8	47.99	3	4.14	1	24	3	6
1212	291580.1	962663	5.6	4	1.6	3	G	1	12	2	Important Habitat	8	25.65	3	-2.35	1	24	3	6
1213	291514.9	962720	7.9	4	0.7	2	G	1	8	2	Minor Watercourse	6	39.79	3	10.27	2	18	3	6
1214	291536.3																		

1275	291299.9	961912	2.1	2		2	3	G	1	6	2	Important Habitat	8	36.68	3	-0.32	1	24	3	6
1276	291319.9	961932	5.1	4		0.5	1	G	1	4	1	Important Habitat	8	63.61	3	0.86	1	24	3	3
1277	291289.9	961982	4.8	4		1.7	3	G	1	12	2	Important Habitat	8	35.70	3	1.60	1	24	3	6
1278	291309.9	961982	4.8	4		1.6	3	R	1.5	18	3	Important Habitat	8	55.32	3	2.81	1	24	3	9
1279	291282.8	962035	2.8	2		0.8	2	G	1	4	1	Important Habitat	8	58.76	3	4.36	1	24	3	3
1280	291302.5	962035	2.8	2		1.2	3	G	1.5	6	1	Important Habitat	8	74.22	3	4.90	1	24	3	2
1281	291261.0	962032	4.7	4		0.2	1	G	1	4	1	Important Habitat	8	46.54	3	3.49	1	24	3	3
1282	291276.8	962085	4.6	4		0.8	2	G	1	8	2	Important Habitat	8	102.28	3	6.69	1	24	3	6
1283	291269.9	962142	5.1	4		0.8	2	G	1	4	2	Important Habitat	8	47.53	3	-3.76	1	24	3	6
1284	291289.9	962142	5.4	4		0.3	1	G	1	4	1	Important Habitat	8	47.38	3	-1.51	1	24	3	3
1285	291249.9	962142	5.5	4		1.3	3	G	1.5	18	3	Important Habitat	8	55.45	3	-5.30	1	24	3	3
1286	291279.9	962188	1.7	1		0.7	2	R	1	2	1	Important Habitat	8	0.30	4	0.00	1	32	5	5
1287	291273.8	962245	1.6	1		1.5	3	R	1.5	4.5	1	Important Habitat	8	2.17	4	-0.03	1	32	5	5
1288	291250.1	962243	5.5	4		0.6	2	R	1.5	12	2	Important Habitat	8	14.12	3	-0.39	1	24	3	6
1289	291237.8	962293	2.3	2		0.5	1	G	1	2	1	Important Habitat	8	18.20	3	-0.33	1	24	3	3
1290	291273.0	962303	2.3	2		1.2	3	G	1	6	2	Important Habitat	8	2.20	4	-0.08	1	32	5	10
1291	291212.9	962290	9.1	6		0.4	1	G	1	6	2	Important Habitat	8	39.50	3	-1.81	1	24	3	5
1292	291234.2	962334	4.5	4		1.2	3	G	1	12	2	Important Habitat	8	1.19	4	-0.06	1	32	5	10
1293	291289.9	962352	6.4	4		1.2	3	G	1	12	2	Important Habitat	8	5.88	4	0.59	1	32	5	10
1294	291333.9	962366	3.2	2		1.4	3	G	1	6	2	Important Habitat	8	51.89	3	3.65	1	24	3	6
1295	291297.4	962472	4.3	4		1	2	G	1	8	1	Important Habitat	8	16.91	3	-1.05	1	24	3	6
1296	291245.7	962545	2.2	2		0.5	1	G	1	2	1	Important Habitat	8	4.86	4	-0.19	1	24	3	5
1297	291194.7	962521	6.4	4		0.2	1	G	1	4	1	Important Habitat	8	59.74	3	-4.02	1	24	3	3
1298	291152.3	962496	8.9	6		0.2	1	G	1	6	2	Important Habitat	8	58.32	3	3.26	1	24	3	6
1299	291166.7	962502	9.6	6		0.3	1	G	1	6	2	Important Habitat	8	64.17	3	5.05	1	24	3	6
1300	291128.5	962484	6.7	4		0.2	1	R	1.5	4	1	Important Habitat	8	48.49	3	0.41	1	24	3	6
1301	291169.9	962452	5.1	4		0.2	1	G	1	4	1	Important Habitat	8	14.40	3	1.13	1	24	3	2
1302	291149.9	962432	5.7	4		0.2	1	G	1	4	1	Important Habitat	8	1.42	4	-0.12	1	32	5	5
1303	291185.7	962474	10.6	6		0.2	1	G	1	6	2	Important Habitat	8	41.16	3	3.35	1	24	3	6
1304	291229.9	962402	3.0	2		1	2	G	1	4	1	Important Habitat	8	1.42	4	-0.05	1	32	5	5
1305	291199.9	962392	2.8	2		1	2	G	1	4	1	Important Habitat	8	16.38	3	-0.39	1	24	3	3
1306	291117.9	962544	6.4	4		0.4	1	R	1.5	4	1	Important Habitat	8	109.81	3	-1.15	1	24	3	6
1307	291140.0	962553	9.7	6		0.3	1	G	1	6	2	Important Habitat	8	102.24	3	-10.29	1	24	3	6
1308	291099.9	962532	5.3	4		0.1	1	G	1	4	1	Important Habitat	8	104.07	3	-0.47	1	24	3	3
1309	291121.6	962601	10.9	6		0.3	1	G	1	6	2	Important Habitat	8	118.88	3	-11.88	1	24	3	6
1310	291096.5	962591	7.0	4		0.1	1	G	1	4	1	Important Habitat	8	143.81	3	-15.74	1	24	3	3
1311	291089.9	962652	6.1	4		0.3	1	G	1	4	1	Important Habitat	8	154.74	3	-15.62	1	24	3	6
1312	291068.9	962637	5.4	4		0.3	1	R	1.5	6	2	Important Habitat	8	176.41	3	-20.43	1	24	3	6
1313	291059.9	962702	3.2	2		0.1	1	G	1	2	1	Wind Turbine	6	158.77	3	2.04	1	18	3	3
1314	291049.9	962622	6.9	4		0.2	1	R	1.5	6	2	Important Habitat	6	192.56	3	-21.25	1	24	3	6
1315	291040.8	962694	4.2	4		0.1	1	R	1.5	6	2	Wind Turbine	6	163.36	3	0.78	1	18	3	6
1316	291020.9	962689	4.3	4		0.2	1	R	1.5	6	2	Minor Watercourse	6	154.57	2	17.35	2	18	3	6
1317	290873.8	962367	1.0	1		0.8	2	G	1	2	1	Important Habitat	8	1.74	4	-0.03	1	32	5	5
1318	290858.9	962374	1.3	1		2.5	3	R	1.5	4.5	1	Important Habitat	8	16.30	3	-0.13	1	24	3	3
1319	290844.8	962386	0.9	1		4.5	8	R	1.5	12	2	Important Habitat	8	19.43	3	-0.02	1	24	3	6
1320	290872.5	962437	0.5	1		1	2	G	1	2	1	Important Habitat	8	11.59	4	-0.05	1	24	3	3
1321	290899.9	962432	1.3	1		1.3	3	G	1.5	6	2	Important Habitat	8	1.42	3	0.03	1	24	3	5
1322	290925.6	962586	5.0	4		0.2	1	R	1.5	6	2	Important Habitat	8	141.40	3	-0.40	1	24	3	6
1323	290939.9	962632	3.5	2		0.3	1	G	1	2	1	Minor Watercourse	6	135.27	3	11.99	2	18	3	3
1324	290957.6	962681	3.7	2		0.2	1	R	1.5	3	1	Minor Watercourse	6	105.90	3	13.07	2	18	3	3
1325	290918.4	962460	5.1	4		0.3	1	G	1	4	1	Important Habitat	8	19.11	3	0.35	1	24	3	3
1326	290940.2	962451	1.1	1		0.3	1	G	1	1	1	Important Habitat	8	27.83	3	-0.05	1	24	3	3
1327	290957.0	962509	5.7	4		0.1	1	G	1	4	1	Important Habitat	8	80.82	3	1.15	1	24	3	3
1328	290979.9	962501	4.9	4		0.1	1	G	1	4	1	Important Habitat	8	79.68	3	0.86	1	24	3	3
1329	290934.1	962526	6.1	4		0.2	1	G	1	4	1	Important Habitat	8	86.11	3	-0.92	1	24	3	3
1330	290975.6	962577	3.9	2		0.3	1	G	1	2	1	Important Habitat	8	148.61	3	3.05	1	24	3	3
1331	291000.4	962570	4.3	4		0.7	2	R	1.5	12	2	Important Habitat	8	151.56	3	2.38	1	24	3	6
1332	290973.4	962567	3.9	2		0.2	1	R	1.5	6	2	Important Habitat	8	138.93	3	2.79	1	24	3	6
1333	290947.7	962577	5.0	4		0.2	1	R	1.5	6	2	Important Habitat	8	139.19	3	1.31	1	24	3	6
1334	290973.3	962634	2.6	2		0.1	1	G	1	2	1	Minor Watercourse	6	150.82	3	13.95	2	18	3	3
1335	290996.2	962629	2.2	2		0.6	2	G	1	4	1	Minor Watercourse	6	169.95	3	14.92	2	18	3	3
1336	291019.7	962624	4.3	4		0.3	1	R	1.5	6	2	Minor Watercourse	6	189.84	3	16.19	2	18	3	6
1337	291045.2	962631	4.3	4		0.3	1	R	1.5	6	2	Wind Turbine	6	176.63	3	0.77	1	18	3	6
1338	290994.2	962700	3.7	2		0.5	1	G	1	2	1	Minor Watercourse	6	125.89	3	14.77	2	18	3	3
1339	291021.3	962754	6.9	4		0.5	1	G	1	4	1	Wind Turbine	6	103.32	3	0.28	1	18	3	3
1340	291049.0	962754	3.9	2		0.5	1	G	1	2	1	Wind Turbine	6	105.66	3	2.51	1	18	3	3
1341	291006.1	962665	3.5	2		0.1	1	G	1	2	1	Minor Watercourse	6	153.57	3	15.70	2	18	3	3
1342	290980.8	962673	3.8	2		0.1	1	G	1	2	1	Minor Watercourse	6	128.39	3	14.28	2	18	3	3
1343	291001.1	962850	4.2	4		0.6	2	G	1	8	1	Wind Turbine	6	26.72	3	2.37	1	18	3	9
1344	290979.8	962853	2.5	2		0.1	1	R	1.5	3	1	Tracks or Paths	2	45.53	3	0.89	1	6	1	1
1345	290929.1	962886	3.3	2		0.5	1	G	1	2	1	Tracks or Paths	2	9.17	4	-0.40	1	8	2	2
1346	290934.4	962904	3.0	2		0.1	1	R	1	2	1	Tracks or Paths	2	10.47	3	0.01	1	6	1	1
1347	290935.0	962912	2.3	2		0.2	1	G	1.5	3	1	Tracks or Paths	2	16.75	3	0.51	1	6	1	1
1348	290932.0	962924	7.1	4		0.5	1	G	1	2	1	Tracks or Paths	2	26.79	3	0.34	1	6	1	1
1349	290989.4	962946	2.5	2		0.3	1	R	1.5	3	1	Tracks or Paths	2	69.71	3	0.74	1	6	1	1
1350	290971.3	962966	4.0	4		0.9	2	R	1.5	12	2	Tracks or Paths	2	80.79	3	0.71	1	6	1	2
1351	291009.9	962922	5.8	4		0.2	1	G	1	4	1	Wind Turbine	6	66.96	3	-1.49	1	18	3	3
1352	291011.2	962912	6.0	4		0.2	1	G	1.5	6	2	Wind Turbine	6	56.98	3	-1.15	1	18	3	6
1353	291059.9	962892	4.0	4		0.2	1	R	1	4	1	Wind Turbine	6	47.80	3	2.77	1	18	3	3

1417	290533.9	962915	2.7	2	0	1	R	1.5	3	1	Tracks or Paths	2	3.18	4	-0.08	1	8	2	2
1418	290532.5	962927	3.1	2	0.1	1	G	1	2	2	Tracks or Paths	2	9.63	4	0.16	1	8	2	
1419	290534.5	962902	3.3	2	0.5	1	R	1.5	3	2	Tracks or Paths	2	16.13	3	-0.09	1	6	1	1
1420	290486.0	962907	4.0	4	0	1	R	1.5	6	2	Tracks or Paths	2	6.09	4	-0.57	1	8	2	4
1421	290479.9	962922	4.7	4	0	1	G	1	0	1	Tracks or Paths	2	10.16	3	0.12	1	8	1	1
1422	290489.9	962989	4.7	4	0.1	1	R	1	4	1	Tracks or Paths	2	15.08	3	1.98	1	6	1	1
1423	290432.1	962898	6.7	4	0	1	G	1.5	6	2	Tracks or Paths	2	3.14	4	-0.37	1	8	2	4
1424	290429.9	962912	6.5	4	0	1	G	1	4	1	Tracks or Paths	2	14.65	3	-0.31	1	6	1	1
1425	290435.0	962881	6.0	4	0.3	1	R	1.5	6	2	Tracks or Paths	2	16.78	3	-0.56	1	6	1	2
1426	290386.7	962890	4.4	4	0	1	R	1.5	6	2	Tracks or Paths	2	6.83	4	0.52	1	8	2	4
1427	290389.7	962877	4.4	4	0.4	1	G	1	4	1	Tracks or Paths	2	14.29	3	0.40	1	6	1	1
1428	290383.3	962902	4.4	4	0.2	1	G	1	4	1	Tracks or Paths	2	13.78	3	0.57	1	6	1	1
1429	290329.7	962920	3.2	2	0.3	1	G	1	2	1	Tracks or Paths	2	49.50	3	-0.15	1	6	1	1
1430	290329.9	962902	3.4	2	0.3	1	G	1	2	1	Tracks or Paths	2	34.67	3	-0.96	1	6	1	1
1431	290330.8	962881	4.4	4	0.2	1	G	1	4	1	Tracks or Paths	2	16.32	3	-0.22	1	6	1	1
1432	290279.9	962912	3.0	2	0.3	1	R	1.5	3	1	Tracks or Paths	2	70.52	3	1.73	1	6	1	1
1433	290279.4	962893	3.3	2	0.1	1	G	1	2	1	Tracks or Paths	2	54.13	3	0.79	1	6	1	1
1434	290279.9	962932	3.2	2	0.1	1	G	1	2	1	Tracks or Paths	2	87.73	3	0.11	1	6	1	1
1435	290229.9	962952	3.0	2	0.2	1	R	1.5	3	1	Tracks or Paths	2	130.94	3	1.69	1	6	1	1
1436	290231.1	962924	3.9	2	0.2	1	G	1	2	1	Tracks or Paths	2	105.77	3	1.22	1	6	1	1
1437	290229.9	962902	1.5	1	0.1	1	G	1	1	1	Tracks or Paths	2	88.20	3	0.10	1	6	1	1
1438	290179.9	962912	3.2	2	0.9	2	R	1.5	6	2	Tracks or Paths	2	122.55	3	-0.57	1	6	1	2
1439	290178.4	962935	3.7	2	0.3	1	R	1.5	3	1	Tracks or Paths	2	142.38	3	-1.02	1	6	1	1
1440	290179.7	962958	3.5	2	0.1	1	G	1	2	1	Tracks or Paths	2	161.77	3	-0.33	1	6	1	1
1441	290130.6	962907	1.5	1	2.6	3	G	1	3	1	Minor Watercourse	6	130.37	3	1.21	1	18	3	3
1442	290130.0	962929	1.4	1	1.4	3	R	1.5	4.5	3	Minor Watercourse	6	152.55	3	1.66	1	18	3	3
1443	290129.9	962952	0.8	1	2.5	3	R	1.5	4.5	3	Minor Watercourse	6	174.86	3	2.07	1	18	3	3
1444	290080.2	962949	0.6	1	0.3	1	G	1	1	1	Minor Watercourse	6	180.63	3	12.13	2	18	3	3
1445	290080.8	962931	0.5	1	0.6	2	R	1.5	3	1	Minor Watercourse	6	167.67	3	1.62	1	18	3	3
1446	290076.4	962928	0.6	1	0.5	1	G	1	1	1	Minor Watercourse	6	167.04	3	1.58	1	18	3	3
1447	290079.9	962912	1.1	1	1	3	G	1	3	1	Minor Watercourse	6	151.06	3	1.45	1	18	3	3
1448	290030.7	962926	5.3	4	0.1	1	G	1	2	1	Minor Watercourse	6	135.72	3	10.62	2	18	3	3
1449	290050.0	962927	2.2	2	0.1	1	G	1	2	1	Minor Watercourse	6	154.21	3	12.14	2	18	3	3
1450	290024.2	962925	5.4	4	0.1	1	G	1	4	1	Minor Watercourse	6	129.75	3	10.07	2	18	3	3
1451	290032.3	962903	4.2	4	0.1	1	G	1	4	1	Minor Watercourse	6	145.17	3	10.90	2	18	3	3
1452	289979.9	962902	6.7	4	0.1	1	G	1	4	1	Minor Watercourse	6	100.56	3	8.96	1	18	3	3
1453	289962.3	962926	1.9	1	1.9	1	G	1	1	1	Minor Watercourse	6	90.10	3	7.26	1	18	3	3
1454	289974.1	962921	3.2	2	0.1	1	G	1	2	1	Minor Watercourse	6	84.89	3	7.24	1	18	3	3
1455	289918.7	962923	7.6	4	0	1	G	1	4	1	Minor Watercourse	6	44.56	3	4.12	1	18	3	3
1456	289939.9	962922	8.8	6	0	1	G	1	6	2	Minor Watercourse	6	57.31	3	6.65	1	18	3	6
1457	290029.9	962872	2.9	2	0.1	1	G	1	2	1	Tracks or Paths	2	130.94	3	-0.77	1	6	1	1
1458	290029.3	962825	2.8	2	0.1	2	G	1	2	1	Tracks or Paths	2	91.07	3	0.72	1	6	1	1
1459	290054.7	962826	2.3	2	0.2	1	G	1	2	1	Tracks or Paths	2	79.47	3	0.46	1	6	1	1
1460	290079.3	962827	1.7	1	0.1	1	G	1	1	1	Tracks or Paths	2	73.78	3	-0.32	1	6	1	1
1461	290079.1	962880	1.1	1	0.9	2	G	1	2	1	Minor Watercourse	6	124.60	3	0.88	1	18	3	3
1462	290910.1	962432	1.7	1	1	2	G	1	2	1	Important Habitat	8	1.35	4	0.03	1	32	5	5
1463	290919.7	962431	3.2	2	0.5	1	G	1	0.5	1	Important Habitat	8	4.78	4	0.26	1	32	5	5
1464	290919.8	962421	2.7	2	0.2	1	G	1	2	1	Important Habitat	8	4.89	4	0.49	1	32	5	5
1465	290919.8	962401	2.4	2	0.8	2	G	1	4	1	Important Habitat	8	1.67	4	0.05	1	32	5	5
1466	290920.1	962392	2.5	2	0.4	1	G	1	2	1	Important Habitat	8	1.18	4	0.04	1	32	5	5
1467	290919.6	962382	2.0	1	0.8	2	G	1	2	1	Important Habitat	8	1.63	4	0.03	1	32	5	5
1468	290919.6	962371	1.1	1	1.2	3	R	1.5	4.5	1	Important Habitat	8	1.90	4	-0.03	1	32	5	5
1469	290919.7	962362	1.2	1	1.2	3	R	1	3	1	Important Habitat	8	1.14	4	-0.01	1	32	5	5
1470	290919.3	962352	1.2	1	1.3	3	G	1	3	1	Important Habitat	8	1.27	4	-0.03	1	32	5	5
1471	290919.7	962342	1.4	1	1.5	3	G	1	3	1	Important Habitat	8	1.41	4	-0.03	1	32	5	5
1472	290910.4	962342	1.6	1	0.6	2	G	1	2	1	Important Habitat	8	0.63	4	-0.01	1	32	5	5
1473	290908.6	962352	1.3	1	1	2	G	1	2	1	Important Habitat	8	1.90	4	-0.04	1	32	5	5
1474	290909.6	962362	1.2	1	1.6	3	R	1.5	4.5	1	Important Habitat	8	1.44	4	-0.03	1	32	5	5
1475	290909.7	962372	1.2	1	1.5	3	R	1.5	4.5	1	Important Habitat	8	1.38	4	-0.02	1	32	5	5
1476	290910.6	962382	2.3	2	1.3	3	G	1	6	2	Important Habitat	8	1.24	4	0.05	1	32	5	10
1477	290909.9	962391	2.5	2	1.1	3	G	1	6	2	Important Habitat	8	2.21	4	0.07	1	32	5	10
1478	290910.0	962402	1.9	1	1	2	G	1	2	1	Important Habitat	8	1.49	4	0.04	1	32	5	5
1479	290908.6	962411	0.8	1	0.9	2	G	1	2	1	Important Habitat	8	2.64	4	0.02	1	32	5	5
1480	290910.0	962422	1.3	1	0.8	2	G	1	2	1	Important Habitat	8	1.51	4	0.04	1	32	5	5
1481	290900.5	962421	0.8	1	0.9	2	G	1	2	1	Important Habitat	8	2.28	4	0.03	1	32	5	5
1482	290899.8	962412	0.7	1	0.8	2	G	1	2	1	Important Habitat	8	0.88	4	0.01	1	32	5	5
1483	290929.3	962420	3.2	2	0.3	1	R	1.5	3	1	Important Habitat	8	11.14	3	-0.62	1	24	3	3
1484	290929.9	962412	3.1	2	0.3	1	G	1	2	1	Important Habitat	8	8.80	4	0.48	1	32	5	5
1485	290930.0	962401	2.6	2	2.6	2	G	1	2	1	Important Habitat	8	5.09	4	0.22	1	32	5	5
1486	290930.8	962391	2.5	2	0.3	1	R	1.5	3	1	Important Habitat	8	5.84	4	0.20	1	32	5	5
1487	290929.9	962382	1.7	1	0.3	1	G	1	1	1	Important Habitat	8	4.88	4	0.14	1	32	5	5
1488	290930.5	962371	1.2	1	0.2	1	G	1	1	1	Important Habitat	8	2.20	4	-0.02	1	32	5	5
1489	290929.7	962361	1.2	1	1	2	G	1	2	1	Important Habitat	8	1.85	4	-0.03	1	32	5	5
1490	290929.5	962351	1.2	1	1.2	3	G	1	3	1	Important Habitat	8	1.90	4	-0.03	1	32	5	5
1491	290929.9	962341	1.3	1	1.5	3	G	1	3	1	Important Habitat	8	1.88	4	-0.03	1	32	5	5
1492	290899.8	962342	1.6	1	1.7	3	G	1	3	1	Important Habitat	8	0.86	4	-0.02	1	32	5	5
1493	290898.2	962352	1.5	1	2	3	R	1.5	4.5	1	Important Habitat	8	2.51	4	-0.06	1	32	5	5
1494	290900.3	962332	1.3	1	1	3	G	1	3	1	Important Habitat	8	0.76	4	-0.01	1	32	5	5
1495	290899.8	962363	1.2	1	1.2	3	G	1	3	1	Important Habitat	8	0.64	4	-0.01	1	32	5	5
1496	290900.4	962371	1.1	1	1.2	3	G	1	3	1	Important Habitat	8	2.17	4	-0.01	1	32	5	5
1497	290900.4	962381	2.3	2	1.5	3	G	1	6	2	Important Habitat	8	2.21	4	0.08	1	32	5	10
1498	290899.8	962391	2.1	2	1.2	3	G	1	6	2	Important Habitat	8	1.						

1559	291249.9	962251	6.0	4	0.5	1	G	1	4	1	Important Habitat	8	15.38	3	-0.92	1	24	3	3
1560	291260.5	962252	2.7	2	0.7	2	R	1.5	6	2	Important Habitat	8	4.88	4	-0.15	1	32	5	10
1561	291269.3	962252	1.6	1	1.1	3	R	1.5	4.5	1	Important Habitat	8	1.56	4	-0.03	1	32	5	5
1562	291280.7	962252	1.6	1	1.2	3	R	1	3	1	Important Habitat	8	1.33	4	0.01	1	32	5	5
1563	291279.7	962242	1.6	1	1.5	3	R	1.5	4.5	1	Important Habitat	8	1.47	4	-0.02	1	32	5	5
1564	291280.3	962232	1.8	1	1.8	3	R	1	1	1	Important Habitat	8	1.09	1	0.00	1	32	5	9
1565	291268.8	962232	5.0	4	0.6	2	G	1	8	1	Important Habitat	8	1.87	4	-0.18	1	32	5	10
1566	291270.6	962241	2.2	2	1.6	3	G	1	6	2	Important Habitat	8	1.62	4	0.00	1	32	5	10
1567	291258.7	962241	5.7	4	0.8	2	G	1	8	2	Important Habitat	8	8.43	4	0.33	1	32	5	10
1568	291259.9	962231	4.2	4	0.5	1	G	1	4	1	Important Habitat	8	1.68	4	-0.06	1	32	5	5
1569	291250.3	962232	2.6	2	1	2	G	1	6.35	1	Important Habitat	8	0.27	1	0.27	1	32	5	3
1570	291240.2	962232	2.8	2	0.2	1	G	1	2	1	Important Habitat	8	15.48	3	-0.65	1	24	3	3
1571	291239.8	962241	3.2	2	0.6	2	G	1	4	1	Important Habitat	8	20.30	3	-0.87	1	24	3	3
1572	291229.1	962241	4.7	4	1.2	3	R	1.5	18	3	Important Habitat	8	29.12	3	-1.50	1	24	3	9
1573	291229.1	962232	5.2	4	0.3	1	G	1	8	1	Important Habitat	8	25.48	3	-1.39	1	24	3	3
1574	291219.5	962232	7.2	4	0.9	2	G	1	6	1	Important Habitat	8	33.82	3	-2.52	1	24	3	5
1575	291219.5	962242	5.4	4	1.3	3	G	1	12	2	Important Habitat	8	38.22	3	-2.35	1	24	3	3
1576	291210.0	962242	5.8	4	0.9	2	G	1	8	2	Important Habitat	8	46.90	3	-3.25	1	24	3	6
1577	291190.0	962232	7.4	4	1	2	G	1	8	2	Wind Turbine	6	58.66	3	-5.23	1	18	3	6
1578	291199.8	962242	7.5	4	0.7	2	G	1	8	2	Important Habitat	8	55.69	3	-4.38	1	24	3	6
1579	291199.1	962232	8.2	6	0.3	1	R	1.5	9	1	Wind Turbine	6	51.45	3	-4.10	1	18	3	6
1580	291209.6	962232	7.9	4	0.7	2	G	1	4	1	Important Habitat	8	42.93	3	-3.84	1	24	3	3
1581	291279.3	962222	3.6	2	0.7	2	G	1	4	1	Important Habitat	8	1.59	4	-0.09	1	32	5	5
1582	291290.1	962222	1.7	1	0.8	2	G	1	2	1	Important Habitat	8	1.40	4	-0.01	1	32	5	5
1583	291289.0	962212	2.0	2	3	3	G	1	6	2	Important Habitat	8	1.97	4	-0.05	1	32	5	10
1584	291289.6	962202	1.9	1	2.1	3	R	1.5	4.5	1	Important Habitat	8	1.50	4	-0.06	1	32	5	5
1585	291289.7	962192	2.3	1	2.3	3	R	1.5	4.68	1	Important Habitat	8	4.68	1	0.04	1	32	5	5
1586	291290.2	962181	2.5	2	2	3	G	1	6	2	Important Habitat	8	12.06	3	0.00	1	24	3	6
1587	291289.9	962171	3.2	2	1.7	3	R	1.5	9	2	Important Habitat	8	19.26	3	-0.33	1	24	3	6
1588	291280.1	962151	9.4	6	0.5	1	G	1	6	2	Important Habitat	8	36.76	3	-2.08	1	24	3	6
1589	291280.3	962162	6.6	4	0.7	2	G	1	8	2	Important Habitat	8	26.56	3	-1.12	1	24	3	6
1590	291279.6	962172	3.4	2	1.2	3	G	1.5	6	2	Important Habitat	8	16.53	1	-0.53	1	24	3	6
1591	291279.6	962182	2.1	2	0.8	2	R	1.5	6	1	Important Habitat	8	6.60	4	-0.22	1	32	5	10
1592	291280.0	962192	1.6	1	0.7	2	R	1.5	3	2	Important Habitat	8	1.48	4	-0.04	1	32	5	5
1593	291279.7	962212	2.5	2	1.1	3	R	1.5	9	2	Important Habitat	8	1.42	4	-0.01	1	32	5	10
1594	291270.2	962222	3.2	2	0.4	1	G	1	2	1	Important Habitat	8	1.43	4	0.00	1	32	5	5
1595	291269.8	962212	2.3	2	1	2	G	1	1.34	1	Important Habitat	8	1.34	1	0.06	1	32	5	3
1596	291269.6	962203	2.2	2	1.5	3	G	1	6	2	Important Habitat	8	0.84	4	-0.03	1	32	5	10
1597	291270.2	962192	2.2	2	0.4	1	G	1	2	1	Important Habitat	8	7.87	4	-0.23	1	32	5	5
1598	291269.9	962182	4.3	4	0.3	1	G	1	4	1	Important Habitat	8	12.16	3	-0.38	1	24	3	3
1599	291270.2	962171	7.9	4	0.9	2	G	1	8	2	Important Habitat	8	19.43	3	-1.27	1	24	3	6
1600	291269.9	962161	8.8	6	0.7	2	G	1	12	1	Important Habitat	8	28.73	3	-2.48	1	24	3	6
1601	291270.3	962152	7.0	4	0.3	1	G	1	4	1	Important Habitat	8	37.60	3	-3.47	1	24	3	3
1602	291259.9	962151	5.1	4	0.6	2	G	1	8	2	Important Habitat	8	42.20	3	-4.06	1	24	3	6
1603	291260.0	962161	6.6	4	0.3	1	R	1.5	6	2	Important Habitat	8	33.59	3	-3.20	1	24	3	6
1604	291259.3	962172	7.2	4	0.3	1	G	1	4	1	Important Habitat	8	25.94	3	-1.27	1	24	3	3
1605	291259.1	962182	6.7	4	0.3	1	G	1	4	1	Important Habitat	8	16.99	3	-0.53	1	24	3	3
1606	291259.8	962192	4.1	4	0.2	1	G	1	4	1	Important Habitat	8	7.61	4	0.11	1	32	5	5
1607	291259.6	962211	2.3	2	0.6	2	G	1	4	1	Important Habitat	8	1.88	4	0.00	1	32	5	5
1608	291258.3	962222	2.5	2	0.4	1	R	1.5	3	1	Important Habitat	8	2.39	4	-0.04	1	32	5	5
1609	291249.7	962222	2.5	2	0.3	1	R	1.5	3	1	Important Habitat	8	3.91	4	-0.10	1	32	5	5
1610	291249.2	962211	2.7	2	0.5	1	G	1	2	1	Important Habitat	8	2.05	4	-0.02	1	32	5	5
1611	291250.1	962201	4.5	4	4.5	2	G	1	4.5	2	Important Habitat	8	1.86	1	0.08	1	32	5	10
1612	291249.9	962192	6.0	4	0.5	1	G	1	4	1	Important Habitat	8	8.09	4	-0.68	1	32	5	5
1613	291249.7	962182	7.1	4	0.4	1	G	1	4	1	Important Habitat	8	17.16	3	-1.41	1	24	3	3
1614	291249.9	962172	7.2	4	0.3	1	G	1	4	1	Important Habitat	8	26.87	3	-2.17	1	24	3	3
1615	291249.6	962162	6.7	4	0.6	2	G	1	8	2	Important Habitat	8	36.75	3	-3.03	1	24	3	6
1616	291249.8	962152	6.3	4	1.1	3	G	1.5	18	1	Important Habitat	8	46.38	3	-3.78	1	24	3	6
1617	291239.0	962192	6.7	4	0.3	1	G	1	4	1	Wind Turbine	6	7.84	4	-0.41	1	24	3	3
1618	291240.0	962202	6.2	4	0.3	1	G	1	4	1	Wind Turbine	6	2.00	4	0.19	1	24	3	3
1619	291239.7	962212	4.2	4	0.2	1	G	1	4	1	Important Habitat	8	10.55	3	-0.54	1	24	3	3
1620	291239.9	962222	3.3	2	0.2	1	G	1	2	1	Important Habitat	8	11.08	3	-0.53	1	24	3	3
1621	291229.7	962222	5.1	4	0.2	1	G	1	4	1	Important Habitat	8	20.81	3	-1.22	1	24	3	3
1622	291229.4	962212	4.9	4	0.1	1	G	1	4	1	Wind Turbine	6	15.06	3	-0.08	1	18	3	3
1623	291229.3	962191	6.9	4	0.3	1	G	1	4	1	Wind Turbine	6	13.08	3	-1.43	1	18	3	3
1624	291230.2	962182	7.6	4	0.2	1	G	1	4	1	Wind Turbine	6	20.34	3	-2.10	1	18	3	3
1625	291230.1	962172	7.7	4	0.5	1	G	1	4	1	Wind Turbine	6	29.71	3	-2.93	1	18	3	3
1626	291230.3	962162	7.7	4	0.6	2	G	1	8	1	Wind Turbine	6	39.18	2	-3.72	1	18	3	6
1627	291229.9	962152	7.5	4	1	2	G	1	8.85	2	Wind Turbine	6	48.85	3	-4.54	1	18	3	6
1628	291219.7	962152	6.9	4	0.7	2	R	1.5	12	2	Wind Turbine	6	52.05	3	-5.68	1	18	3	6
1629	291219.6	962161	7.6	4	0.2	1	R	1.5	6	2	Wind Turbine	6	43.16	3	-4.90	1	18	3	6
1630	291219.6	962172	7.5	4	0.4	1	R	1.5	6	2	Wind Turbine	6	34.27	3	-4.03	1	18	3	6
1631	291220.0	962182	7.3	4	0.3	1	G	1	4	1	Wind Turbine	6	26.44	3	-3.13	1	18	3	3
1632	291219.8	962191	7.4	4	0.4	1	G	1	7.4	1	Wind Turbine	6	21.05	1	-1.42	1	18	3	3
1633	291219.6	962202	7.7	4	0.3	1	G	1	4	1	Wind Turbine	6	19.51	3	-1.62	1	18	3	3
1634	291220.0	962211	7.5	4	0.3	1	G	1	4	1	Wind Turbine	6	22.19	3	-1.07	1	18	3	3
1635	291219.7	962222	7.7	4	0.2	1	R	1.5	6	2	Wind Turbine	6	28.96	3	-1.29	1	18	3	6
1636	291210.4	962222	8.0	6	0.4	1	R	1	0	1	Wind Turbine	6	36.01	3	-2.55	1	18	3	3
1637	291209.7	962212	8.7	6	0.7	2	G	1	6	1	Wind Turbine	6	31.49	3	-2.62	1	18	3	3
1638	291209.8	962202	8.0	4	0.4	1	G	1	6	1	Wind Turbine	6	29.26	3	-2.78	1	18	3	3
1639	291209.8	962192	7.5	4	0.5	1	R	1.5	6	2	Wind Turbine	6	30.39	3	-3.52	1	18	3	6
1640	291210.1	962182	7.1	4	0.3	1	G												

1701	292199.9	962622	2.8	2		1	2	R	1.5	6	2	Wind Turbine	6	43.70	3	1.04	1	18	3	6
1702	292189.8	962622	2.9	2		1.4	3	R	1.5	9	2	Wind Turbine	6	52.74	3	1.04	1	18	3	6
1703	292179.9	962622	3.0	2		1.8	3	R	1.5	9	2	Wind Turbine	6	61.94	3	1.03	1	18	3	6
1704	292169.5	962621	3.2	2		1	3	R	1.5	9	2	Wind Turbine	6	71.90	3	1.03	1	18	3	6
1705	292159.9	962622	3.5	2		1	2	R	1.5	6	2	Wind Turbine	6	81.02	3	0.97	1	18	3	6
1716	292249.8	962572	2.8	2		1.1	3	R	1.5	9	2	Wind Turbine	6	74.47	3	1.44	1	18	3	6
1707	292179.9	962612	2.8	2		1.1	3	R	1.5	9	2	Wind Turbine	6	66.05	3	1.53	1	18	3	6
1708	292189.9	962612	2.8	2		1.2	3	R	1.5	9	2	Wind Turbine	6	57.44	3	1.53	1	18	3	6
1709	292199.9	962612	2.8	2		0.8	2	G	1	4	1	Wind Turbine	6	49.35	3	1.54	1	18	3	6
1710	292219.9	962612	2.8	2		0.2	1	R	1.5	3	1	Wind Turbine	6	36.19	3	1.54	1	18	3	6
1711	292229.9	962612	2.8	2		0.9	2	R	1.5	3	1	Wind Turbine	6	32.35	3	1.55	1	18	3	6
1712	292239.9	962612	2.8	2		1	2	G	1	2	1	Wind Turbine	6	31.36	3	1.55	1	18	3	6
1713	292259.9	962602	3.5	2		0.2	1	G	1	2	1	Wind Turbine	6	46.73	3	1.96	1	18	3	6
1714	292259.9	962592	3.2	2		0.2	1	R	1.5	3	1	Wind Turbine	6	55.77	3	2.50	1	18	3	6
1715	292259.7	962572	2.9	2		0.4	1	R	1.5	3	1	Wind Turbine	6	74.69	3	3.50	1	18	3	6
1716	292249.8	962572	2.8	2		0.2	1	R	1.5	3	1	Wind Turbine	6	72.13	3	3.50	1	18	3	6
1717	292239.9	962572	2.8	2		0.5	1	R	1.5	3	1	Wind Turbine	6	71.34	3	3.52	1	18	3	6
1718	292229.9	962572	2.8	2		0.5	1	R	1.5	3	1	Wind Turbine	6	71.78	3	3.52	1	18	3	6
1719	292219.9	962572	2.8	2		0.9	2	R	1.5	6	2	Wind Turbine	6	73.59	3	3.52	1	18	3	6
1720	292199.9	962572	2.8	2		0.7	2	R	1.5	6	2	Wind Turbine	6	80.88	3	3.51	1	18	3	6
1721	292189.9	962572	2.8	2		1.2	3	G	1	6	2	Wind Turbine	6	86.05	3	3.51	1	18	3	6
1722	292179.9	962572	2.8	2		1.1	3	R	1.5	9	2	Wind Turbine	6	92.01	3	3.50	1	18	3	6
1723	292169.9	962572	3.0	2		1.8	3	R	1.5	9	2	Wind Turbine	6	98.65	3	3.51	1	18	3	6
1724	292169.9	962582	2.8	2		1.7	3	R	1.5	9	2	Wind Turbine	6	91.68	3	3.00	1	18	3	6
1725	292169.9	962592	2.8	2		2	3	R	1.5	9	2	Wind Turbine	6	85.32	3	2.51	1	18	3	6
1726	292169.9	962602	2.8	2		1.4	3	R	1.5	9	2	Wind Turbine	6	79.70	3	2.02	1	18	3	6
1727	292180.0	962602	2.8	2		1.6	3	R	1.5	9	2	Wind Turbine	6	71.24	3	2.02	1	18	3	6
1728	292179.8	962592	2.8	2		2.1	3	R	1.5	9	2	Wind Turbine	6	77.53	3	2.51	1	18	3	6
1729	292179.6	962581	2.8	2		1.6	3	R	1.5	9	2	Wind Turbine	6	84.96	3	3.02	1	18	3	6
1730	292189.9	962582	2.8	2		1	2	R	1.5	6	2	Wind Turbine	6	77.96	3	3.01	1	18	3	6
1731	292199.8	962582	2.8	2		1	2	R	1.5	6	2	Wind Turbine	6	72.09	3	3.01	1	18	3	6
1732	292219.7	962582	2.8	2		0.7	2	R	1.5	6	2	Wind Turbine	6	64.06	3	3.03	1	18	3	6
1733	292230.5	962582	2.8	2		0.7	2	R	1.5	6	2	Wind Turbine	6	61.46	3	3.01	1	18	3	6
1734	292240.0	962581	2.8	2		0.6	2	R	1.5	6	2	Wind Turbine	6	61.62	3	3.04	1	18	3	6
1735	292249.9	962582	2.8	2		0.5	1	G	1	2	1	Wind Turbine	6	62.45	3	3.02	1	18	3	6
1736	292249.9	962592	2.8	2		0.4	1	R	1.5	3	1	Wind Turbine	6	52.66	3	2.53	1	18	3	6
1737	292249.9	962602	2.8	2		1	2	R	1.5	3	1	Wind Turbine	6	42.97	3	2.04	1	18	3	6
1738	292239.7	962601	2.8	2		0.4	1	R	1.5	3	1	Wind Turbine	6	41.59	3	2.06	1	18	3	6
1739	292239.9	962592	2.8	2		0.6	2	R	1.5	6	2	Wind Turbine	6	51.34	3	2.54	1	18	3	6
1740	292229.9	962592	2.8	2		0.6	2	R	1.5	6	2	Wind Turbine	6	51.95	3	2.53	1	18	3	6
1741	292230.2	962602	2.8	2		0.8	2	R	1.5	6	2	Wind Turbine	6	41.57	3	2.01	1	18	3	6
1742	292220.9	962601	2.8	2		0.7	2	R	1.5	6	2	Wind Turbine	6	45.22	3	2.06	1	18	3	6
1743	292219.9	962592	2.8	2		0.5	1	G	1	2	1	Wind Turbine	6	54.42	3	2.53	1	18	3	6
1744	292199.9	962592	2.8	2		1.3	3	G	1	6	2	Wind Turbine	6	63.94	3	2.52	1	18	3	6
1745	292189.9	962592	2.8	2		1.2	3	R	1.5	9	2	Wind Turbine	6	70.37	3	2.52	1	18	3	6
1746	292189.6	962602	2.8	2		1.4	3	R	1.5	9	2	Wind Turbine	6	63.60	3	2.02	1	18	3	6
1747	292199.9	962602	2.8	2		0.7	2	R	1.5	6	2	Wind Turbine	6	56.23	3	2.03	1	18	3	6
1748	291959.9	962932	1.6	1		0.5	1	R	1.5	4.5	1	Wind Turbine	6	40.76	3	-1.02	1	18	3	6
1749	291959.9	962932	1.4	1		0.7	2	G	1	2	1	Wind Turbine	6	47.29	3	-1.26	1	18	3	6
1750	291959.9	962942	1.4	1		0.4	1	R	1.5	1.5	1	Wind Turbine	6	54.87	3	-1.51	1	18	3	6
1751	291959.9	962952	1.5	1		0.7	2	R	1.5	3	1	Wind Turbine	6	63.13	3	-1.75	1	18	3	6
1752	291959.2	962962	1.6	1		1.1	3	R	1.5	4.5	1	Wind Turbine	6	72.78	3	-2.02	1	18	3	6
1753	291959.9	962972	1.7	1		1	3	R	1.5	4.5	1	Wind Turbine	6	80.84	3	-2.30	1	18	3	6
1754	291949.9	962962	1.7	1		1	2	R	1	2	1	Wind Turbine	6	76.96	3	-1.99	1	18	3	6
1755	291949.9	962952	1.6	1		0.8	2	G	1	2	1	Wind Turbine	6	68.91	3	-1.69	1	18	3	6
1756	291969.9	962962	1.5	1		0.8	2	G	1	2	1	Wind Turbine	6	67.80	3	-2.06	1	18	3	6
1757	291980.2	962962	1.6	1		1	2	R	1.5	3	1	Wind Turbine	6	65.00	3	-2.14	1	18	3	6
1758	291980.6	962962	1.6	1		0.7	2	R	1	2	1	Wind Turbine	6	63.97	3	-2.25	1	18	3	6
1759	291999.9	962962	1.6	1		0.6	2	G	1	2	1	Wind Turbine	6	64.09	3	-2.34	1	18	3	6
1760	292000.3	962952	1.6	1		0.4	1	G	1	1	1	Wind Turbine	6	54.65	3	-2.09	1	18	3	6
1761	291999.9	962942	1.6	1		0.7	2	R	1.5	3	1	Wind Turbine	6	44.25	3	-1.82	1	18	3	6
1762	291999.9	962932	1.6	1		0.6	2	R	1.5	3	1	Wind Turbine	6	34.40	3	-1.56	1	18	3	6
1763	291999.7	962922	2.1	1		0.5	2	R	1.5	3	1	Wind Turbine	6	24.73	3	-1.30	1	18	3	6
1764	291989.9	962921	1.8	1		0.6	2	R	1	2	1	Wind Turbine	6	23.69	3	-1.21	1	18	3	6
1765	291979.9	962922	1.6	1		0.6	2	R	1.5	3	1	Wind Turbine	6	27.11	3	-1.16	1	18	3	6
1766	291969.9	962922	1.6	1		0.4	1	R	1.5	1.5	1	Wind Turbine	6	33.14	3	-1.09	1	18	3	6
1767	291969.9	962932	1.4	1		0.7	2	R	1.5	3	1	Wind Turbine	6	40.90	3	-1.33	1	18	3	6
1768	291969.9	962942	1.4	1		0.6	2	R	1.5	3	1	Wind Turbine	6	49.47	3	-1.57	1	18	3	6
1769	291969.9	962952	1.4	1		0.7	2	G	1	2	1	Wind Turbine	6	58.50	3	-1.82	1	18	3	6
1770	291979.9	962952	1.5	1		0.9	2	G	1	2	1	Wind Turbine	6	55.30	3	-1.88	1	18	3	6
1771	291989.9	962952	1.6	1		0.6	2	G	1	2	1	Wind Turbine	6	53.81	3	-1.98	1	18	3	6
1772	291989.9	962942	1.5	1		1.1	3	R	1.5	4.5	1	Wind Turbine	6	43.83	3	-1.72	1	18	3	6
1773	291989.9	962932	1.5	1		1	2	G	1	2	1	Wind Turbine	6	33.86	3	-1.47	1	18	3	6
1774	291979.9	962932	1.4	1		1.1	3	R	1.5	4.5	1	Wind Turbine	6	36.19	3	-1.40	1	18	3	6
1775	291979.9	962942	1.5	1		1	2	G	1	2	1	Wind Turbine	6	45.63	3	-1.64	1	18	3	6
1776	291939.9	962962	1.7	1		1.2	3	G	1	3	1	Wind Turbine	6	82.98	3	-1.97	1	18	3	6
1777	291930.5	962961	1.7	1		1.4	3	R	1.5	4.5	1	Wind Turbine	6	89.03	3	-1.95	1	18	3	6
1778	291919.9	962962	1.7	1		2.3	3	R	1.5	4.5	1	Wind Turbine	6	97.02	3	-1.94	1	18	3	6
1779	291909.9	962962	1.7	1		1.9	3	R	1.5	4.										

1843	291109.4	963252	2.1	2	0.9	2	R	1.5	6	2	Important Habitat	8	1.34	4	0.02	1	32	5	10
1844	291109.9	963262	2.0	1	2.2	3	R	1.5	4.5	1	Important Habitat	8	1.42	4	0.00	1	32	5	5
1845	291109.9	963272	2.3	2	2.5	3	R	1.5	9	2	Important Habitat	8	1.42	4	-0.03	1	32	5	10
1846	291109.9	963282	3.0	2	3	3	G	1	9	2	Important Habitat	8	1.42	4	-0.03	1	32	5	10
1847	291109.9	963292	2.5	2	3	3	R	1.5	9	2	Important Habitat	8	1.42	4	-0.02	1	32	5	10
1	1848	291119.9	963290	1.2	2	3.3	1	1.5	12	1	Important Habitat	8	1.42	4	0.01	1	32	5	10
1849	291119.9	963282	1.8	1	3	3	R	1.5	4.5	1	Important Habitat	8	1.42	4	-0.04	1	32	5	5
1850	291119.9	963272	1.6	1	2.5	3	R	1.5	4.5	1	Important Habitat	8	1.42	4	-0.04	1	32	5	5
1851	291119.9	963262	1.4	1	2	3	G	1	3	1	Important Habitat	8	1.42	4	-0.03	1	32	5	5
1852	291119.9	963252	1.4	1	1.6	3	1	1.5	4.5	1	Important Habitat	8	1.42	4	-0.03	1	32	5	5
1	1853	291119.9	963242	1.6	1	2	1	1	12	1	Important Habitat	8	1.42	4	0.01	1	32	5	10
1854	291119.9	963302	1.7	1	3.5	8	R	1.5	12	2	Important Habitat	8	1.42	4	-0.01	1	32	5	10
1855	291119.9	963312	1.7	1	3.5	8	R	1.5	12	2	Important Habitat	8	1.42	4	0.02	1	32	5	10
1856	291119.9	963322	1.9	1	2.7	3	G	1	3	1	Important Habitat	8	1.42	4	0.03	1	32	5	5
1857	291121.1	963332	2.1	2	2.3	3	G	1	6	2	Important Habitat	8	1.10	4	-0.02	1	32	5	10
1858	291109.9	963332	3.6	2	3.6	1	G	1.5	6	2	Important Habitat	8	1.42	4	0.03	1	32	5	10
1859	291099.9	963332	7.7	4	0.9	2	R	1	12	2	Important Habitat	8	1.42	4	0.06	1	32	5	10
1860	291089.9	963332	8.3	6	0.2	1	G	1	6	2	Important Habitat	8	10.16	3	0.94	1	24	3	6
1861	291109.9	963312	1.6	1	2.5	3	G	1	3	1	Important Habitat	8	1.42	4	0.02	1	32	5	5
1862	291109.9	963322	2.2	2	2	3	G	1	6	2	Important Habitat	8	1.42	4	0.02	1	32	5	10
1863	291099.9	963322	7.4	4	0.9	2	1	1	6	2	Important Habitat	8	1.42	4	-0.01	1	32	5	10
1864	291089.9	963322	10.6	6	0.3	1	G	1	6	2	Important Habitat	8	5.54	4	0.86	1	32	5	10
1865	291099.9	963312	4.3	4	0.9	2	G	1	8	2	Important Habitat	8	1.42	4	0.00	1	32	5	10
1866	291089.9	963312	11.8	6	0.6	2	G	1	12	2	Important Habitat	8	5.54	4	0.94	1	32	5	10
1867	291089.9	963302	10.2	6	0.8	2	G	1	12	2	Important Habitat	8	5.54	4	0.77	1	32	5	10
1868	291099.9	963302	3.2	2	1.4	3	0.00	0.00	0.00	0.00	Important Habitat	8	1.42	4	0.00	1	32	5	10
1869	291109.9	963302	2.2	2	8	1.5	2.4	1.2	4.2	1	Important Habitat	8	1.42	4	-0.02	1	32	5	15
1870	291069.9	963302	7.8	4	0.2	1	G	1	4	1	Wind Turbine	6	12.74	3	2.53	1	18	3	3
1871	291069.9	963312	4.8	4	0.2	1	G	1	4	1	Wind Turbine	6	20.41	3	1.95	1	18	3	3
1872	291069.9	963322	6.5	4	0.2	1	G	1	4	1	Important Habitat	8	25.41	3	2.89	1	24	3	3
1873	291069.9	963332	6.5	4	0.2	1	R	1.5	6	2	Important Habitat	8	26.80	3	2.26	1	24	3	3
1874	291079.9	963332	6.3	4	0.3	1	G	1.5	6	2	Important Habitat	8	17.63	3	1.53	1	24	3	3
1875	291059.9	963332	7.6	4	0.3	1	G	1	4	1	Important Habitat	8	36.41	3	1.00	1	24	3	3
1876	291059.9	963322	11.4	6	0.4	1	G	1	6	2	Wind Turbine	6	34.26	3	0.04	1	18	3	6
1877	291059.9	963312	8.0	6	0.2	1	G	1	6	2	Wind Turbine	6	26.83	3	1.25	1	18	3	6
1878	291059.9	963302	9.0	6	0.1	1	R	1.5	9	2	Wind Turbine	6	21.58	3	3.05	1	18	3	6
1879	291059.9	963292	6.0	4	0.3	1	G	1	6	2	Wind Turbine	6	20.28	3	3.67	1	18	3	3
1880	291049.9	963302	14.0	6	0.1	1	R	1.5	9	2	Wind Turbine	6	31.12	3	1.69	1	18	3	6
1881	291049.9	963312	13.6	6	0.1	1	G	1	6	2	Wind Turbine	6	34.97	3	0.32	1	18	3	6
1882	291049.9	963322	11.4	6	0.2	1	G	1	6	2	Wind Turbine	6	40.95	3	-1.79	1	18	3	6
1883	291049.9	963332	9.9	6	0.3	1	R	1.5	9	2	Important Habitat	8	46.19	3	-0.36	1	24	3	6
1884	291039.9	963332	6	6	0.4	1	G	1	6	2	Wind Turbine	6	-55.09	3	-1.92	1	18	3	6
1885	291039.9	963322	14.6	6	0.7	2	G	1	12	2	Wind Turbine	6	48.79	3	-3.47	1	18	3	6
1886	291039.9	963312	20.8	8	0.4	1	G	1	8	2	Wind Turbine	6	43.89	3	-2.53	1	18	3	6
1887	291039.9	963302	21.6	8	0.1	1	G	1	8	2	Wind Turbine	6	40.89	3	-1.56	1	18	3	6
1888	291029.9	963302	23.2	8	0.2	1	G	1	8	2	Wind Turbine	6	50.75	3	-5.62	1	18	3	6
1889	291029.9	963312	19.4	8	0.5	2	G	1	16	2	Wind Turbine	6	53.19	3	-6.46	1	18	3	6
1890	291029.9	963322	8	8	15.5	2	FALSE	FALSE	FALSE	FALSE	Wind Turbine	6	57.31	3	-4.40	1	18	3	0
1891	291029.9	963332	11.7	6	0.8	1	R	1.5	9	2	Wind Turbine	6	62.76	3	-6.17	1	18	3	6
1892	291069.9	963292	11.6	6	0.1	1	G	1	6	2	Wind Turbine	6	10.41	3	1.78	1	18	3	6
1893	291059.9	963282	12.5	6	0.1	1	G	1	6	2	Wind Turbine	6	23.61	3	2.74	1	18	3	6
1894	291069.9	963282	11.4	6	0.2	1	G	1	6	2	Wind Turbine	6	15.95	3	0.76	1	18	3	6
1895	291049.9	963282	11.4	6	0.1	1	G	1	6	2	Wind Turbine	6	32.57	3	1.08	1	18	3	6
1896	291039.9	963282	20.4	8	0.1	1	G	1	8	2	Wind Turbine	6	42.00	3	-0.19	1	18	3	6
1897	291029.9	963282	26.5	8	0.1	1	G	1	8	2	Wind Turbine	6	51.65	3	-4.37	1	18	3	6
1898	291029.9	963272	29.9	8	0.2	1	G	1	8	2	Wind Turbine	6	54.89	3	-5.23	1	18	3	6
1899	291039.9	963272	22.3	8	0.1	1	R	1.5	12	2	Wind Turbine	6	45.93	3	-1.07	1	18	3	6
1900	291049.9	963272	19.4	8	0.1	1	G	1	8	2	Wind Turbine	6	11.71	3	1.17	1	18	3	6
1901	291059.9	963272	20.4	8	0.3	1	G	1	8	2	Wind Turbine	6	30.06	3	0.61	1	18	3	6
1902	291069.9	963272	17.8	8	0.2	1	G	1	8	2	Important Habitat	8	20.42	3	2.28	1	24	3	6
1903	291069.9	963262	11.3	6	0.5	1	G	1	6	2	Important Habitat	8	23.33	3	-0.83	1	24	3	6
1904	291059.9	963262	15.2	8	0.2	1	G	1	8	2	Important Habitat	8	32.44	3	-0.42	1	24	3	6
1905	291049.9	963262	23.3	8	0.1	1	G	1	8	2	Important Habitat	8	41.95	3	-0.04	1	24	3	6
1906	291039.9	963262	29.5	8	0.1	1	R	1.5	12	2	Minor Watercourse	6	48.16	3	6.09	1	18	3	6
1907	291029.9	963262	29.9	8	0.1	1	R	1.5	12	2	Minor Watercourse	6	51.01	3	3.57	1	18	3	6
1908	291029.9	963252	15.2	8	0.1	1	R	1.5	12	2	Minor Watercourse	6	41.58	3	1.81	1	18	3	6
1909	291029.9	963242	13.4	6	0.4	1	G	1	6	2	Minor Watercourse	6	32.50	3	0.50	1	18	3	6
1910	291039.9	963242	15.2	8	0.1	1	R	1.5	12	2	Minor Watercourse	6	29.13	3	2.64	1	18	3	6
1911	291039.9	963252	18.0	8	0.1	1	G	1.5	12	2	Minor Watercourse	6	39.01	3	4.40	1	18	3	6
1912	291049.9	963252	17.3	8	0.1	1	R	1.5	12	2	Minor Watercourse	6	35.20	3	4.35	1	18	3	6
1913	291059.9	963252	11.3	6	0.3	1	R	1.5	9	2	Minor Watercourse	6	33.64	3	5.62	1	18	3	6
1914	291069.9	963252	9.3	6	0.3	1	G	1	6	2	Important Habitat	8	25.41	3	-1.32	1	24	3	6
1915	291069.9	963242	8.7	6	0.4	1	G	1.5	9	2	Minor Watercourse	6	24.08	3	2.97	1	18	3	6
1916	291059.9	963242	13.2	6	0.1	1	G	1	6	2	Minor Watercourse	6	23.64	3	3.49	1	18	3	6
1917	291049.9	963242	14.9	6	0.3	1	G	1	6	2	Minor Watercourse	6	25.81	3	2.08	1	18	3	6
1918	291000.0	962140	3.0	2	0.5	1	G	1	2	1	Important Habitat	8	85.50	3	1.18	1	24	3	3
1919	291008.2	962142	3.0	2	0.6	2	G	1	4	1	Important Habitat	8	87.13	3	1.59	1	24	3	3
1920	290997.9	962147	2.8	2	0.4	1	G	1.5	3	1	Important Habitat	8	78.39	3	1.02	1	24	3	3
1921	291000.8	962135	3.0	2	0.2	2	G	1	4	1	Minor Watercourse	6	84.19	2	17.39	2	18	3	3
1922	290990.4	962139	3.2	2	0.7	2	G	1	4	1	Minor Watercourse	6	76.86	3	16.84	2	18	3	3
1923	291289.9	961792	2.0	1	1.8	3	1.5	4.5	1	1	Minor Watercourse	6	5.88	4</					

1985	291339.9	961842	4.4	4	0.2	1	G	1	4	1	Important Habitat	8	24.68	3	1.11	1	24	3	3
1986	291329.9	961842	3.8	2	0.2	1	G	1	2	1	Important Habitat	8	14.70	3	0.51	1	24	3	3
1987	291319.9	961842	2.2	2	1.6	3	G	1	6	2	Important Habitat	8	4.83	4	0.11	1	32	5	10
1988	291309.9	961842	2.2	2	2.3	3	R	1.5	9	2	Important Habitat	8	1.42	4	-0.04	1	32	5	10
1989	291299.9	961842	2.1	2	1.7	3	G	1	6	2	Important Habitat	8	1.42	4	-0.04	1	32	5	10
1990	291300.5	961832	2.2	2	1.5	3	R	1.5	9	2	Important Habitat	8	1.12	2	-0.01	1	32	3	10
1991	291299.9	961822	2.2	2	2	3	R	1	9	2	Important Habitat	8	11.38	3	-0.21	1	24	3	6
1992	291299.9	961812	2.1	2	2.4	3	G	1	6	2	Important Habitat	8	19.00	3	0.06	1	24	3	6
1993	291309.9	961812	2.1	2	2.7	3	G	1	6	2	Important Habitat	8	21.38	3	-0.37	1	24	3	6
1994	291319.9	961812	2.1	2	1.7	3	G	1	6	2	Important Habitat	8	23.45	3	-0.02	1	24	3	6
1995	291329.9	961812	2.4	2	1.5	3	R	1.5	9	2	Important Habitat	8	29.03	3	0.34	1	24	3	6
1996	291330.0	961821	2.0	2	1.8	3	R	1.5	9	2	Important Habitat	8	22.23	3	0.17	1	24	3	6
1997	291329.9	961832	2.1	2	1.3	3	R	1.5	9	2	Important Habitat	8	15.96	3	0.29	1	24	3	6
1998	291319.9	961832	1.9	1	2.8	3	G	1	3	1	Important Habitat	8	7.88	4	0.04	1	32	5	5
1999	291309.9	961832	2.3	2	2.7	3	R	1.5	9	2	Important Habitat	8	1.42	4	-0.04	1	32	5	10
2000	291309.9	961822	2.2	2	2.9	3	G	1.5	9	2	Important Habitat	8	11.38	3	-0.21	1	24	3	6
2001	291319.9	961822	2.1	2	3.5	8	R	1.5	24	3	Important Habitat	8	14.91	3	0.14	1	24	3	6
2002	291749.9	962082	4.9	4	1	2	R	1.5	12	2	Wind Turbine	6	24.12	3	-1.10	1	18	3	6
2003	291759.9	962082	5.2	4	1	2	G	1	8	2	Wind Turbine	6	33.75	3	-1.57	1	18	3	6
2004	291769.9	962082	5.6	4	1	2	R	1.5	12	2	Wind Turbine	6	43.55	3	-2.17	1	18	3	6
2005	291779.9	962082	6.1	4	0.6	2	G	1	4	1	Wind Turbine	6	53.42	3	-2.67	1	18	3	6
2006	291789.9	962082	7.6	4	0.5	1	G	1	4	1	Wind Turbine	6	63.34	3	-3.23	1	18	3	6
2007	291799.9	962082	8.5	6	0.2	1	G	1	6	2	Wind Turbine	6	73.28	3	-4.32	1	18	3	6
2008	291799.9	962072	8.2	6	0.3	1	R	1.5	9	2	Wind Turbine	6	72.91	3	-3.32	1	18	3	6
2009	291799.9	962062	7.4	4	0.1	1	G	1	4	1	Wind Turbine	6	73.90	3	-2.58	1	18	3	6
2010	291799.9	962052	7.1	4	0.1	1	R	1.5	9	2	Wind Turbine	6	76.21	3	-1.82	1	18	3	6
2011	291799.9	962042	6.6	4	0.1	1	R	1.5	6	2	Wind Turbine	6	79.71	3	-1.17	1	18	3	6
2012	291789.9	962042	5.1	4	0.3	1	R	1.5	6	2	Wind Turbine	6	70.68	3	-0.27	1	18	3	6
2013	291789.9	962052	5.6	4	0.3	1	G	1	4	1	Wind Turbine	6	66.71	3	-0.88	1	18	3	6
2014	291789.9	962062	5.8	4	0.4	1	R	1.5	6	2	Wind Turbine	6	64.06	3	-1.56	1	18	3	6
2015	291789.9	962072	6.6	4	0.9	2	R	1.5	12	2	Wind Turbine	6	62.91	3	-2.24	1	18	3	6
2016	291779.9	962072	5.2	4	0.5	1	G	1	8	2	Wind Turbine	6	52.92	3	-1.69	1	18	3	6
2017	291779.9	962062	4.4	4	0.9	2	G	1	8	2	Wind Turbine	6	54.28	3	-1.07	1	18	3	6
2018	291779.9	962052	4.3	4	0.6	2	R	1.5	12	2	Wind Turbine	6	57.38	3	-0.41	1	18	3	6
2019	291779.9	962042	4.1	4	0.5	1	R	1.5	6	2	Wind Turbine	6	61.95	3	0.20	1	18	3	6
2020	291769.9	962042	4.4	4	0.9	2	R	1.5	12	2	Wind Turbine	6	53.67	3	0.63	1	18	3	6
2021	291769.9	962052	4.3	4	0.3	1	G	1	4	1	Wind Turbine	6	48.32	3	0.06	1	18	3	6
2022	291769.9	962062	4.4	4	0.8	2	R	1.5	12	2	Wind Turbine	6	44.59	3	-0.62	1	18	3	6
2023	291769.9	962072	5.3	4	0.5	1	R	1.5	6	2	Wind Turbine	6	42.92	3	-1.24	1	18	3	6
2024	291759.9	962072	5.1	4	0.9	2	G	1	8	2	Wind Turbine	6	32.94	3	-0.79	1	18	3	6
2025	291759.9	962062	4.2	4	0.6	2	R	1.5	12	2	Wind Turbine	6	35.09	3	-0.16	1	18	3	6
2026	291760.9	962051	4.2	4	0.1	1	G	1	4	1	Wind Turbine	6	40.90	3	0.42	1	18	3	6
2027	291749.9	962042	4.8	4	1	2	G	1	8	2	Wind Turbine	6	39.57	3	1.51	1	18	3	6
2028	291739.9	962042	4.7	4	0.6	2	G	1	8	2	Wind Turbine	6	34.77	3	1.93	1	18	3	6
2029	291729.9	962042	4.4	4	0.2	1	G	1	4	1	Wind Turbine	6	32.43	3	2.20	1	18	3	6
2030	291719.9	962042	5.9	4	0.2	1	G	1	4	1	Wind Turbine	6	33.09	3	1.69	1	18	3	6
2031	291709.9	962042	9.8	6	0.5	1	R	1.5	9	2	Wind Turbine	6	36.57	3	0.38	1	18	3	6
2032	291710.4	962052	7.9	4	0.4	1	G	1	4	1	Wind Turbine	6	27.94	3	0.30	1	18	3	6
2033	291719.9	962052	5.3	4	0.2	1	R	1.5	6	2	Wind Turbine	6	23.42	3	0.99	1	18	3	6
2034	291729.9	962052	4.2	4	0.3	1	G	1	4	1	Wind Turbine	6	22.48	3	1.49	1	18	3	6
2035	291739.9	962052	4.4	4	0.3	1	R	1.5	6	2	Wind Turbine	6	25.74	3	1.21	1	18	3	6
2036	291749.9	962052	4.3	4	0.5	1	G	1	4	1	Wind Turbine	6	31.93	3	0.81	1	18	3	6
2037	291749.9	962062	3.9	2	0.3	1	G	1	4	1	Wind Turbine	6	25.96	3	0.24	1	18	3	6
2038	291739.9	962062	4.1	4	0.4	1	G	1	4	1	Wind Turbine	6	17.79	3	0.62	1	18	3	6
2039	291729.9	962062	4.2	4	0.2	1	G	1	4	1	Wind Turbine	6	12.63	3	0.80	1	18	3	6
2040	291719.9	962062	4.5	4	0.3	1	G	1	4	1	Wind Turbine	6	14.23	3	0.33	1	18	3	6
2041	291709.9	962072	7.6	4	0.4	1	G	1	4	1	Wind Turbine	6	17.30	3	-0.85	1	18	3	6
2042	291719.9	962072	3.5	2	0.5	1	G	1	4	1	Wind Turbine	6	7.51	3	-0.15	1	24	3	6
2043	291729.9	962072	3.7	2	0.4	1	R	1.5	3	1	Wind Turbine	6	3.66	4	0.13	1	24	3	6
2044	291739.9	962072	4.2	4	0.4	1	G	1	4	1	Wind Turbine	6	13.06	3	-0.09	1	18	3	6
2045	291749.9	962072	4.5	4	0.3	1	G	1	4	1	Wind Turbine	6	22.97	3	-0.36	1	18	3	6
2046	291739.9	962082	4.4	4	0.7	2	G	1	8	2	Wind Turbine	6	14.99	3	-0.74	1	18	3	6
2047	291729.9	962082	3.8	2	0.5	3	G	1	2	1	Wind Turbine	6	8.22	4	0.52	1	24	3	6
2048	291719.9	962082	3.5	2	1	1	G	1	2	1	Wind Turbine	6	10.51	3	-0.62	1	18	3	6
2049	291709.9	962082	5.2	4	0.8	2	G	1	8	2	Wind Turbine	6	18.80	3	-1.25	1	18	3	6
2050	291709.9	962092	2.5	2	0.6	2	G	1	4	1	Wind Turbine	6	24.65	3	-1.36	1	18	3	6
2051	291719.9	962092	2.2	2	0.5	1	G	1	2	1	Wind Turbine	6	19.10	3	-1.20	1	18	3	6
2052	291729.9	962092	3.7	2	0.5	1	R	1.5	3	1	Wind Turbine	6	17.94	3	-1.18	1	18	3	6
2053	291739.9	962092	4.9	4	0.5	4	G	1	4	1	Wind Turbine	6	21.88	3	1.50	1	18	3	6
2054	291749.9	962092	5.0	4	0.8	2	G	1	8	2	Wind Turbine	6	28.92	3	-1.88	1	18	3	6
2055	291749.9	962102	4.5	4	1.2	3	G	1	12	2	Wind Turbine	6	35.92	3	-2.65	1	18	3	6
2056	291749.9	962112	3.8	2	1.5	3	R	1.5	9	2	Wind Turbine	6	44.10	3	-3.18	1	18	3	6
2057	291749.9	962122	3.6	2	1.5	3	G	1	6	2	Wind Turbine	6	52.91	3	-3.57	1	18	3	6
2058	291749.9	962132	3.8	2	1	3	R	1.5	9	2	Wind Turbine	6	62.08	3	-3.90	1	18	3	6
2059	291759.9	962132	3.6	2	1.8	3	R	1.5	9	2	Wind Turbine	6	66.42	3	-4.47	1	18	3	6
2060	291769.9	962132	4.4	4	1.5	3	R	1.5	18	3	Wind Turbine	6	71.89	3	-4.98	1	18	3	6
2061	291779.9	962132	6.3	4	1.3	3	R	1.5	18	3	Wind Turbine	6	78.27	3	-5.90	1	18	3	6
2062	291789.9	962132	6.4	4	1.3	3	R	1.5	18	3	Wind Turbine	6	85.35	3	-6.95	1	18	3	6
2063	291799.9	962132	7.4	4	1.5	3	R	1.5	18	3	Wind Turbine	6	92.96	3	-8.04	1	18	3	6
2064	291799.9	962122	6.3	4	0.8	2	G	1	8	2	Wind Turbine	6	87.10	3	-7.66	1	18	3	6
2065	291789.9	962122	6.3	4	1	2	R	1.5	12	2	Wind Turbine	6	78.93	3	-6.61	1	18	3	6

2127	292039.7	962872	2.5	2	1	2	R	1.5	6	2	Wind Turbine	6	53.64	3	-0.02	1	18	3	6
2128	292040.0	962882	2.5	2	1.2	3	G	1	6	2	Wind Turbine	6	49.78	3	-0.41	1	18	3	6
2129	292039.8	962892	2.5	2	1.1	3	R	1.5	9	2	Wind Turbine	6	47.28	3	-0.77	1	18	3	6
2130	292039.1	962901	2.5	2	1.2	3	R	1.5	9	2	Wind Turbine	6	46.28	3	-1.13	1	18	3	6
2131	292039.5	962912	2.6	2	0.8	2	G	1	6	1	Wind Turbine	6	48.67	3	-1.54	1	18	3	6
2132	292040.1	962922	2.9	2	1.3	3	R	1	6	1	Wind Turbine	6	52.71	3	-1.99	1	18	3	6
2133	292040.2	962932	1.9	1	1.1	3	G	1	3	1	Wind Turbine	6	58.32	3	-2.39	1	18	3	6
2134	292050.7	962921	2.8	2	0.7	2	G	1	4	1	Wind Turbine	6	62.16	3	-2.15	1	18	3	3
2135	292050.0	962911	2.5	2	0.7	2	G	1	4	1	Wind Turbine	6	58.56	3	-1.76	1	18	3	3
2136	292049.8	962902	2.5	2	1	2	G	1	4	1	Wind Turbine	6	56.95	3	-1.39	1	18	3	3
2137	292050.1	962899	2.5	2	0.7	2	G	1	4	1	Wind Turbine	6	57.51	3	-1.01	1	18	3	3
2138	292049.5	962882	2.7	2	0.8	2	R	1.5	6	2	Wind Turbine	6	58.76	3	-0.63	1	18	3	6
2139	292050.2	962872	3.2	2	1	2	G	1	4	1	Wind Turbine	6	62.90	3	-0.31	1	18	3	3
2140	292060.3	962881	3.8	2	0.2	1	G	1	2	1	Wind Turbine	6	69.40	3	-1.18	1	18	3	3
2141	292059.7	962892	3.6	2	0.6	2	G	1	4	1	Wind Turbine	6	66.97	3	-1.35	1	18	3	3
2142	292059.8	962902	3.0	2	0.7	2	G	1.5	3	1	Wind Turbine	6	66.98	3	-1.64	1	18	3	3
2143	292060.1	962912	2.6	2	0.7	2	G	1	4	1	Wind Turbine	6	68.49	3	-1.99	1	18	3	3
2144	292059.7	962921	2.6	2	0.5	1	G	1	2	1	Wind Turbine	6	70.53	3	-2.33	1	18	3	3
2145	292069.8	962912	4.1	4	0.3	1	R	1.5	6	2	Important Habitat	8	68.91	3	3.29	1	24	3	6
2146	292070.7	962901	3.9	2	0.3	1	R	1.5	3	1	Important Habitat	8	71.64	3	2.86	1	24	3	3
2147	292070.4	962892	3.3	2	0.7	2	G	1	4	1	Important Habitat	8	74.63	3	3.15	1	24	3	3
2148	292080.1	962902	2.9	2	0.2	1	G	1	2	1	Important Habitat	8	62.30	3	2.41	1	24	3	3
2149	292079.4	962912	3.4	2	0.5	1	R	1.5	3	1	Important Habitat	8	59.79	3	2.62	1	24	3	3
2150	292107.7	962842	2.7	2	1.5	3	G	1	6	2	Important Habitat	8	44.07	3	1.41	1	24	3	6
2151	292094.0	962822	2.7	2	1.5	3	R	1.5	9	2	Important Habitat	8	63.40	3	1.99	1	24	3	3
2152	292084.0	962806	2.7	2	0.7	2	G	1	4	1	Important Habitat	8	77.18	3	2.77	1	24	3	3
2153	292129.5	962777	2.5	2	0.6	2	G	1	4	1	Important Habitat	8	55.33	3	1.24	1	24	3	3
2154	292140.5	962790	3.6	2	1.2	3	R	1.5	9	2	Important Habitat	8	39.30	3	1.44	1	24	3	6
2155	292151.7	962806	2.8	2	1.3	3	G	1	6	2	Important Habitat	8	22.01	3	0.91	1	24	3	6
2156	292185.7	962765	2.7	2	1.8	3	R	1.5	9	2	Important Habitat	8	9.10	4	0.38	1	32	5	10
2157	292173.0	962755	2.6	2	1.2	3	R	1.5	9	2	Important Habitat	8	22.39	3	-0.02	1	24	3	3
2158	292167.1	962708	2.5	2	1.3	3	R	1.5	9	2	Important Habitat	8	46.01	3	2.00	1	24	3	3
2159	292202.6	962717	2.5	2	1.2	3	G	1	6	2	Important Habitat	8	36.50	3	1.61	1	24	3	6
2160	292218.8	962725	2.5	2	0.4	1	R	1.5	3	1	Important Habitat	8	28.18	3	1.30	1	24	3	3
2161	292247.6	962679	4.3	4	0.2	1	G	1	4	1	Wind Turbine	6	37.66	3	-2.56	1	18	3	3
2162	292236.9	962669	4.3	4	0.3	1	R	1.5	6	2	Wind Turbine	6	25.77	3	-1.82	1	18	3	3
2163	291700.1	962472	1.3	1	0.9	1	G	1	4	1	Important Habitat	8	0.99	4	0.01	1	32	1	3
2164	291659.5	962472	5.8	4	0.4	1	G	1	4	1	Important Habitat	8	16.97	4	1.56	1	24	3	3
2165	291639.8	962472	5.4	4	0.5	1	G	1	4	1	Wind Turbine	6	13.53	3	-1.17	1	18	3	3
2166	291629.9	962471	5.0	4	0.4	1	G	1	4	1	Wind Turbine	6	9.45	4	-0.93	1	24	3	3
2167	291609.4	962462	6.2	4	0.3	1	G	1	4	1	Wind Turbine	6	21.62	3	-0.76	1	18	3	3
2168	291619.7	962462	6.3	4	0.4	1	G	1	4	1	Wind Turbine	6	11.36	3	-0.32	1	18	3	3
2169	291629.9	962462	5.9	4	0.5	1	G	1	4	1	Wind Turbine	6	1.13	4	0.02	1	24	3	3
2170	291640.1	962461	5.9	4	0.6	2	R	1.5	12	2	Wind Turbine	6	9.19	4	-0.06	1	24	3	6
2171	291649.5	962462	5.9	4	0.4	1	R	1.5	6	2	Wind Turbine	6	18.50	3	-0.34	1	18	3	6
2172	291670.4	962462	6.3	4	0.5	1	G	1	4	1	Important Habitat	8	18.43	3	1.85	1	24	3	3
2173	291680.3	962462	6.2	4	0.4	1	G	1	4	1	Important Habitat	8	11.90	3	1.13	1	24	3	3
2174	291690.2	962461	5.7	4	0.4	1	G	1	4	1	Important Habitat	8	11.84	3	0.73	1	24	3	3
2175	291700.8	962463	3.5	2	0.7	2	R	1.5	6	2	Important Habitat	8	10.48	3	0.16	1	24	3	6
2176	291710.8	962451	5.0	4	0.5	1	G	1	4	1	Important Habitat	8	22.27	3	0.59	1	24	3	3
2177	291699.5	962452	5.8	4	0.8	2	G	1	8	2	Important Habitat	8	21.54	3	1.07	1	24	3	6
2178	291689.7	962452	6.1	4	0.2	1	G	1	4	1	Important Habitat	8	21.18	3	1.52	1	24	3	3
2179	291679.7	962451	6.3	4	0.4	1	R	1.5	6	2	Important Habitat	8	22.64	3	2.13	1	24	3	6
2180	291669.7	962452	6.3	4	0.5	1	R	1	4	1	Important Habitat	8	26.43	3	2.78	1	24	3	3
2181	291659.6	962452	6.1	4	0.4	1	G	1	4	1	Wind Turbine	6	30.32	3	0.30	1	18	3	3
2182	291649.6	962452	5.8	4	0.3	1	G	1	4	1	Wind Turbine	6	21.16	3	0.68	1	18	3	3
2183	291630.2	962451	5.8	4	0.5	1	G	1	4	1	Wind Turbine	6	10.65	3	1.06	1	18	3	3
2184	291619.8	962452	6.2	4	0.4	1	G	1	4	1	Wind Turbine	6	15.29	3	0.70	1	18	3	3
2185	291609.9	962452	6.2	4	0.7	2	G	1	8	2	Wind Turbine	6	23.56	3	0.28	1	18	3	6
2186	291611.1	962443	6.1	4	0.3	1	G	1	4	1	Wind Turbine	6	27.65	3	1.20	1	18	3	3
2187	291619.8	962442	6.1	4	0.5	1	G	1	4	1	Wind Turbine	6	22.93	3	1.64	1	18	3	3
2188	291630.0	962442	5.7	4	0.6	2	R	1.5	12	2	Wind Turbine	6	20.48	3	2.03	1	18	3	6
2189	291639.7	962442	5.8	4	0.5	1	R	1.5	6	2	Wind Turbine	6	21.97	3	1.90	1	18	3	6
2190	291650.3	962442	5.9	4	0.3	1	G	1	4	1	Wind Turbine	6	27.99	3	1.70	1	18	3	3
2191	291659.9	962442	6.3	4	0.6	2	G	1	8	2	Wind Turbine	6	35.40	3	1.15	1	18	3	6
2192	291669.9	962443	6.3	4	0.4	1	R	1.5	6	2	Important Habitat	8	34.04	3	3.53	1	24	3	6
2193	291679.8	962442	6.3	4	0.3	1	G	1	4	1	Important Habitat	8	31.52	3	2.90	1	24	3	3
2194	291689.7	962441	6.3	4	0.5	1	G	1	4	1	Important Habitat	8	31.71	3	2.41	1	24	3	3
2195	291700.5	962442	6.1	4	0.7	2	R	1	8	2	Important Habitat	8	31.48	3	2.14	1	24	3	6
2196	291709.9	962441	5.7	4	0.2	1	R	1.5	6	2	Important Habitat	8	31.71	3	1.39	1	24	3	3
2197	291710.2	962432	6.2	4	0.4	1	R	1.5	6	2	Important Habitat	8	41.57	3	2.12	1	24	3	6
2198	291700.2	962431	6.3	4	0.5	1	R	1.5	6	2	Important Habitat	8	41.65	3	2.68	1	24	3	3
2199	291689.7	962431	6.4	4	0.5	1	G	1	4	1	Important Habitat	8	41.92	3	3.28	1	24	3	6
2200	291679.5	962431	6.4	4	0.3	1	R	1.5	6	2	Important Habitat	8	42.08	3	3.82	1	24	3	6
2201	291669.9	962431	6.4	4	0.6	2	R	1	8	2	Important Habitat	8	44.49	3	4.51	1	24	3	6
2202	291659.6	962431	6.4	4	0.3	1	G	1	4	1	Wind Turbine	6	42.00	3	2.06	1	18	3	3
2203	291649.6	962432	5.4	4	0.3	1	G	1	4	1	Wind Turbine	6	35.23	3	2.62	1	18	3	3
2204	291639.6	962432	4.6	4	0.5	1	G	1	4	1	Wind Turbine	6	31.55	3	2.87	1	18	3	3
2205	291629.3	962432	4.7	4	0.4	2	G	1	4	1	Wind Turbine	6	30.51	3	2.96	1	18	3	6
2206	291620.3	962431	5.5	4	0.4	1	G	1	4	1	Wind Turbine	6	32.40	3	2.69	1	18	3	3
2207	291619.7	962422	4.8	4	0.3	1	G	1	4	1	Wind Turbine	6	41.59	3	3.42	1	18	3	3
2208	291630.0	962422	3.																

2269	291560.4	962772	3.6	2	0.5	1	R	1.5	3	1	Wind Turbine	6	65.40	3	3.12	1	18	3	3
2270	291550.1	962772	3.7	2	0.6	2	G	1	4	2	Wind Turbine	6	61.72	3	2.53	1	18	3	3
2271	291550.0	962792	4.6	4	0.7	2	G	1	8	2	Wind Turbine	6	42.96	3	2.48	1	18	3	3
2272	291549.8	962802	4.7	4	0.6	2	G	1	8	2	Wind Turbine	6	34.64	3	2.38	1	18	3	3
2273	291549.5	962822	5.3	4	0.3	1	G	1	4	1	Wind Turbine	6	21.24	3	1.92	1	18	3	3
2274	291549.2	962842	5.7	4	0.1	1	G	1	4	1	Wind Turbine	6	22.77	3	1.77	1	18	3	3
2275	291539.8	962842	5.7	4	0.3	1	G	1	4	1	Wind Turbine	6	15.58	3	0.84	1	18	3	3
2276	291540.1	962822	5.2	4	0.5	1	R	1.5	6	2	Wind Turbine	6	13.13	3	1.14	1	18	3	3
2277	291539.8	962811	4.9	4	0.6	2	G	1	8	2	Wind Turbine	6	20.96	3	1.46	1	18	3	3
2278	291540.4	962802	4.7	4	0.7	2	G	1	4	2	Wind Turbine	6	30.02	3	1.60	1	18	3	3
2279	291539.7	962792	4.6	4	1.5	2	G	1	4	2	Wind Turbine	6	39.33	3	1.60	1	18	3	3
2280	291540.0	962782	4.6	4	0.3	1	G	1	4	1	Wind Turbine	6	48.88	3	1.78	1	18	3	3
2281	291539.8	962772	4.1	4	0.4	1	R	1.5	6	2	Wind Turbine	6	59.07	3	1.88	1	18	3	3
2282	291530.8	962772	4.6	4	0.3	1	R	1.5	6	2	Wind Turbine	6	57.81	3	1.17	1	18	3	3
2283	291519.9	962792	4.6	4	0.3	1	R	1.5	6	2	Wind Turbine	6	39.25	3	0.07	1	18	3	3
2284	291518.8	962801	4.6	4	0.1	1	G	1	4	1	Wind Turbine	6	31.14	3	-0.13	1	18	3	3
2285	291519.4	962811	4.9	4	0.3	1	R	1.5	6	2	Wind Turbine	6	21.81	3	-0.21	1	18	3	3
2286	291509.5	962812	5.3	4	0.3	1	G	1	4	1	Wind Turbine	6	27.44	3	-1.03	1	18	3	3
2287	291509.9	962822	5.2	4	0.2	1	G	1	4	1	Wind Turbine	6	21.70	3	-1.37	1	18	3	3
2288	291519.6	962822	5.2	4	0.5	1	G	1	4	1	Wind Turbine	6	13.00	3	-0.59	1	18	3	3
2289	291519.1	962842	5.5	4	0.5	1	G	1	4	1	Wind Turbine	6	16.49	3	-1.21	1	18	3	3
2290	291510.2	962842	5.3	4	0.6	2	G	1.5	12	2	Wind Turbine	6	23.05	3	-2.06	1	18	3	3
2291	291500.3	962841	5.3	4	0.3	1	G	1	4	1	Wind Turbine	6	31.73	3	-2.89	1	18	3	3
2292	291491.9	962842	5.9	4	0.9	2	G	1	8	2	Wind Turbine	6	39.91	3	-3.67	1	18	3	3
2293	291489.9	962821	6.7	4	0.3	1	G	1	4	1	Wind Turbine	6	41.01	3	-3.39	1	18	3	3
2294	291489.9	962822	6.1	4	0.2	1	G	1	4	1	Wind Turbine	6	31.25	3	-2.27	1	18	3	3
2295	291500.1	962811	6.6	4	0.1	1	G	1	4	1	Wind Turbine	6	35.23	3	-2.03	1	18	3	3
2296	291500.3	962801	6.2	4	0.2	1	R	1.5	6	2	Wind Turbine	6	41.48	3	-1.69	1	18	3	3
2297	291509.5	962802	4.7	4	0.2	1	G	1	4	1	Wind Turbine	6	35.02	3	-0.88	1	18	3	3
2298	291512.7	962792	4.6	4	0.3	1	G	1	4	1	Wind Turbine	6	41.73	3	-0.51	1	18	3	3
2299	291510.1	962782	4.5	4	0.6	2	G	1	8	2	Wind Turbine	6	51.91	3	-0.61	1	18	3	3
2300	291510.8	962772	4.5	4	0.5	1	G	1.5	12	2	Wind Turbine	6	60.73	3	-0.43	1	18	3	3
2301	291518.4	962773	4.6	4	0.3	1	R	1.5	6	2	Wind Turbine	6	58.07	3	0.17	1	18	3	3
2302	291499.3	962771	4.1	4	0.4	1	R	1.5	6	2	Wind Turbine	6	66.14	3	-1.27	1	18	3	3
2303	291490.3	962771	5.7	4	0.4	1	G	1	4	1	Minor Watercourse	6	59.73	3	11.52	2	18	3	3
2304	291489.8	962782	6.5	4	0.4	1	G	1	4	1	Wind Turbine	6	62.25	3	-2.27	1	18	3	3
2305	291489.6	962792	6.9	4	0.4	1	G	1	4	1	Wind Turbine	6	55.12	3	-1.48	1	18	3	3
2306	291489.6	962803	6.9	4	0.2	1	G	1	4	1	Wind Turbine	6	48.75	3	-2.98	1	18	3	3
2307	291489.3	962811	6.8	4	0.5	1	R	1.5	6	2	Wind Turbine	6	44.75	3	-3.29	1	18	3	3
2308	290915.6	962496	5.1	4	1	2	R	1.5	12	2	Important Habitat	8	51.64	3	-2.43	1	24	3	3
2309	290920.5	962491	5.9	4	0.1	1	G	1	4	1	Important Habitat	8	49.09	3	-1.80	1	24	3	3
2310	290920.2	962482	7.1	4	0.2	1	G	1	4	1	Important Habitat	8	40.10	3	-1.14	1	24	3	3
2311	290919.8	962472	7.2	4	0.3	1	R	1.5	6	2	Important Habitat	8	30.11	3	-0.20	1	24	3	3
2312	290920.0	962452	4.7	4	0.8	2	G	1	8	2	Important Habitat	8	13.03	3	0.69	1	24	3	3
2313	290919.3	962443	4.1	4	1.3	3	R	1.5	18	3	Important Habitat	8	6.10	4	0.27	1	32	5	15
2314	290929.7	962442	4.2	4	0.3	1	G	1	8	2	Important Habitat	8	14.95	3	1.03	1	24	3	3
2315	290929.9	962452	3.7	2	0.3	1	G	1	4	1	Important Habitat	8	20.27	3	1.15	1	24	3	3
2316	290930.2	962462	3.7	2	0.2	1	G	1	4	1	Important Habitat	8	27.36	3	1.50	1	24	3	3
2317	290931.3	962472	7.5	4	0.3	1	G	1	4	1	Important Habitat	8	35.61	3	1.04	1	24	3	3
2318	290930.2	962482	7.5	4	0.3	1	G	1	4	1	Important Habitat	8	43.60	3	-0.19	1	24	3	3
2319	290940.1	962481	5.8	4	0.2	1	R	1.5	6	2	Important Habitat	8	48.49	3	0.33	1	24	3	3
2320	290940.0	962472	5.7	4	0.3	1	G	1	4	1	Important Habitat	8	41.21	3	1.42	1	24	3	3
2321	290939.6	962462	1.2	1	1.2	1	G	1	4	1	Important Habitat	8	33.85	3	1.48	1	24	3	3
2322	290940.1	962443	1.6	1	1	1	G	1	4	1	Important Habitat	8	19.54	3	1.04	1	24	3	3
2323	290940.3	962432	2.8	2	0.7	2	G	1	4	1	Important Habitat	8	8.59	4	0.07	1	32	5	5
2324	290939.7	962412	3.1	2	0.4	1	G	1	2	1	Important Habitat	8	1.42	4	-0.02	1	32	5	5
2325	290940.3	962402	3.0	2	1	2	G	1	2	1	Important Habitat	8	4.97	4	-0.25	1	32	5	5
2326	290950.0	962412	1.6	1	0.3	1	R	1.5	1	1	Important Habitat	8	1.02	1	0.06	1	32	5	5
2327	290949.8	962422	1.2	1	0.4	1	R	1.5	1	1	Important Habitat	8	1.54	4	0.02	1	32	5	5
2328	290949.5	962432	0.8	1	1.1	3	G	1	3	1	Important Habitat	8	8.80	4	-0.13	1	32	5	5
2329	290950.2	962441	0.8	1	1	2	G	1	2	1	Important Habitat	8	17.84	3	-0.24	1	24	3	3
2330	290949.8	962451	1.1	1	1	2	G	1	2	1	Important Habitat	8	28.21	3	-0.32	1	24	3	3
2331	290950.0	962462	1.6	1	0.9	2	G	1.5	6	2	Important Habitat	8	38.47	3	-0.23	1	24	3	3
2332	290950.2	962472	5.7	4	0.2	1	G	1	4	1	Important Habitat	8	48.77	3	1.41	1	24	3	3
2333	290959.3	962472	5.4	4	0.4	1	G	1	4	1	Important Habitat	8	48.97	3	-0.33	1	24	3	3
2334	290959.5	962462	1.6	1	0.6	2	G	1	2	1	Important Habitat	8	38.58	3	-0.02	1	24	3	3
2335	290970.1	962462	1.6	1	0.3	1	R	1.5	1.5	1	Important Habitat	8	38.96	3	0.21	1	24	3	3
2336	290978.8	962450	1.6	1	0.2	1	G	1	1	1	Important Habitat	8	41.07	3	0.43	1	24	3	3
2337	290969.4	962452	1.6	1	0.4	1	G	1	1	1	Important Habitat	8	29.34	3	0.09	1	24	3	3
2338	290959.6	962452	1.6	1	0.7	2	G	1	2	1	Important Habitat	8	28.71	3	-0.12	1	24	3	3
2339	290959.5	962441	1.0	1	1	2	R	1.5	3	1	Important Habitat	8	18.32	3	-0.21	1	24	3	3
2340	290959.7	962432	0.8	1	0.6	2	G	1	2	1	Important Habitat	8	8.88	4	-0.12	1	32	5	5
2341	290909.2	962442	1.9	1	1	3	G	1	3	1	Important Habitat	8	1.43	4	-0.01	1	32	5	5
2342	290899.7	962443	2.2	1	1.1	2	G	1	3	1	Important Habitat	8	0.55	4	0.01	1	32	5	15
2343	290889.6	962442	1.1	1	1.1	3	G	1	3	1	Important Habitat	8	0.99	4	0.02	1	32	5	5
2344	290899.6	962452	2.0	1	0.4	1	G	1	1	1	Important Habitat	8	5.72	4	-0.30	1	32	5	5
2345	290909.9	962452	2.6	2	1	1	R	1.5	3	1	Important Habitat	8	9.40	4	-0.12	1	32	5	5
2346	290910.0	962462	2.6	2	0.5	1	R	1.5	3	1	Important Habitat	8	18.84	3	-0.06	1	24	3	3
2347	290909.4	962471	6.6	4	0.4	1	G	1	4	1	Important Habitat	8	27.19	3	0.75	1	24	3	3
2348	290910.1	962482	6.5	4	0.2	1	G	1	4	1	Important Habitat	8	37.11	3	-1.84	1	24	3	3
2349	290910.1	962491	4.3	4	0.3	1	G	1	4	1	Important Habitat	8	45.78	3	-2.55	1	24	3	3
2350	290898.5	962472	6.7	4	0.1	1													

2411	291220.1	961702	6.0	4	0.3	1	R	1.5	6	2	Important Habitat	8	1.49	4	-0.02	1	32	5	10
2412	291217.9	961691	10.1	6	0.2	1	G	1	6	2	Minor Watercourse	6	3.64	4	0.90	1	24	3	6
2413	291227.8	961691	4.5	4	0.1	1	R	1.5	6	2	Minor Watercourse	6	3.40	4	-0.19	1	24	3	6
2414	291238.3	961691	4.7	4	0.5	1	R	1	4	1	Minor Watercourse	6	7.76	4	-0.31	1	24	3	6
2415	291248.1	961691	4.2	4	0.3	1	R	1.5	6	2	Minor Watercourse	6	7.25	4	-0.30	1	24	3	6
2	2416	291258.1	961690	3.4	1	2	G	1.5	6	2	Important Habitat	8	1.66	4	-0.40	1	32	5	10
2417	291257.9	961681	4.5	4	0.7	2	R	1	8	2	Important Habitat	8	3.40	4	0.00	1	32	5	10
2418	291247.9	961681	5.2	4	0.2	1	R	1.5	6	2	Important Habitat	8	2.96	4	-0.07	1	32	5	10
2419	291238.0	961681	5.3	4	0.2	1	G	1	4	1	Important Habitat	8	3.50	4	-0.31	1	32	5	5
2420	291228.1	961681	7.8	4	1	1	R	1.5	6	2	Important Habitat	8	3.24	4	-0.33	1	32	5	10
2421	291218.0	961681	7.6	4	1	2	G	1	6	2	Minor Watercourse	6	3.20	4	0.04	1	24	3	6
2422	291217.8	961671	6.1	4	1.5	3	R	1.5	18	3	Important Habitat	8	7.84	4	-0.38	1	32	5	15
2423	291228.1	961671	5.5	4	1	2	R	1.5	12	2	Important Habitat	8	3.16	4	-0.02	1	32	5	10
2424	291238.3	961671	5.9	4	0.4	1	R	1.5	6	2	Important Habitat	8	2.85	4	-0.03	1	32	5	10
2425	291248.1	961671	5.6	4	0.6	2	G	1	8	2	Important Habitat	8	3.08	4	-0.01	1	32	5	10
2426	291258.1	961671	5.3	4	0.1	1	G	1	4	1	Important Habitat	8	3.19	4	0.03	1	32	5	10
2427	291247.6	961661	6.0	4	0.2	2	R	1.5	6	2	Important Habitat	8	3.42	4	0.36	1	32	5	10
2428	291238.0	961661	6.2	4	0.4	1	G	1	4	1	Important Habitat	8	3.29	4	-0.34	1	32	5	5
2429	291228.4	961661	5.1	4	0.8	2	G	1	8	2	Important Habitat	8	2.85	4	-0.08	1	32	5	10
2430	291217.8	961661	2.2	2	1.3	3	G	1	6	2	Important Habitat	8	3.42	4	0.00	1	32	5	10
2431	291207.7	961651	2.4	2	1.3	3	G	1	6	2	Important Habitat	8	7.86	4	-0.15	1	32	5	10
2432	291218.0	961650	2.5	2	1.1	3	R	1.5	9	2	Important Habitat	8	3.23	4	-0.12	1	32	5	10
2433	291228.5	961651	6.3	4	0.1	1	G	1	4	1	Important Habitat	8	2.79	4	-0.06	1	32	5	5
2434	291237.9	961651	6.3	4	0.5	1	R	1.5	6	2	Important Habitat	8	3.10	4	-0.11	1	32	5	10
2435	291247.9	961650	6.5	4	0.4	1	R	1.5	6	2	Important Habitat	8	3.16	4	-0.35	1	32	5	10
2436	291238.4	961641	6.6	4	0.5	1	R	1	4	1	Important Habitat	8	2.87	4	-0.06	1	32	5	5
2437	291228.2	961641	6.9	4	0.2	1	G	1.5	4	1	Important Habitat	8	3.24	4	0.08	1	32	5	24
2438	291218.0	961641	3.4	2	1.5	3	R	1.5	9	2	Important Habitat	8	3.33	4	-0.24	1	32	5	10
2439	291209.7	961640	2.6	2	1.1	3	G	1	6	2	Important Habitat	8	2.16	4	-0.07	1	32	5	10
2440	291208.1	961631	3.4	2	1	2	R	1.5	6	2	Important Habitat	8	3.23	4	-0.02	1	32	5	10
2441	291218.3	961631	5.9	4	0.3	1	G	1	4	1	Important Habitat	8	2.98	4	-0.03	1	32	5	5
2442	291228.4	961631	6.9	4	0.6	2	G	1.5	12	2	Important Habitat	8	3.02	4	-0.34	1	32	5	10
2443	291238.1	961631	7.3	4	0.3	1	R	1.5	6	2	Important Habitat	8	3.27	4	-0.07	1	32	5	10
2444	291238.0	961621	7.2	4	0.6	2	G	1	8	2	Important Habitat	8	3.06	4	-0.11	1	32	5	10
2445	291228.2	961621	6.9	4	0.4	1	R	1.5	6	2	Important Habitat	8	2.89	4	-0.24	1	32	5	10
2446	291217.9	961621	4.7	4	0.5	1	R	1.5	6	2	Important Habitat	8	3.39	4	-0.04	1	32	5	10
2447	291208.4	961620	5.4	4	0.4	1	R	1.5	6	2	Important Habitat	8	2.66	4	-0.36	1	32	5	10
2448	291208.0	961611	3.5	2	0.8	2	R	1.5	6	2	Important Habitat	8	3.09	4	-0.07	1	32	5	10
2449	291218.1	961611	3.3	2	0.5	1	R	1.5	3	1	Important Habitat	8	3.21	4	-0.06	1	32	5	5
2450	291228.2	961611	8.4	6	0.4	1	R	1.5	9	2	Important Habitat	8	3.20	4	-0.28	1	32	5	10
2451	291227.9	961601	9.5	6	0.2	1	R	1.5	9	2	Important Habitat	8	3.26	4	-0.35	1	32	5	10
2452	291217.6	961601	3.2	2	0.6	2	G	1	4	1	Important Habitat	8	3.22	4	-0.16	1	32	5	5
2453	291208.0	961601	3.1	2	1	2	R	1.5	6	2	Important Habitat	8	3.27	4	-0.07	1	32	5	10
2454	291240.1	961772	5.1	4	0.4	1	G	1	4	1	Important Habitat	8	1.46	4	0.06	1	32	5	5
2455	291239.3	961782	2.7	2	0.5	1	G	1	2	1	Important Habitat	8	1.78	4	-0.04	1	32	5	5
2456	291239.1	961802	2.2	2	0.01	1	G	1	2	1	Important Habitat	8	1.72	4	-0.05	1	32	5	5
2457	291239.2	961812	2.1	2	2.6	3	R	1.5	9	2	Important Habitat	8	1.26	4	-0.04	1	32	5	10
2458	291239.4	961821	2.2	2	2	3	R	1.5	9	2	Important Habitat	8	1.88	4	-0.05	1	32	5	10
2459	291229.4	961822	3.1	2	2.5	3	R	1.5	9	2	Important Habitat	8	1.74	4	-0.06	1	32	5	10
2460	291229.8	961831	3.5	2	1.5	3	G	1	6	2	Important Habitat	8	1.90	4	-0.07	1	32	5	10
2461	291239.5	961832	4.6	4	0.9	2	G	1	8	2	Important Habitat	8	1.61	4	-0.13	1	32	5	10
2462	291239.6	961842	5.9	4	0.5	1	R	1.5	6	2	Important Habitat	8	0.97	4	-0.09	1	32	5	10
2463	291230.2	961841	4.1	4	0.1	1	G	1	4	1	Important Habitat	8	1.67	4	-0.06	1	32	5	5
2464	291230.2	961851	4.3	4	0.3	1	R	1	6	2	Important Habitat	8	1.66	4	-0.06	1	32	5	10
2465	291239.9	961852	6.0	4	0.4	1	R	1.5	6	2	Important Habitat	8	1.39	4	-0.08	1	32	5	10
2466	291250.1	961852	4.2	4	0.5	1	G	1	4	1	Important Habitat	8	1.33	4	-0.03	1	32	5	5
2467	291270.6	961852	3.4	2	1	2	G	1	4	1	Important Habitat	8	0.74	4	-0.04	1	32	5	5
2468	291279.7	961852	3.3	2	1.3	3	G	1	6	2	Important Habitat	8	1.08	4	-0.08	1	32	5	10
2469	291290.0	961852	3.0	2	1.5	3	G	1	6	2	Important Habitat	8	1.45	4	-0.08	1	32	5	10
2470	291289.4	961861	3.7	2	2.2	3	G	1	6	2	Important Habitat	8	2.07	4	-0.12	1	32	5	10
2471	291269.5	961861	2.6	2	1	3	R	1.5	9	2	Important Habitat	8	1.81	4	-0.07	1	32	5	10
2472	291260.1	961861	2.8	2	1.9	3	R	1.5	9	2	Important Habitat	8	1.78	4	-0.02	1	32	5	10
2473	291250.0	961861	3.2	2	1.4	3	R	1.5	9	2	Important Habitat	8	1.40	4	-0.02	1	32	5	10
2474	291239.7	961861	5.5	4	0.7	2	R	1.5	12	2	Important Habitat	8	1.76	4	-0.11	1	32	5	10
2475	291230.2	961861	4.5	4	0.5	1	R	1.5	6	2	Important Habitat	8	1.88	4	-0.07	1	32	5	10
2476	291229.9	961872	4.6	4	1.2	3	G	1	12	2	Important Habitat	8	1.05	4	-0.06	1	32	5	10
2477	291239.6	961872	4.1	4	1.9	3	G	1	12	2	Important Habitat	8	0.97	4	-0.05	1	32	5	10
2478	291249.9	961872	2.9	2	2.9	3	R	1.5	9	2	Important Habitat	8	1.15	4	-0.03	1	32	5	10
2479	291260.4	961871	2.9	2	1.7	3	R	1.5	9	2	Important Habitat	8	2.24	4	-0.01	1	32	5	10
2480	291269.8	961872	2.9	2	1.6	3	G	1	6	2	Important Habitat	8	1.26	4	-0.03	1	32	5	10
2481	291280.1	961872	2.6	2	1.2	3	G	1	6	2	Important Habitat	8	1.31	4	-0.03	1	32	5	10
2482	291289.8	961872	3.3	2	0.9	2	G	1.5	6	2	Important Habitat	8	1.57	4	-0.09	1	32	5	10
2483	291289.8	961882	2.6	2	0.2	1	G	1	2	1	Important Habitat	8	5.84	4	0.26	1	32	5	5
2484	291269.5	961882	2.9	2	0.9	2	R	1.5	9	2	Important Habitat	8	1.39	4	-0.05	1	32	5	10
2485	291260.0	961882	2.9	2	1.2	3	G	1	6	2	Important Habitat	8	1.06	4	-0.02	1	32	5	10
2486	291249.6	961881	2.9	2	2.1	3	R	1.5	9	2	Important Habitat	8	1.86	4	-0.05	1	32	5	10
2487	291239.5	961882	3.1	2	2.7	3	R	1.5	9	2	Important Habitat	8	1.31	4	-0.05	1	32	5	10
2488	291229.2	961882	4.0	4	1.8	3	R	1.5	18	3	Important Habitat	8	1.25	4	-0.10	1	32	5	15
2489	291230.2	961892	2.7	2	2.4	3	R	1.5	9	2	Important Habitat	8	1.33	4	-0.03	1	32	5	10
2490	291239.6	961892	2.5	2	2.6	3	R	1.5	9	2	Important Habitat	8	1.22	4	-0.02	1	32	5	10
2491	291249.7	961892	3.0	2	2.3	3	R	1.5	9	2	Important Habitat	8	1.27	4	0.02	1	32	5	10
2492	291260.1	961892	3.6	2	2.7														

2553	291570.0	961702	6.5	4	0.6	2	G	1	8	2	Important Habitat	8	48.40	3	5.60	1	24	3	6
2554	291570.4	961692	6.9	4	0.3	1	R	1.5	6	2	Important Habitat	8	42.49	3	5.15	1	24	3	6
2555	291579.7	961692	7.0	4	0.5	1	R	1.5	6	2	Wind Turbine	6	36.73	3	-2.54	1	18	3	6
2556	291579.7	961702	5.6	4	0.8	2	G	1	8	2	Wind Turbine	6	43.19	3	-2.16	1	18	3	6
2557	291590.0	961702	7.4	4	0.5	1	R	1.5	6	2	Wind Turbine	6	36.70	3	-1.19	1	18	3	6
2558	291599.9	961692	8.2	6	0.5	1	R	1.5	9	2	Wind Turbine	6	28.83	3	-1.33	1	18	3	6
2559	291600.2	961692	10.4	6	0.5	1	G	1	6	2	Wind Turbine	6	22.81	3	0.41	1	18	3	6
2560	291599.9	961702	11.3	6	0.2	1	G	1	6	2	Wind Turbine	6	32.19	3	0.59	1	18	3	6
2561	291609.4	961702	10.9	6	0.3	1	R	1.5	9	2	Wind Turbine	6	30.75	3	2.51	1	18	3	6
2562	291610.1	961692	11.4	6	0.2	1	G	1	6	2	Wind Turbine	6	21.08	3	1.92	1	18	3	6
2563	291649.6	962597	2.2	2	1.1	2	R	1.5	22	3	Important Habitat	8	1.12	4	-0.02	1	32	3	3
2564	291630.7	962643	4.7	4	2	3	R	1.5	18	3	Important Habitat	8	0.63	4	0.05	1	32	3	15
2565	291620.4	962692	6.5	4	1	2	G	1	8	2	Important Habitat	8	37.46	3	0.01	1	24	3	6
2566	291592.3	962687	5.1	4	2.5	3	R	1.5	18	3	Important Habitat	8	31.62	3	-2.88	1	24	3	9
2567	291601.4	962733	5.3	4	0.5	1	R	1.5	6	2	Important Habitat	8	75.10	3	-1.40	1	24	3	6
2568	292189.4	962701	2.6	2	1.1	2	G	1	4	2	Important Habitat	8	51.94	3	2.27	1	24	3	6
2569	292199.9	962702	2.7	2	1.2	3	R	1	6	2	Important Habitat	8	51.56	3	2.26	1	24	3	6
2570	292220.0	962702	3.3	2	0.9	2	R	1.5	6	2	Important Habitat	8	51.33	3	2.31	1	24	3	6
2571	292229.9	962701	3.7	2	0.5	1	G	1	2	1	Important Habitat	8	51.60	3	2.40	1	24	3	3
2572	292239.8	962702	4.0	4	0.4	1	G	1	4	1	Important Habitat	8	51.49	3	2.47	1	24	3	3
2573	292249.8	962701	4.4	4	0.5	2	R	1	4	1	Important Habitat	8	51.76	3	2.60	1	24	3	3
2574	292259.8	962702	4.8	4	0.5	1	R	1.5	6	2	Important Habitat	8	52.29	3	2.66	1	24	3	6
2575	292260.7	962692	4.7	4	0.3	1	R	1.5	6	2	Wind Turbine	6	54.00	3	-3.31	1	18	3	6
2576	292261.3	962682	4.5	4	0.2	1	G	1	4	1	Wind Turbine	6	45.37	3	-2.48	1	18	3	3
2577	292261.9	962671	4.4	4	0.7	2	G	1	8	2	Wind Turbine	6	36.82	3	-1.65	1	18	3	6
2578	292262.7	962665	3.8	2	1	2	R	1.5	6	2	Wind Turbine	6	32.86	3	-1.18	1	18	3	6
2579	292249.8	962672	4.4	4	0.2	1	G	1	4	1	Wind Turbine	6	30.94	3	1.95	1	18	3	6
2580	292249.9	962681	4.4	4	0.2	1	G	1	4	1	Wind Turbine	6	40.21	3	-2.68	1	18	3	3
2581	292249.8	962692	4.4	4	0.7	2	G	1	8	2	Wind Turbine	6	49.99	3	-3.45	1	18	3	6
2582	292239.9	962692	4.3	4	0.6	2	R	1.5	12	2	Wind Turbine	6	48.91	3	-3.54	1	18	3	6
2583	292229.7	962692	4.3	4	0.4	1	G	1	4	1	Wind Turbine	6	49.35	3	-3.58	1	18	3	6
2584	292219.8	962692	4.3	4	1.3	3	R	1.5	12	2	Wind Turbine	6	51.99	3	-3.62	1	18	3	6
2585	292209.9	962692	4.3	4	1	2	G	1	8	2	Wind Turbine	6	56.27	3	-3.68	1	18	3	6
2586	292200.1	962692	4.2	4	1.2	3	R	1.5	18	3	Important Habitat	8	61.33	3	2.87	1	24	3	9
2587	292189.9	962692	4.0	4	1.1	3	G	1	12	2	Important Habitat	8	61.63	3	2.82	1	24	3	6
2588	292190.0	962682	4.3	4	0.8	2	G	1	8	2	Wind Turbine	6	61.62	3	-3.01	1	18	3	6
2589	292200.2	962682	4.3	4	1.3	3	R	1.5	18	3	Wind Turbine	6	54.01	3	2.96	1	18	3	6
2590	292209.8	962682	4.3	4	1.2	3	R	1.5	18	3	Wind Turbine	6	47.76	3	-2.91	1	18	3	9
2591	292220.0	962682	4.3	4	0.8	2	G	1	8	2	Wind Turbine	6	42.96	3	-2.89	1	18	3	6
2592	292229.9	962682	4.3	4	0.7	2	R	1.5	12	2	Wind Turbine	6	39.45	3	-2.82	1	18	3	6
2593	292240.1	962682	4.3	4	0.3	1	G	1	4	1	Wind Turbine	6	39.04	3	-2.80	1	18	3	3
2594	292239.8	962672	4.3	4	0.9	2	R	1.5	6	2	Wind Turbine	6	28.86	3	-2.03	1	18	3	6
2595	292229.6	962672	4.3	4	0.2	1	G	1	4	1	Wind Turbine	6	29.94	3	-2.08	1	18	3	3
2596	292209.8	962672	4.3	4	0.2	1	R	1.5	6	2	Wind Turbine	6	40.18	3	-2.16	1	18	3	6
2597	292199.7	962672	4.3	4	1.4	3	R	1.5	18	3	Wind Turbine	6	47.92	3	-2.22	1	18	3	9
2598	292190.0	962672	4.3	4	1.3	3	R	1.5	18	3	Wind Turbine	6	55.87	3	-2.25	1	18	3	6
2599	292043.9	962849	3.2	2	1	2	G	1	0.67	1	Wind Turbine	6	70.61	3	0.67	1	18	3	6
2600	292058.9	962871	3.5	2	0.5	1	R	1.5	3.5	1	Wind Turbine	6	71.40	3	1.82	1	18	3	6
2601	292020.1	962832	2.1	2	0.1	1	R	1.5	3	1	Wind Turbine	6	71.40	3	1.92	1	18	3	3
2602	291869.8	962927	2.0	2	2.2	3	R	1.5	9	2	Wind Turbine	6	126.66	3	-0.64	1	18	3	6
2603	291749.4	962931	2.6	2	1.4	3	R	1.5	9	2	Important Habitat	8	55.09	3	2.41	1	24	3	6
2604	291679.4	962948	1.9	1	1	2	R	1.5	3	1	Important Habitat	8	20.50	3	0.54	1	24	3	3
2605	291627.1	962954	2	2	1.2	2	R	1.5	2.9	1	Important Habitat	8	2.18	3	0.10	1	32	3	6
2606	291379.7	963123	10.4	6	0.5	1	R	1.5	9	2	Wind Turbine	6	107.83	3	-3.72	1	18	3	6
2607	291321.5	963151	10.2	6	0.3	1	G	1	6	2	Wind Turbine	6	117.09	3	-10.14	1	18	3	6
2608	291248.4	963156	9.5	6	0.3	1	G	1	6	2	Important Habitat	8	56.06	3	6.34	1	24	3	6
2609	291229.7	963132	7.3	4	0.3	1	G	1	4	1	Important Habitat	8	32.58	3	3.06	1	24	3	3
2610	291203.9	963205	5.6	4	0.4	1	R	1.5	6	2	Important Habitat	8	23.71	3	1.76	1	24	3	6
2611	291180.5	963180	3.4	2	0.8	2	R	1.5	6	2	Important Habitat	8	1.57	4	0.05	1	32	3	10
2612	291161.6	963161	3.3	2	0.7	2	R	1.5	6	2	Important Habitat	8	2.13	4	0.05	1	32	3	10
2613	291115.4	963201	5.9	4	0.3	1	G	1	4	1	Important Habitat	8	2.91	4	0.21	1	32	3	5
2614	291131.5	963220	4.4	4	0.4	1	G	1	4	1	Minor Watercourse	6	2.96	4	-0.05	1	24	3	3
2615	291151.5	963242	1.3	2	1.3	2	R	1.5	6	2	Important Habitat	8	1.98	3	0.06	1	32	3	5
2616	291030.7	963431	3.3	2	1	2	R	1.5	2	1	Important Habitat	8	65.57	3	2.86	1	24	3	6
2617	291018.7	963431	1.8	1	0.8	2	R	1.5	3	1	Important Habitat	8	62.73	3	2.67	1	24	3	3
2618	291010.0	963432	1.8	1	1.1	3	G	1	3	1	Important Habitat	8	61.39	3	2.51	1	24	3	3
2619	290999.8	963432	1.3	1	0.8	2	G	1	2	1	Important Habitat	8	61.23	3	2.47	1	24	3	3
2620	291060.4	963422	2.0	1	0.6	2	G	1	0.6	1	Important Habitat	8	71.31	3	2.38	1	24	3	3
2621	291010.2	963422	2.0	2	0.6	2	G	1	4	1	Important Habitat	8	71.24	3	2.67	1	24	3	3
2622	291019.8	963422	1.7	1	0.5	1	G	1	1	1	Important Habitat	8	71.75	3	2.93	1	24	3	3
2623	291030.1	963422	3.6	2	0.6	2	G	1	4	1	Important Habitat	8	74.12	3	3.17	1	24	3	3
2624	291040.0	963422	6.6	4	0.5	1	R	1.5	6	2	Important Habitat	8	67.92	3	-1.09	1	24	3	6
2625	291039.9	963412	7.1	4	0.3	1	R	1.5	6	2	Important Habitat	8	65.85	3	-0.65	1	24	3	6
2626	291029.9	963412	4.7	4	0.2	1	G	1.5	6	2	Important Habitat	8	75.79	3	-1.69	1	24	3	6
2627	291019.7	963412	2.5	2	0.5	1	G	1	2	1	Important Habitat	8	81.67	3	2.96	1	24	3	3
2628	291010.0	963412	2.5	2	0.3	1	G	1	2	1	Important Habitat	8	81.23	3	2.56	1	24	3	3
2629	291000.2	963412	2.1	2	1	2	G	1	4	1	Important Habitat	8	81.48	3	2.26	1	24	3	3
2630	290999.7	963402	3.1	2	1	2	G	1	4	1	Important Habitat	8	91.07	3	2.03	1	24	3	3
2631	291009.6	963402	3.5	2	0.5	1	R	1.5	6	2	Important Habitat	8	91.51	3	2.20	1	24	3	6
2632	291020.5	963402	4.5	4	0.5	1	R	1.5	6	2	Important Habitat	8	84.75	3	-2.27	1	24	3	6
2633	291029.6	963402	5.7	4	0.6	2	G	1	8	2	Important Habitat	8	75.62	3	-1.48	1	24	3	6

APPENDIX D – PEAT CORE DATA



Background

A series of peat cores were obtained from the proposed wind turbine locations at the Corriegarth 2 Wind Farm on 16th and 17th September 2020 to characterise the properties of the peatland in accordance with the *Peatland Survey. Guidance on Developments on Peatland (2017)*. The document, which was published jointly by the Scottish Government, Scottish Natural Heritage and SEPA, defines a consistent sampling methodology to quantify and qualify the peat material on site and provides advice on how to publish peat surveys as part of wider site investigations for development management applications, with a particular focus on wind farm developments.

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

i. Surface firmness estimation

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

Firmness of surface (P)

PO = Surface too soft to walk on

P1 = Surface just passable

P2 = Surface fairly firm

P3 = Surface firm

ii. Observations on the vegetation

Ecological Surveys were undertaken as part of the wider Environmental Impact Assessment including NVC surveys and details of this are included in Chapter 7 Ecology and the associated Technical Appendices.

iii. Observations on the peat

a. Botanical observations

Ecological Surveys were undertaken as part of the wider Environmental Impact Assessment including NVC surveys and details of this are included in Chapter 7 Ecology and the associated Technical Appendices.

b. Degree of humification - von POST SCALE

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



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

iv. Fibre

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

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

F0 = Nil

F1 = Low content

F2 = Moderate content

F3 = High content

Coarse fibres, mainly rootlets (R)

R0 = Nil

R1 = Low content

R2 = Moderate content

R3 = High content

v. Wood

Wood remains, especially if they are large and resistant, may conceivably cause a certain amount of difficulty during the exploitation of a bog. An attempt is therefore made when



sampling to assess the extent of wood. It is estimated on a scale ranging from 0 to 3 as detailed below.

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

vi. Other observations

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

Photographs of the peat cores obtained from Corriegarth 2 along with information relating to the parameters outlined above are presented overleaf with a summary of the information gathered during the peat coring process presented in the main body of text of the Peat Slide Risk Assessment (PSRA).

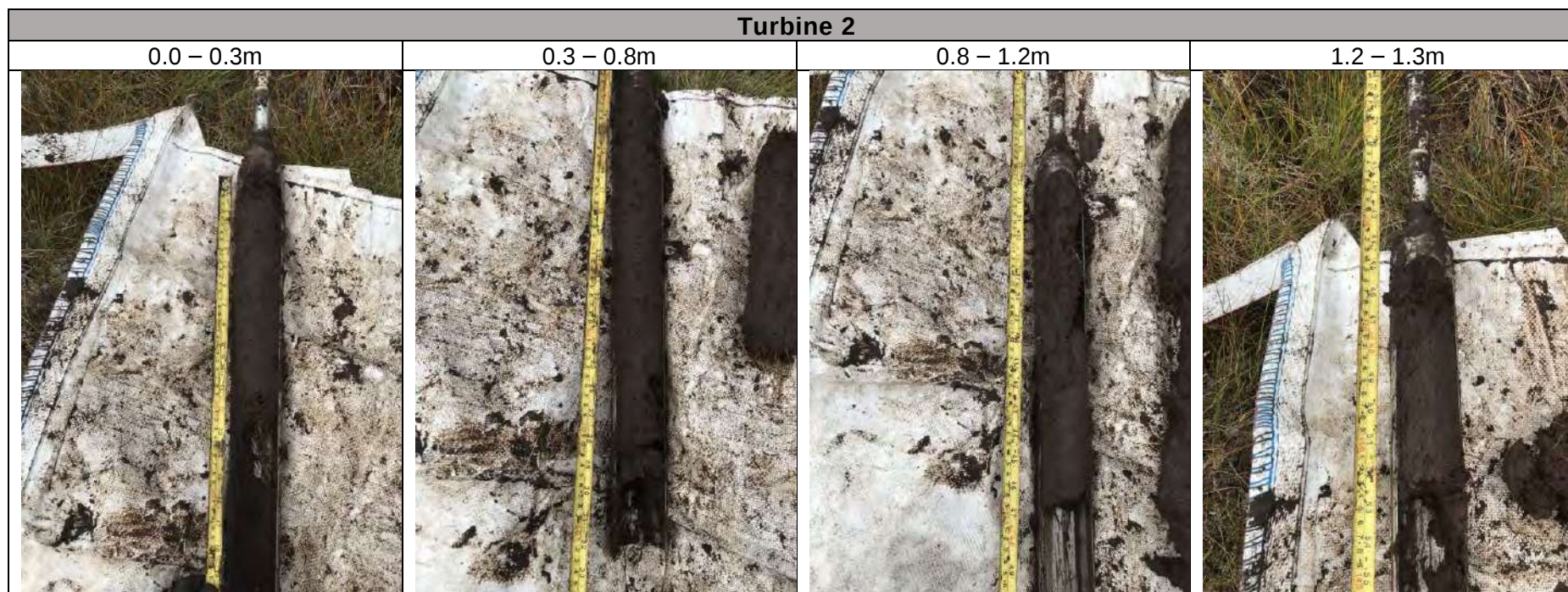
Appendix D – Peat Coring Records



Turbine 1	
0.0 – 0.55m	0.55 – 0.95m
	

Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T1	0.0-0.5	3	3	3	1	0	Dark brown
	0.5-0.95	3	4	3	1	0	Black brown

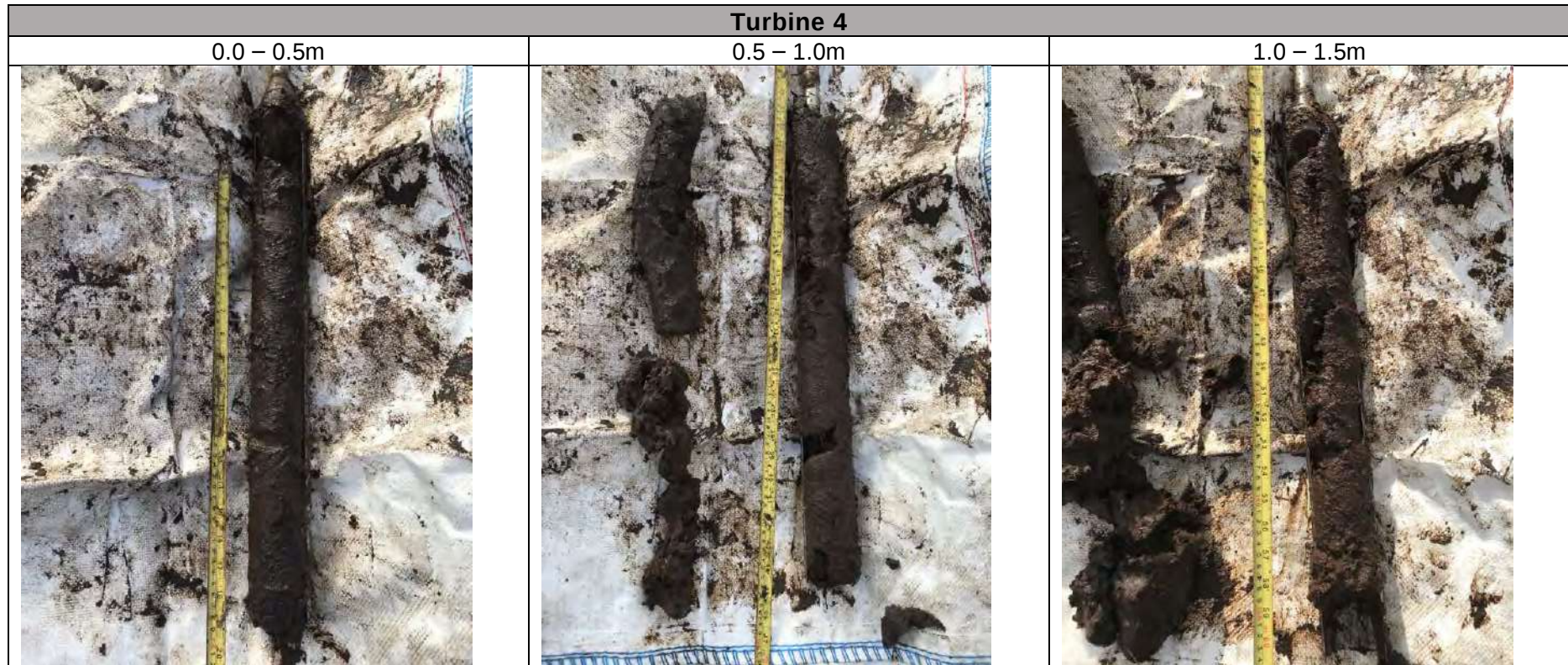
Appendix D – Peat Coring Records



Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T2	0.0-0.5	3	3	3	3	0	Dark brown
	0.5-1.0	3	4	3	2	0	Dark brown
	1.0-1.5	3	7	2	1	0	Dark brown

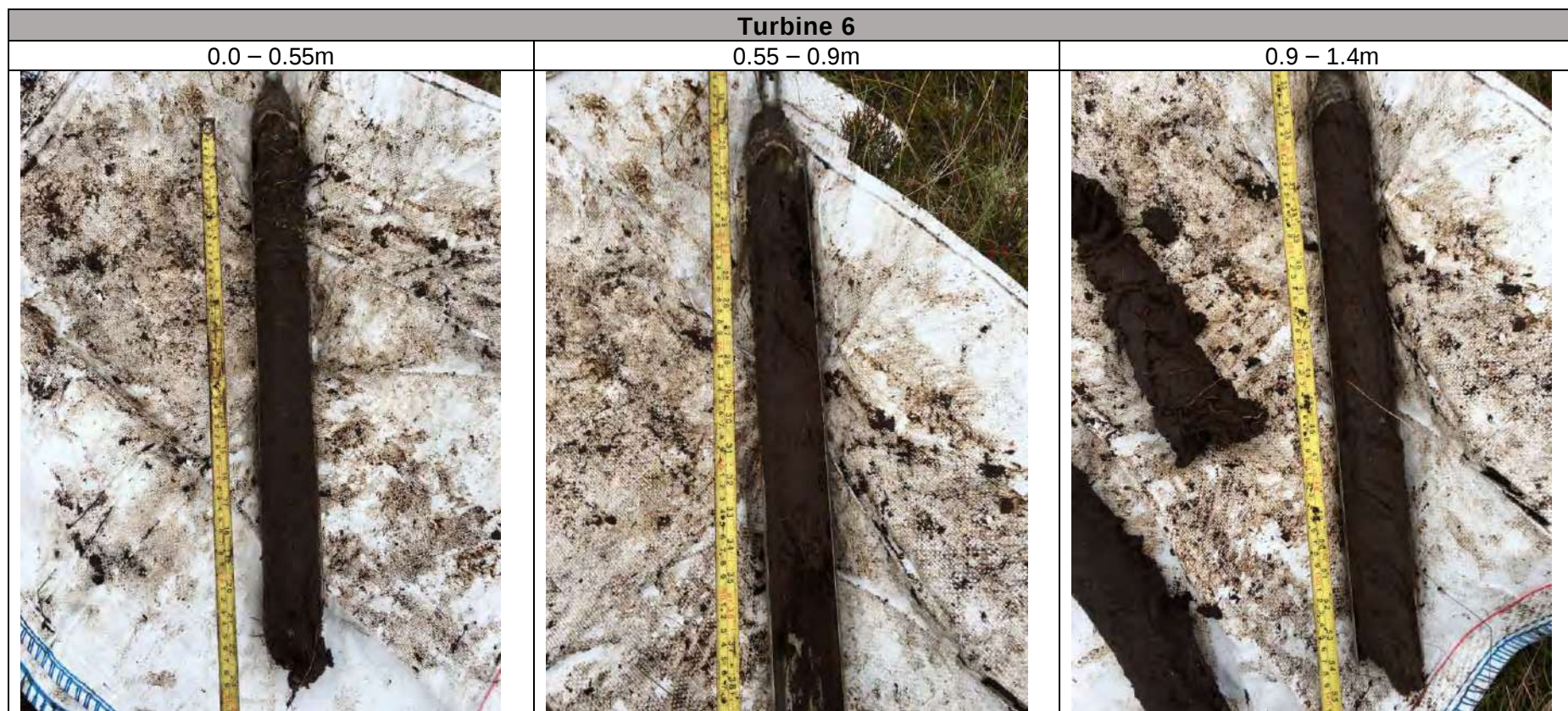


Appendix D – Peat Coring Records



Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T4	0.0-0.5	3	7	2	1	0	Black brown
	0.5-1.0	3	8	1	1	0	Dark brown
	1.0-1.5	3	8	1	0	0	Dark brown

Appendix D – Peat Coring Records



Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T6	0.0-0.5	3	3	3	3	0	Dark brown
	0.5-1.0	3	5	3	2	0	Dark brown
	1.0-1.5	3	7	2	1	0	Dark brown



Appendix D – Peat Coring Records

Turbine 7	
0.0 – 0.5m	0.5 – 0.9m
	

Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T7	0.0-0.5	3	2	3	2	0	Brown
	0.5-1.0	3	4	3	2	0	Brown

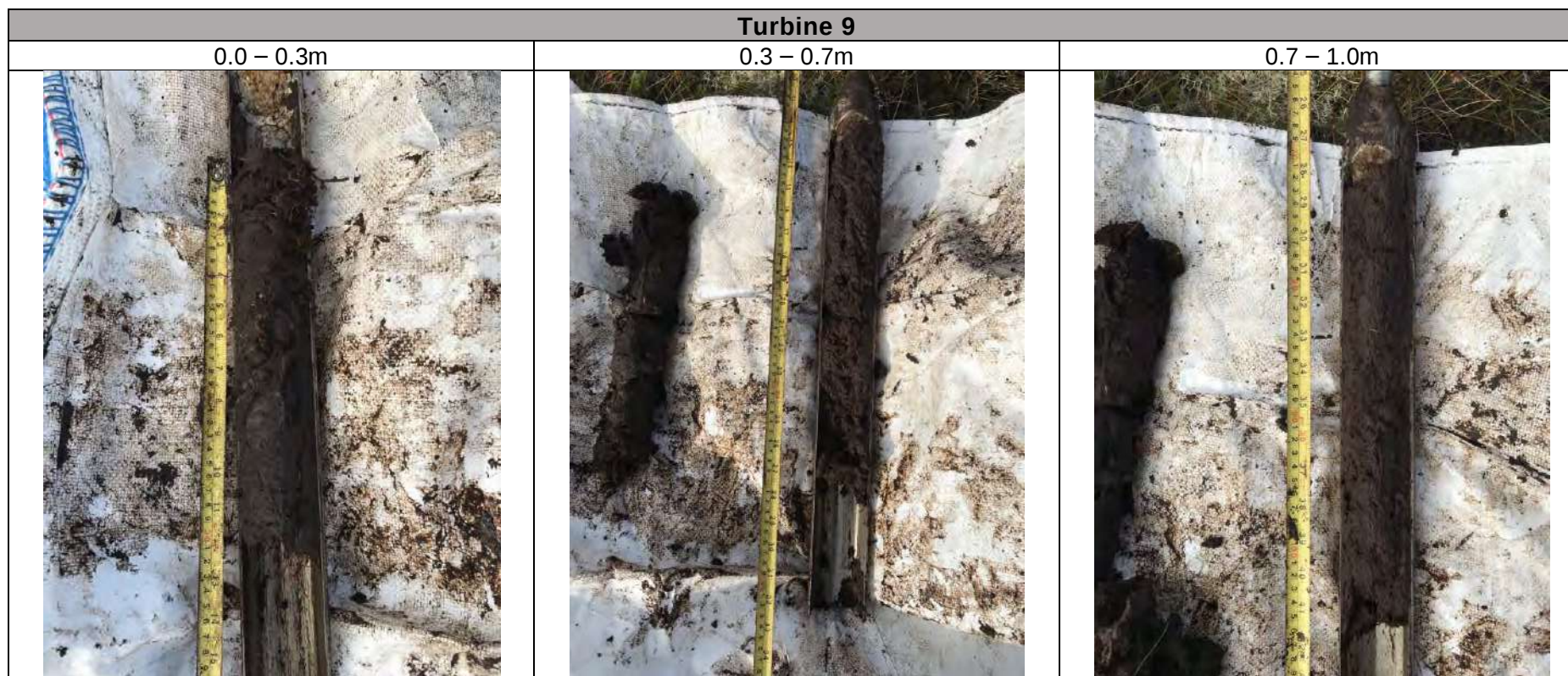
Appendix D – Peat Coring Records



Turbine 8	
0.0 – 0.65m	0.65 – 1.1m
	

Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T8	0.0-0.5	3	5	3	1	0	Dark brown
	0.5-1.0	3	7	3	1	0	Dark brown
	1.0-1.1	3	7	3	1	0	Dark brown

Appendix D – Peat Coring Records



Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T9	0.0-0.5	3	3	3	2	1	Black brown
	0.5-1.0	3	7	2	1	0	Black brown

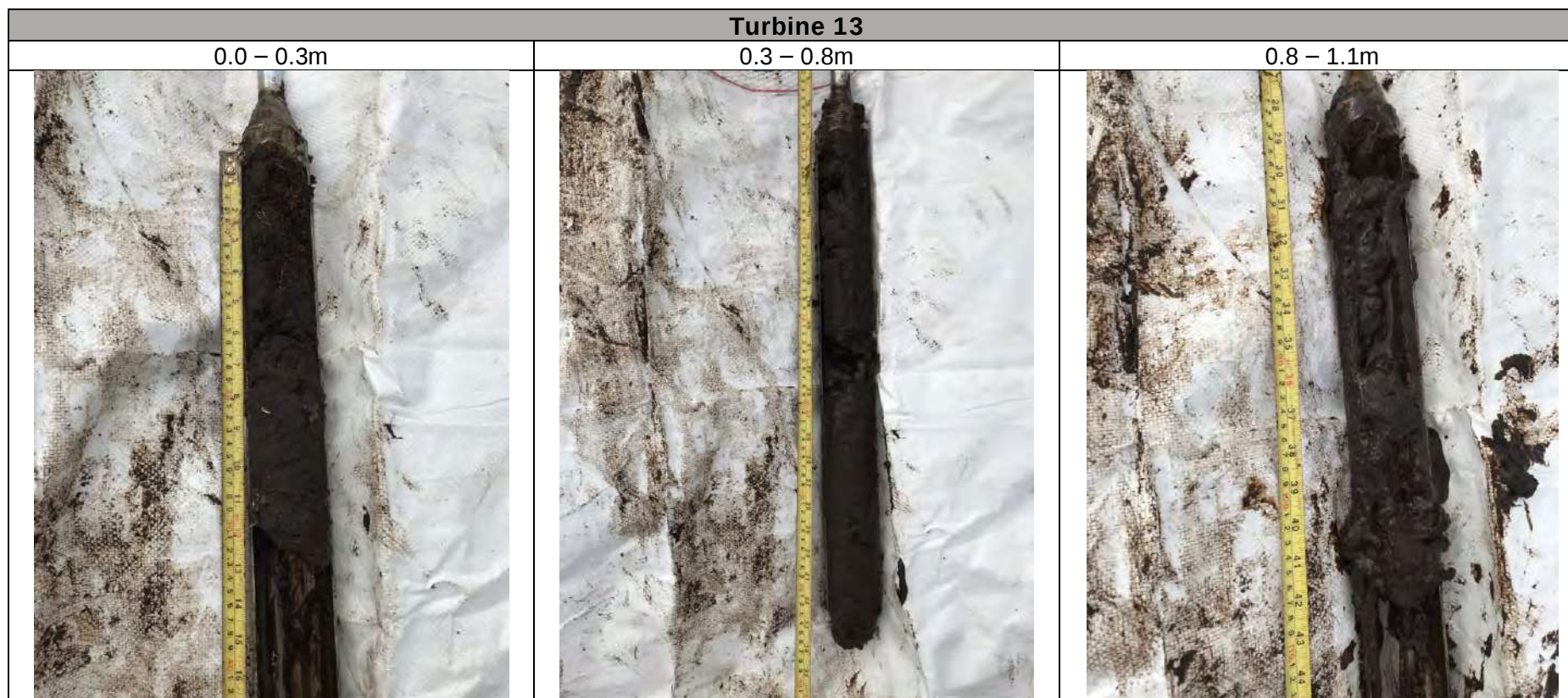
Appendix D – Peat Coring Records



Turbine 12							
0.0 – 0.5m							
							

Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T12	0.0-0.5	3	4	1	1	0	Dark brown

Appendix D – Peat Coring Records



Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T13	0.0-0.5	3	4	2	2	1	Dark brown
	0.5-1.0	3	6	1	1	0	Dark brown
	1.0-1.5	3	6	1	0	0	Dark brown



Appendix D – Peat Coring Records

Turbine 14	
0.0 – 0.4m	0.4 – 0.75m
	

Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T9	0.0-0.5	3	4	2	1	0	Dark brown
	0.5-0.75	3	5	2	1	0	Dark brown

Appendix D – Peat Coring Records



Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
T16	0.0-0.5	3	6	2	2	0	Dark brown
	0.5-1.0	3	8	2	1	0	Black brown
	1.0-1.1	3	8	2	1	0	Black brown



CORRIEGARTH 2 WIND FARM

APPENDIX 13.2

OUTLINE PEAT MANAGEMENT PLAN

SEPTEMBER 2020



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1 INTRODUCTION

This outline Peat Management Plan (oPMP) for the 16 turbine Corriegarth 2 Wind Farm (the Development), has been prepared initially to inform The Highland Council and statutory consultees of the estimated peat excavation and re-use potential as well as proposed peat and soil management methodologies to be employed during construction.

This oPMP forms a technical appendix to the Environmental Impact Assessment Report (EIAR) for Corriegarth 2 Wind Farm. The aim oPMP is to ensure the Development constitutes a construction project that complies with good practice in accordance with Scottish Renewables (SR) and Scottish Environment Protection Agency (SEPA) guidance.

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 on detailed investigations into peat depths within the Development;
- Detail proposals for the management of excavated peat and other soils;
- Consider the potential effect 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 including any habitat management plan.

The oPMP has been produced in accordance with SR and the SEPA Guidance on Peat Excavations and Management¹. 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 wind farm; and
- Changes resulting from the construction methods used by the construction 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 Construction Contractor will implement these wherever possible and will consult with SEPA and The Highland Council.

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 21/08/2020)

1.1 The Site

The Site is located south-east of Loch Ness and approximately 15 kilometres (km) north-east of Fort Augustus and the site boundary is approximately 1,694 hectares (ha), as shown on Figure 13.2.1. The Site incorporates the boundaries of the Operational Corriegarth Wind Farm in its entirety and will utilise approximately 13 km of the existing access tracks, particularly from the site entrance to the main body of the Site. The Site is centred on NGR 257500, 813100.

The topography of the Site and immediate vicinity is complex and largely consist of rural upland farmland used for grazing and grouse shooting. The Site itself varies significantly in elevation ranging from approximately 550 - 720 m Above Ordnance Datum (AOD) in the central part of the Site, which is within the Operational Corriegarth Wind Farm, before sloping west along the access track towards the B862, with elevations reducing to approximately 200 m AOD. A number of hills are present in the immediate vicinity of the Site boundary while the summit of Carn na Saobhaidhe is within the western site area, at 603 m AOD.

Published British Geological Survey (BGS)² mapping indicates the superficial soils at the Site to be dominated by peat. There are small pockets of Till, Glacial Sand and Gravel in the east of the Site, although large areas of the site in the south are recorded as being unmapped. Desk based information in soils and geology and due to the rural upland nature and peatland habitats that peat deposits were considered to be present across most of the site area and in particular topographically low areas.

The BGS mapping indicates the central, southern and western areas of the study area are underlain by Loch Laggan Psammite Formation and the Monadhliath Semipelite Formation rocks with intrusions of North Britain Siluro aged Devonian Calc-alkaline Dyke Suite comprising Felsite rock across the central and southern areas. The northern area was noted to be rocks belonging to the Gairbeinn Pebbly Psammite Member. Online geographical data will be used to produce desk study plans and for use during an initial site walkover and subsequent probing investigations.

² British Geological Survey (2019): <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>
(Accessed 21/08/2020)

2 AIM AND OBJECTIVES

2.1 Background

Detailed peat survey work and completion of assessments such as Geology and Peat EIA Chapter and Peat Slide Hazard & Risk Assessment (PSHRA) allows a consistent approach to the management of peat across the Site.

The overall objective of the design of the Development 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 Site topography;
- Understand the extent of the Site layout and how excavations will take place; and
- Modelling the peat depth profile based on probing and a digital terrain modelling in 3D.

2.2 Approach to Minimising Peat Excavation

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

- The development of an access track design which avoids deeper peat where practicable;
- The design and orientation of turbines and crane hardstandings considers local topographical and peat constraints; and
- Consideration of borrow pit locations in areas of shallow peat cover.

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 to achieve a successful materials strategy 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.

2.3 Aim and Objectives

2.3.1 Aim of the Peat Management Plan

The aim of this oPMP is to demonstrate to the planning authority, SEPA 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. It is prepared in accordance with the SR and SEPA guidance and 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, stored and re-used.

2.3.2 Objectives of the outline Peat Management Plan

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

This is achieved through responding of 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 materials;
- 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;
- Outlining preliminary Habitat Management opportunities for peat; 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

3.1.1 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 are typically suitable for re-instatement because they contain 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 section of the borrow pits or 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 Investigations

The existing peat depths across the Site have been determined through a phased survey approach. The survey was initiated to inform the EIA and Site design work while supporting the PSRA. The survey comprised a total of 3,380 probes.

Peat depths ranged from 0.0 m to 5.3 m thickness across the Site and were shown as localised or isolated zones within the central area of the Site.

Initial peat depth surveys were undertaken in August, September and December 2019 comprising 100 m grid coverage across the Site, where accessible. This rationale of probing is in accordance with the phase one approach as detailed in the Scottish Government guidance for investigating peat.

Further peat depth surveys (phase two) were undertaken in June and July of 2020. 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 between 10 m and 25 m either side of the centre line, and

10 m cross-hair at turbines across the Site. As this is a Site with extensive Peat presence, a 10 m grid of a 50m radius was captured at each turbine position to better understand potential micro siting benefits.

The peat depths are illustrated in Figure 13.2.2 'Recorded Peat Depths' within Appendix 1 of this document.

Following the completion of the peat depth surveys, a series of peat coring was undertaken in September 2020 to further characterise the nature of the peatland. All proposed turbine locations where peat had been identified at depths greater than 1.0m were subjected to coring, T1 was included within the assessment as a precaution despite peat only being recorded at 0.95m.

In total, peat cores were obtained from 11 of the 16 proposed turbine locations, Peat Coring Results are available in Appendix D of the PSRA while analysis of the results is discussed within section 4.4 of the PSRA.

3.3 Summary of Peat Depths

Throughout the peat surveys to date, a total of 3,380 probes were progressed. 13.4% of these recorded no peat or peat less than 0.5 m, while 31.73% recorded peat between 0.5 m and 1.0 m. Thick peat (where the depth was greater than >1.0 m) was recorded at 54.85% of locations.

The maximum peat depth recorded was 5.3 m in the south-western area of the Site. Generally, peat depths exceeded 1.0 m, which is anticipated with flat topography surrounded by slopes.

The distribution of peat deposits along the proposed tracks and infrastructure are shown in Figure 13.2.3 'Interpolated Peat Depths' included in Appendix A.

Where peat is consistently over 1.0 m thick and existing ground levels permit, the use of floating roads should be adapted. The 'Potential Areas for Floating Tracks' are shown on Figure 13.2.4 included in Appendix 1. Prior to commencing works on Site, the Construction Contractor, as part of any floating road design, will undertake further ground investigation to establish peat characteristics and surcharging strategies.

3.3.1 Excavation Calculation

To derive an accurate estimate of excavated volumes, the access tracks and turbine hardstandings have been developed to outline design stage in 3D based Ordinance Survey digital Terrain 5 data. This design is overlaid on the 3D peat surface model which has been derived from extensive peat probe surveying undertaken.

In addition, a further 10 % of the total volume excavated material has been applied as contingency bulking factor.

By analysing these models, it is possible to derive volumes of excavation and estimate what the excavated material comprises – be this non peat superficial soils, peat or other materials. Table 3.1 conveys the construction activities that will generate excavated peat, and the expected volumes produced from each activity based on 3D modelling exercise, and without the proposed mitigation of micro-siting.

Table 3.1: Peat Excavation Volumes Based on Construction Activity

Development Component	Estimated Volume of Excavated Peat (m ³)	Estimated Volume of Acrotelmic Peat (m ³)	Estimated Volume of Catotelmic Peat (m ³)
Turbine Foundations, Crane Hardstanding and associated earthworks	176,547	76,166	100,381
Tracks and associated earthworks and verges	123,968	54,271	69,698
Borrow Pits	20,970	20,970	0
Construction Compound	1,500	1,500	0
Substation	0	0	0
SUB-TOTAL	322,985	152,907	170,079
+10 % Contingency Bulking Factor	32,299	15,291	17,008
TOTAL	355,284	168,197	187,087

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

3.3.2 Peat Re-Use Requirements

The principles of re-instating peat and peaty 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 (ECow) to ensure methods are properly adhered to.

Table 3.2 illustrates the opportunities for re-use of peat within the Site including the demand for acrotelm and catotelm peat. Table 3.3 summarises the total peat balance estimated during construction of the Development. It should be noted that 51,626 m³ of peat is estimated as a reduction in peat excavations associated with floating tracks. Detailed excavation calculations are included in Appendix 2.

Table 3.2: Peat Re-use Volumes Based on Construction Activity

Development Area	Total Demand Estimate (m ³)	Acrotelm Demand (m ³)	Catotelm Demand (m ³)	Estimated Reinstatement Thickness (max) where gradient permits (m)	Assumptions
Turbine Foundations, Crane Hardstanding and associated earthworks	52,003	19,501	32,502	0.8m	Turbines and associated earthworks will be dressed off with up to 0.80m of peat and peaty soils, with any catotelm placed in the lower regions and acrotelm and turves placed nearer the surface.
Tracks and associated earthworks and verges	49,004	18,377	30,628	0.8m	Where new wind farm tracks are proposed, peat will be reinstated along verges and associated earthwork banking and verges with peat up to 0.8m. It is assumed that where peat depths are 1.0m or greater, floating track construction techniques will be adopted where gradients permit. This is anticipated to be in the region of 40% of tracks.
Borrow Pits	58,420	29,210	29,210	1.0m	It is assumed that peat reinstatement thicknesses will reflect the peat excavated prior to borrow pit and in this case up to 1.0m at both borrow pits 1 & 2
Construction Compound	2,500	2,500	0	0.5	The construction compound will be placed on an existing hardstand and no excavation of peat or re-use is likely.
Substation	0	0	0	0	The substation will be dressed off across the extents of the substation with up to 0.3m of peat and/or peaty soils.
SUB-TOTAL	161,927	69,588	92,340		
Deduction due to Floating Tracks	51,626	20,445	31,180	-	Where peat depths are 1.0m or greater, floating track construction techniques will be adopted where gradients

					permit. This is anticipated to be in the region of 40% of tracks.
Peat Reuse for Habitat Management	141,730	78,164	63,566		Peatland restoration including ditch blocking, hag reparation and use as part of the wider Habitat Management Plan for the Site. The restoration techniques will be discussed in more detail in the HMP.
TOTAL	355,283	168,197	187,086		

Table 3.3 is presented as a summary of the assessment of peat reinstatement volumes. A detailed assessment is provided in Appendix 2 of this oPMP.

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

- New access track sections assume verges on both sides at widths of approximately 0.5m excluding earthenworks. 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 0.5m wide. As the access track edges will have graded slopes, peat depths will vary across the profile to tie into existing ground levels.
- Earthwork areas along the access tracks could consist of up to 0.8m thick peat thinning towards the verges. 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.
- Catotelmic soils will only be used if it is suitable for purpose.
- Borrow pit reinstatement assumes a maximum peat depth thickness of that which existed prior to borrow pits works, but anticipated not to exceed 1.0m. This will include the re-use of acrotelmic peat soils and turves.

Excavated peat will be temporarily placed adjacent to where it is excavated. However, where this is not possible, temporary peat storage areas are detailed on Figure 13.2.5, included in Appendix 1. These are areas of previous disturbance, outwith 50 m buffer of watercourses and where topography permits.

3.3.3 *Peat Reuse Techniques - Habitat Management Plan*

A Habitat Management Plan would be agreed post-consent incorporating the re-use of peat within the estate.

The areas identified as suitable blanket bog and other peatland reparation is not defined as yet and this is expected to take place post-consent through consultation with SEPA and NatureScot. However, it is expected that the main types of restoration will include reparation of peat hags and bare and exposed peat as well as opportunities for ditch blocking and damming.

These works will include but not be limited to the following techniques summarised below:

- Drains will be in-filled using peat excavated during wind farm construction. Peat will be placed in drains as soon after it is excavated as possible. Where immediate re-use of peat is not practical, peat will be stored in designated storage areas before being carefully transported to the drains.
- Deeper drains will be dammed at intervals using artificial materials such as metal/wood structures or plastic sheeting, taking into account best practice methods (e.g. Armstrong et al. 2009). Such dams will be used on all larger drains to retain water levels in the in-filled ditches and prevent peat being washed out of the drains and into watercourses.
- On smaller drains and plough furrows simple peat dams are likely to be sufficient to fulfil this purpose. However, the need for peat dams will be negated in many drains due to the placement of excavated peat. In the case of highly permeable peat, or vertically cracked peat, dams will be designed to reach into the low permeability subsoil or less permeable peat layers in order to avoid collapse and to prevent preferential underground water flow through the installed material.
- Final details regarding the type, number, location and spacing of artificial dams and details of the drains will be determined following completion of detailed topographical and drainage surveys. Information from these surveys will be used to calculate the maximum potential loads of accumulating water, such as after heavy rain events, to ensure that structures are strong enough to withstand this pressure. Specialist input from a civil engineer and/or hydrologist will be required to design dams adequately to ensure no risk of failure.

Table 3.3: Peat Balance Calculations

Peat Description	Total Peat Demand Estimate for Reinstatement (m ³)	Total Peat Supply from Excavation (m ³)	Surplus (+) or Deficit (-) (m ³)
Acrotelm	168,197	168,197	0
Catotelm	187,086	187,086	0
Total	355,283	355,283	0

Table 3.3 demonstrates that there will be a balance in excavation and re-use of peat and peaty soils. 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 appointed Construction Contractor and reinstatement depths are adjusted accordingly.

3.3.4 Handling and Storage of Peat

It will be necessary for the Construction Contractor to prescribe methods and timing involved in excavating, handling and storing peat for use in reinstatement. The Construction Contractor will be responsible for appointing a chartered geotechnical engineer 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;
- Temporary storage and replacement of any peat excavated from the borrow pit should occur adjacent to and within the source pit; and
- Transport of peat on Site from excavation to temporary storage and restoration Site should be minimised.

Indicative temporary peat storage areas are illustrated on Figure 13.2.5.

3.3.5 Waste Management Plan Requirements

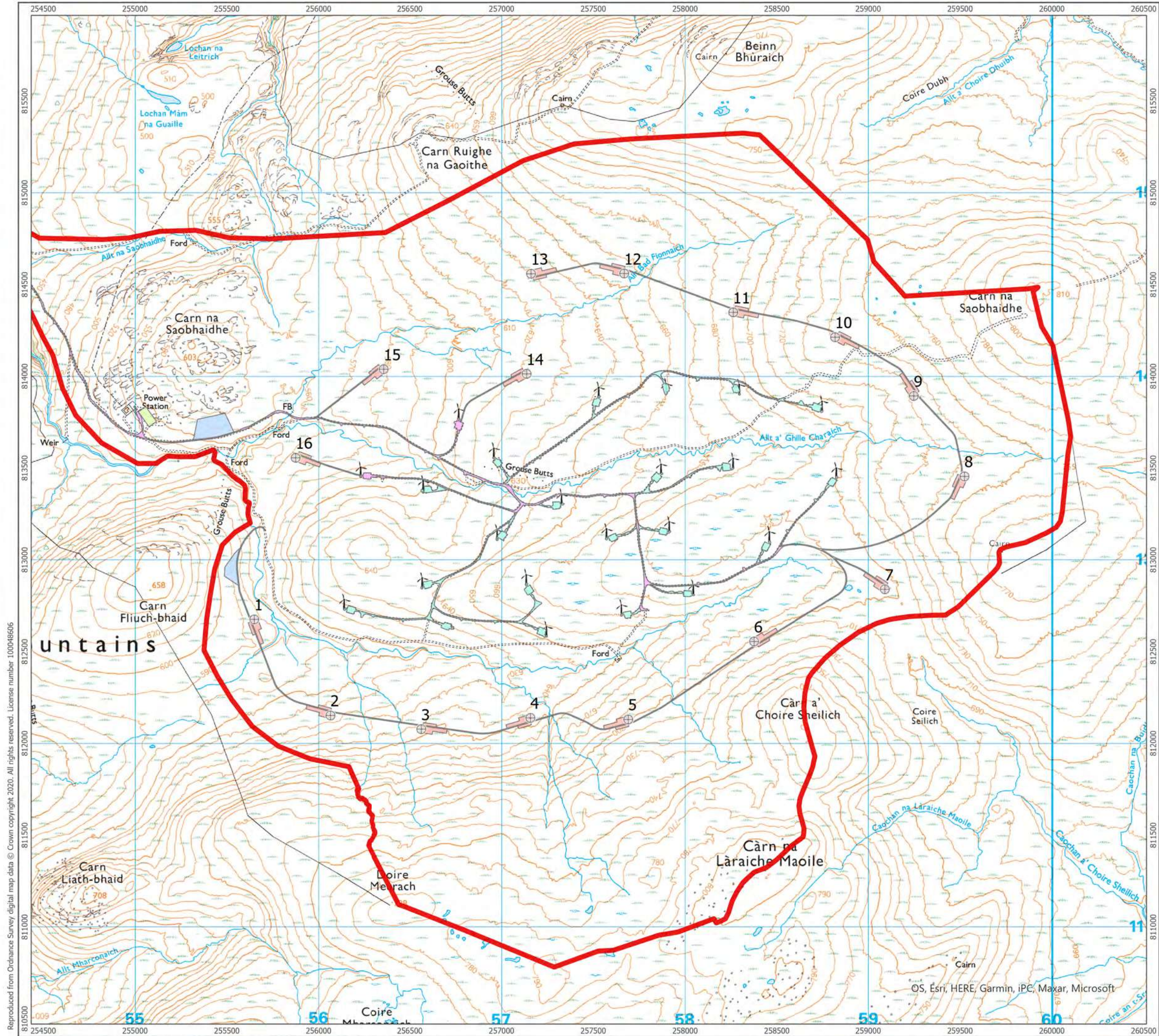
Based on the calculations carried out, the total peat volumes excavated will be fully incorporated in to the re-instatement works or peatland restoration through habitat management; therefore, it is unlikely to require a waste management licence.

4 CONCLUSIONS

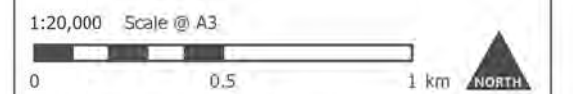
The following conclusions are drawn regarding the management of peat and excavated materials within the:

- 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;
- The re-use calculations include the assumption of using floating track construction methods as identified in Figure 13.2.4 'Assumed Floating Track Areas';
- Excavated peat will be used for the reinstatement of access track verges, cut and fill embankment slopes, reinstatement of turbine hardstandings, reinstatement of borrow pits and 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.

APPENDIX 1 - DRAWINGS



- Site Boundary
- Proposed Turbine Location
- Proposed Site Infrastructure
- Borrow Pit Extents
 - Construction Compound
 - Crane Hardstanding
 - Existing Tracks to be Utilised
 - Existing Wind Farm Tracks
 - Laydown Area
 - Proposed Access Tracks
 - Substation Compound
 - Track Widening Area



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Site Layout Plan
Figure 13.2.1

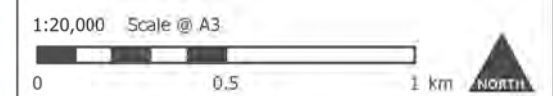
Corriegarth Wind Farm Extension
oPMP



- Site Boundary
- Proposed Turbine Location
- Proposed Site Infrastructure
- Borrow Pit Extents
 - Construction Compound
 - Crane Hardstanding
 - Existing Tracks to be Utilised
 - Existing Wind Farm Tracks
 - Laydown Area
 - Proposed Access Tracks
 - Substation Compound
 - Track Widening Area

Recorded Peat Depths (m)

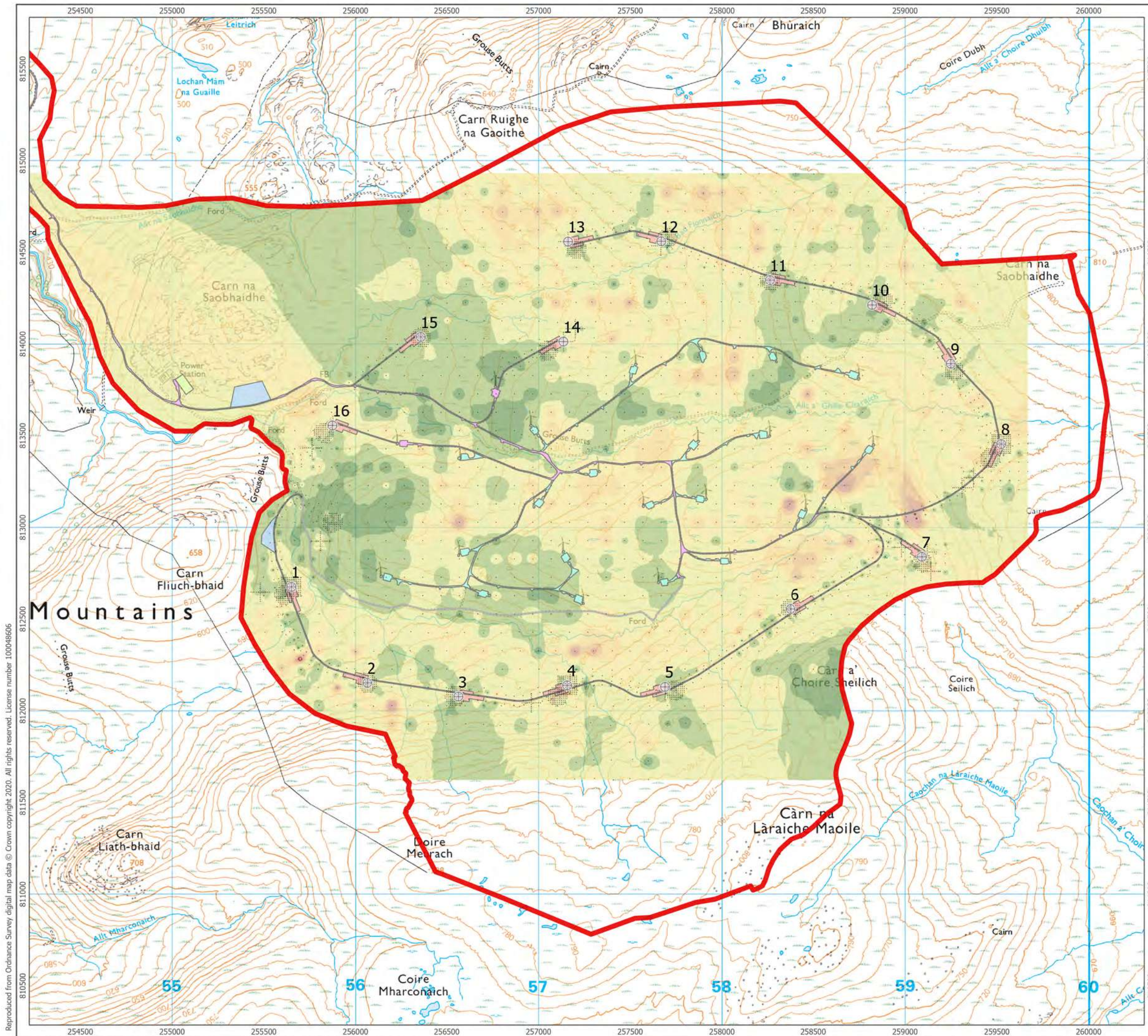
- 0.00 - 0.50
- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 2.50
- 2.51 - 3.00
- 3.01 - 3.50
- 3.51 - 4.00
- 4.01 - 4.50
- 4.51 - 5.00
- 5.01 - 5.50



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Recorded Peat Depths
Figure 13.2.2

Corriegarth Wind Farm Extension
oPMP

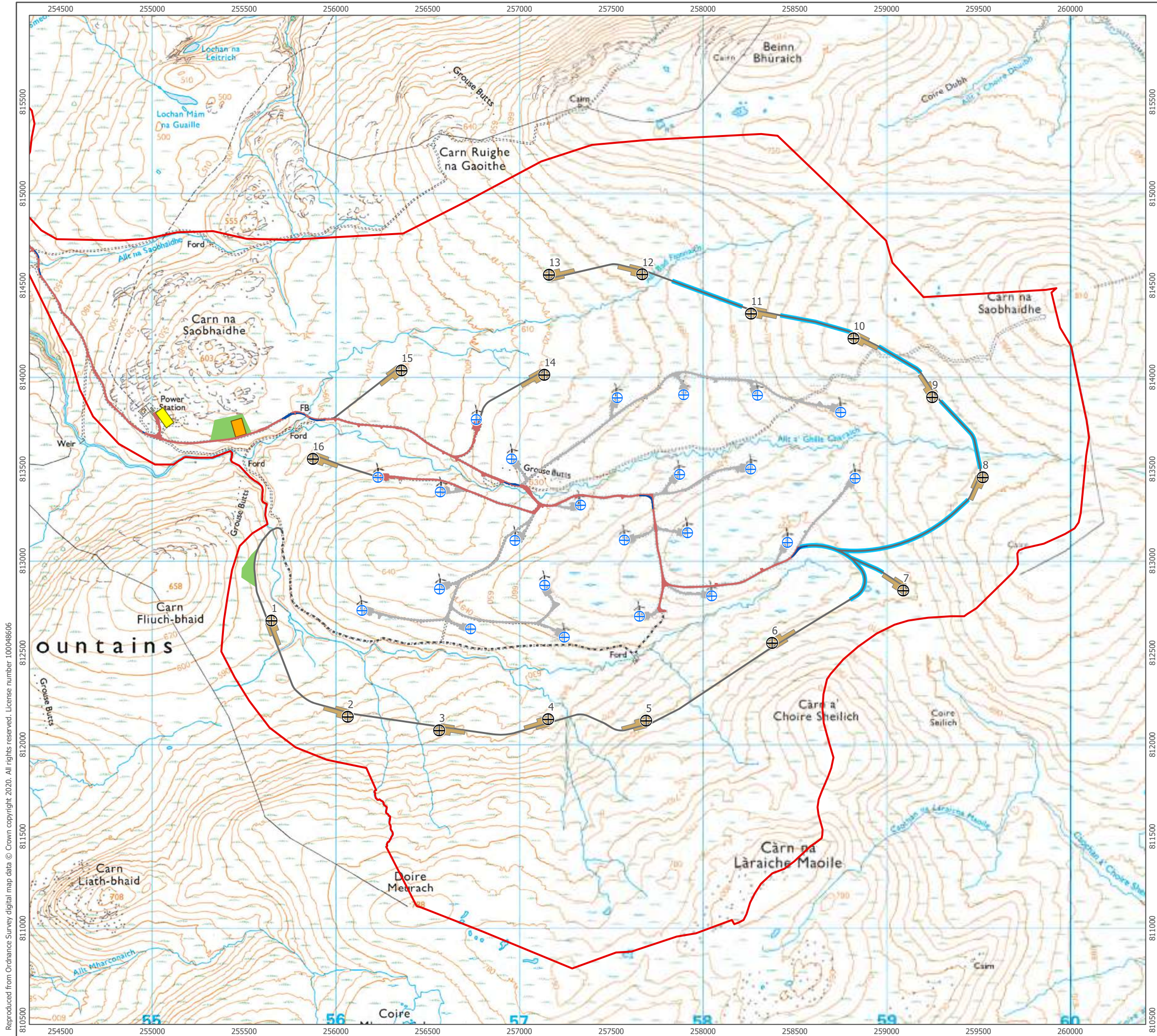


- Site Boundary
- Proposed Turbine Location
- Recorded Peat Depths
- Proposed Site Infrastructure
 - Borrow Pit Extents
 - Construction Compound
 - Crane Hardstanding
 - Existing Tracks to be Utilised
 - Existing Wind Farm Tracks
 - Laydown Area
 - Proposed Access Tracks
 - Substation Compound
 - Track Widening Area
- Interpolated Peat Depths (m)
 - 0.00 - 0.50
 - 0.51 - 1.00
 - 1.01 - 1.50
 - 1.51 - 2.00
 - 2.01 - 2.50
 - 2.51 - 3.00
 - 3.01 - 3.50
 - 3.51 - 4.00
 - 4.01 - 4.50
 - 4.51 - 5.00
 - 5.01 - 5.50



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Interpolated Peat Depths
Figure 13.2.3



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-  Site Boundary
-  Proposed Turbine Location
-  Operational Corriegarth Wind Turbines
-  Existing Track (Use restricted to construction phase for access to borrow pit only)
-  Borrow Pit Extents
-  Construction Compound
-  Crane Hardstanding
-  Existing Tracks to be Utilised
-  Existing Wind Farm Tracks
-  Laydown Area
-  Proposed Access Tracks
-  Substation Compound
-  Track Widening Area
-  Proposed Floating Tracks

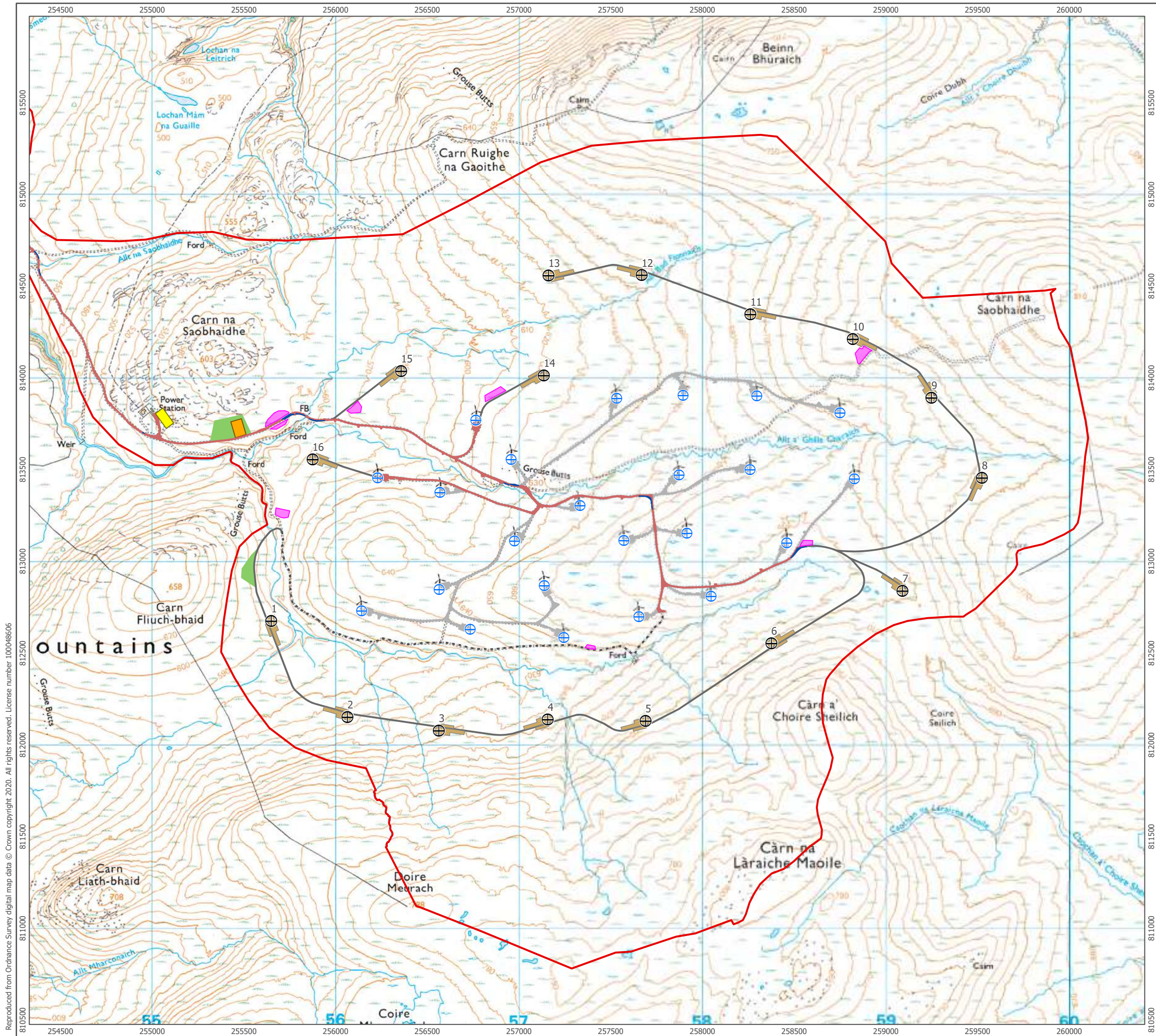
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0 0.5 1 km 

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Potential Area for Floating Tracks
Figure 13.2.4

**Corriegarth 2 Wind Farm
Outline Peat Management Plan**





Site Boundary

Proposed Turbine Location

Operational Corriegarth Wind Turbines

Existing Track (Use restricted to construction phase for access to borrow pit only)

Borrow Pit Extents

Construction Compound

Crane Hardstanding

Existing Tracks to be Utilised

Existing Wind Farm Tracks

Laydown Area

Proposed Access Tracks

Substation Compound

Track Widening Area

Proposed Temporary Peat Storage Areas

1:20,000 Scale @ A3

0

0.5

1 km

NORTH

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Checked By: SC

Date: 11/09/2020

Temporary Peat Storage Areas

Figure 13.2.5

Corriegarth Wind Farm Extension

Outline Peat Management Plan

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APPENDIX 2 - EARTHWORKS VOLUMES AND CALCULATIONS

3369 - Corriegarth - Peat and Borrow Pit Excavation and Re-Use Calculations

Infrastructure	Total Area of Infrastructure inc EW.	Peat Cut Volume	Total Acrotelm Excavation Est.	Total Catotelm Excavation Est.	Areas of Reinstament	Total Peat Re-use Est.	Total Acrotelm Re-use Est.	Total Catotelm Re-use Est.
Turbines								
T1	8893	16362	4446.5	11915.5	3435	2748	1030.5	1717.5
T2	9407	10981	4703.5	6277.5	3949	3159.2	1184.7	1974.5
T3	11240	10846	5620	5226	5782	4625.6	1734.6	2891
T4	11025	14062	5512.5	8549.5	5567	4453.6	1670.1	2783.5
T5	12916	13468	6458	7010	7458	5966.4	2237.4	3729
T6	12580	15933	6290	9643	7122	5697.6	2136.6	3561
T7	7638	11073	3819	7254	2180	1744	654	1090
T8	7952	13103	3976	9127	2494	1995.2	748.2	1247
T9	8577	9382	4288.5	5093.5	3119	2495.2	935.7	1559.5
T10	7686	7491	3843	3648	2228	1782.4	668.4	1114
T11	11435	9918	5717.5	4200.5	5977	4781.6	1793.1	2988.5
T12	8124	9994	4062	5932	2666	2132.8	799.8	1333
T13	9208	9250	4604	4646	3750	3000	1125	1875
T14	8405	8275	4202.5	4072.5	2947	2357.6	884.1	1473.5
T15	8163	5681	4081.5	1599.5	2705	2164	811.5	1352.5
T16	9083	10728	4541.5	6186.5	3625	2900	1087.5	1812.5
SUB-TOTAL	152332	176547	76166	100381	65004	52003.2	19501.2	32502
Tracks								
Corridor 1	2457	2016	1228.5	787.5	357	285.6	107.1	178.5
Corridor 2	2413	1290	1206.5	83.5	433	346.4	129.9	216.5
Corridor 3	2208	1542	1104	438	588	470.4	176.4	294
Corridor 4	32156	44627	16078	28549	15314	12251.2	4594.2	7657
Corridor 5	1657	2151	828.5	1322.5	457	365.6	137.1	228.5
Corridor 6	67650	72342	33825	38517	44106	35284.8	13231.8	22053
Tracks - Upgrade				0				0
SUB-TOTAL	108541	123968	54271	69698	61255	49004	18377	30628
Construction Compound								
Construction Compound	5000	1500	1500	0	5000	2500	2500	0
SUB-TOTAL	5000	1500	1500	0	5000	2500	2500	0
Substation								
Substation Compound	0	0	0	0	0	0	0	0
SUB-TOTAL	0	0	0	0	0	0	0	0
Borrow Pits								
BP1	25460	12730	12730	0	25460	25460	12730	12730
BP2	16480	8240	8240	0	32960	32960	16480	16480
SUB-TOTAL	41940	20970	20970	0	58420	58420	29210	29210
TOTAL Excavation Volume		322985	152907	170079	189679	161927	69588	92340
. +10% contingency for Bulking		32299	15291	17008				
TOTAL		355284	168197	187086				
Deduction For floating Tracks						51626	20445.5	31180.5
SUB-TOTAL After Deduction						51626	20445.5	31180.5
Peat Re-use in Habitat Management Plan						141730	78164	63566
SUB-TOTAL						141730	78164	63566
TOTAL PEAT EXCAVATION and REUSE		355284	168197	187086		355283	168197	187086



CORRIEGARTH 2 WIND FARM

APPENDIX A15.1

SEPTEMBER 2020



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PAYBACK TIME AND CO₂ EMISSIONS

1. Windfarm CO₂ emission saving over...	Exp.	Min.	Max.
...coal-fired electricity generation (t CO ₂ / yr)	247,579	241,389	253,768
...grid-mix of electricity generation (t CO ₂ / yr)	68,240	66,534	69,946
...fossil fuel-mix of electricity generation (t CO ₂ / yr)	121,098	118,071	124,126
Energy output from windfarm over lifetime (MWh)	8,073,216	7,871,386	8,275,046

Total CO₂ losses due to wind farm (tCO₂ eq.)	Exp.	Min.	Max.
2. Losses due to turbine life (e.g. manufacture, construction, decommissioning)	66,805	66,805	66,805
3. Losses due to backup	34,876	34,785	34,967
4. Losses due to reduced carbon fixing potential	1,270	676	5,979
5. Losses from soil organic matter	26,052	122	136,802
6. Losses due to DOC & POC leaching	2,163	5	31,909
7. Losses due to felling forestry	0	0	0
Total losses of carbon dioxide	131,166	102,393	276,463

8. Total CO₂ gains due to improvement of site (t CO₂ eq.)	Exp.	Min.	Max.
8a. Change in emissions due to improvement of degraded bogs	2,366	0	-3,301
8b. Change in emissions due to improvement of felled forestry	0	0	0
8c. Change in emissions due to restoration of peat from borrow pits	0	0	0
8d. Change in emissions due to removal of drainage from foundations & hardstanding	540	377	-3,473
Total change in emissions due to improvements	2,906	377	-6,774

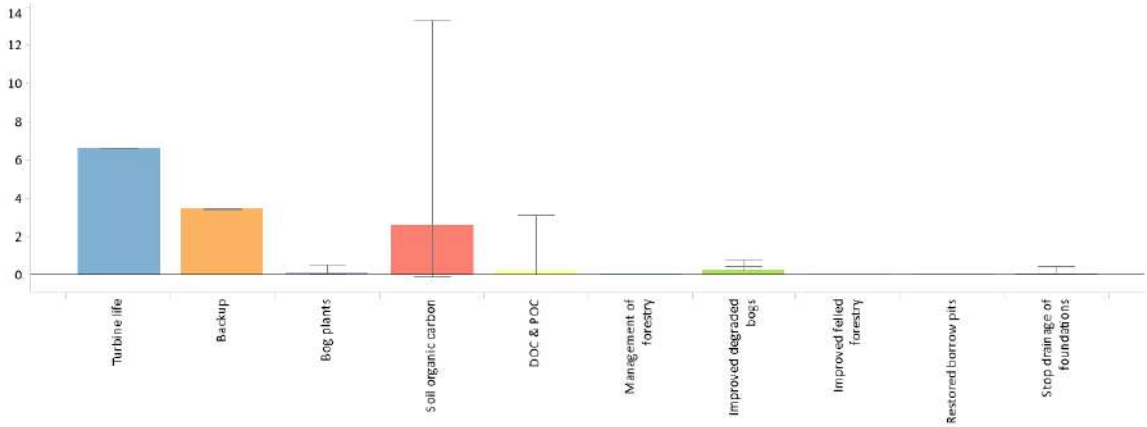
RESULTS	Exp.	Min.	Max.
Net emissions of carbon dioxide (t CO ₂ eq.)	134,073	95,620	276,840
Carbon Payback Time			
...coal-fired electricity generation (years)	0.5	0.4	1.1
...grid-mix of electricity generation (years)	2	1.4	4.2
...fossil fuel-mix of electricity generation (years)	1.1	0.8	2.3
Ratio of soil carbon loss to gain by restoration (not used in Scottish applications)	No gains!	0.02	No gains!
Ratio of CO ₂ eq. emissions to power generation (g/kWh) (for info. only)	16.61	11.56	35.17

PAYBACK TIME CHARTS

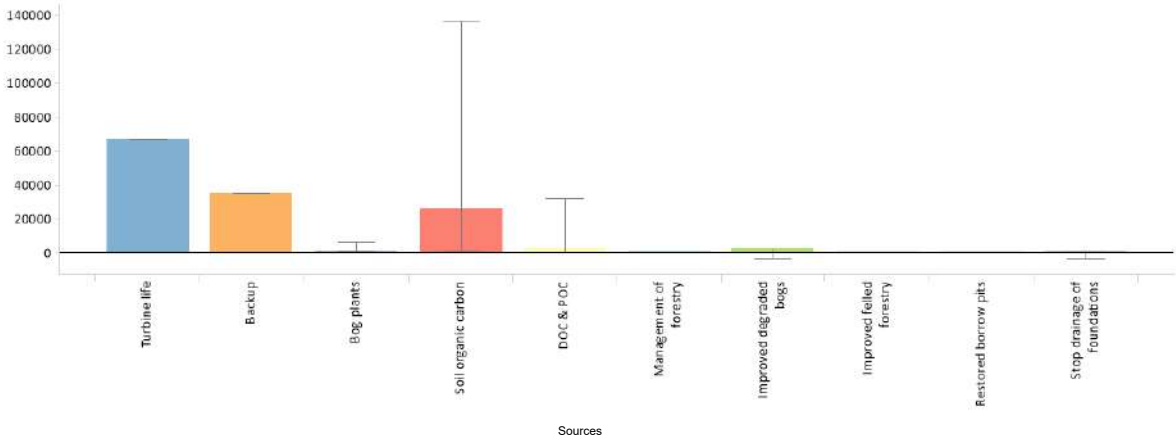
Payback Time - Charts

Payback Time
Payback Time - ChartsInput Data
1. Windfarm CO2 emission saving 2. CO2 loss due to turbine life 3. CO2 loss due to backup 4. Loss of CO2 fixing potential 5. Loss of soil CO2 (a.b) 5. Loss of soil CO2 (c.d.e) 6. CO2 loss by DOC & POC loss 7. Forestry CO2 loss 8. CO2 gain - site improvement

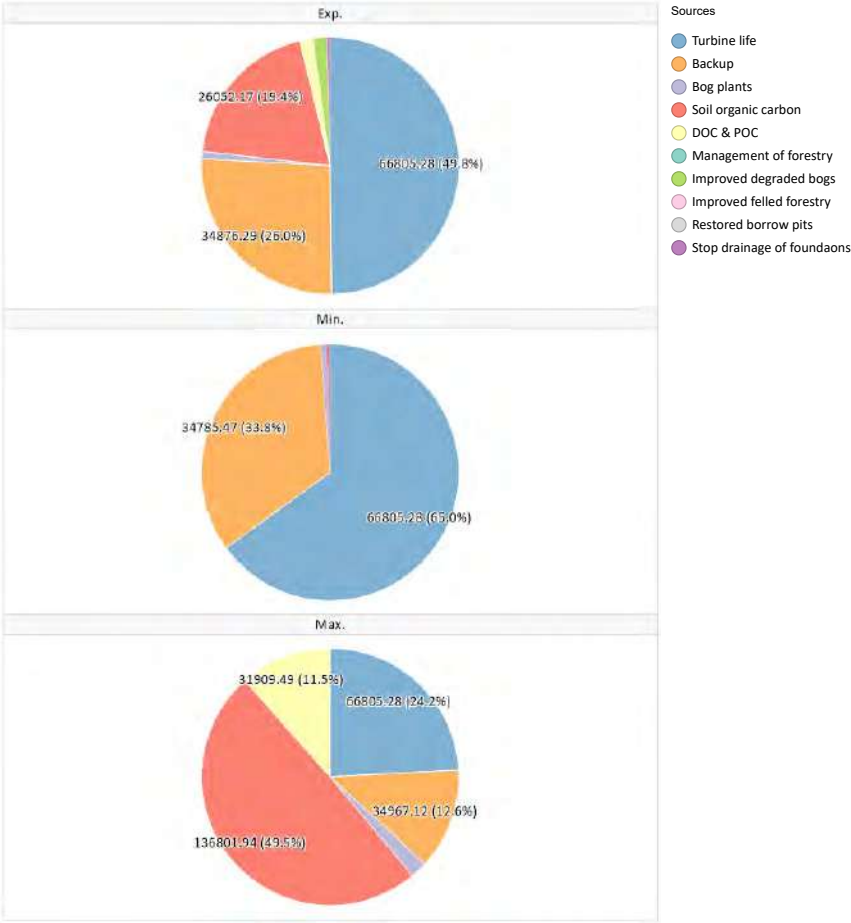
Carbon payback time (months) using fossil-fuel mix as counterfactual



Greenhouse gas emissions (t CO2 eq.)



Proportions of greenhouse gas emissions from different sources



INPUT DATA

Carbon Calculator v1.6.1

Corriegarth 2 Wind Farm Location: 57.189122 -4.361813

Corriegarth 2 Windfarm Limited

Core input data

Input data	Expected value	Minimum value	Maximum value	Source of data
Windfarm characteristics				
<u>Dimensions</u>				
No. of turbines	16	16	16	Chapter 4 - Development Description
Duration of consent (years)	30	30	30	Chapter 4 - Development Description
<u>Performance</u>				
Power rating of 1 turbine (MW)	4.8	4.8	4.8	Candidate Turbine = up to 4.8 MW
Capacity factor	40	39	41	Technical Estimation
<u>Backup</u>				
Fraction of output to backup (%)	3.84	3.83	3.85	Calculating Potential Carbon Losses & Savings from Wind Farms on Scottish Peatlands, Technical Note, Version 2.10.0, Para 19.
Additional emissions due to reduced thermal efficiency of the reserve generation (%)	10	10	10	Fixed
Total CO2 emission from turbine life (tCO ₂ MW ⁻¹) (eg. manufacture, construction, decommissioning)	Calculate wrt installed capacity	Calculate wrt installed capacity	Calculate wrt installed capacity	
Characteristics of peatland before windfarm development				
Type of peatland	Acid bog	Acid bog	Acid bog	Technical Appendix A13.2 - Outline Peat Management Plan Met Office Reference: https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages/gfhtjdb28
Average annual air temperature at site (°C)	8.45	5	11.9	Chapter 13 - Geology & Soils
Average depth of peat at site (m)	1.21	0.01	5.3	Scottish government Guidance - Guidance on Developments on Peatland - Site Surveys
C Content of dry peat (% by weight)	53.23	19.57	53.24	
Average extent of drainage around drainage features at site (m)	10	5	50	Technical Estimation
Average water table depth at site (m)	0.1	0.05	0.3	Technical Estimation
Dry soil bulk density (g cm ⁻³)	0.132	0.072	0.293	Scottish government Guidance - Guidance on Developments on Peatland - Site Surveys
Characteristics of bog plants				
Time required for regeneration of bog plants after restoration (years)	5	2	10	Technical Estimation - Not expected to deviate from standard regeneration timescales.

Input data	Expected value	Minimum value	Maximum value	Source of data
Carbon accumulation due to C fixation by bog plants in undrained peats (tC ha ⁻¹ yr ⁻¹)	0.25	0.24	0.26	SNH Guidance -Carbon Payback Calculator: Guidelines on Measurements
Forestry Plantation Characteristics				
Area of forestry plantation to be felled (ha)	0	0	0	N/A. No tree felling required.
Average rate of carbon sequestration in timber (tC ha ⁻¹ yr ⁻¹)	0	0	0	N/A. No tree felling required.
Counterfactual emission factors				
Coal-fired plant emission factor (t CO ₂ MWh ⁻¹)	0.92	0.92	0.92	
Grid-mix emission factor (t CO ₂ MWh ⁻¹)	0.25358	0.25358	0.25358	
Fossil fuel-mix emission factor (t CO ₂ MWh ⁻¹)	0.45	0.45	0.45	
Borrow pits				
Number of borrow pits	2	1	2	Chapter 4 - Development Description
Average length of pits (m)	190	190	190	Technical Appendix A4.1 Borrow Pit Assessment
Average width of pits (m)	117	117	117	Technical Appendix A4.1 Borrow Pit Assessment
Average depth of peat removed from pit (m)	0.5	0.5	0.5	Technical Estimation
Foundations and hard-standing area associated with each turbine				
Average length of turbine foundations (m)	21	21	21	Chapter 4 - Development Description
Average width of turbine foundations (m)	21	21	21	Chapter 4 - Development Description
Average depth of peat removed from turbine foundations(m)	1.07	1.07	1.07	Technical Appendix A13.1 - Peat Slide Risk Assessment
Average length of hard-standing (m)	40	40	40	Chapter 4 - Development Description
Average width of hard-standing (m)	35	35	35	Chapter 4 - Development Description
Average depth of peat removed from hard-standing (m)	1.17	1.17	1.17	Technical Appendix A13.2 - Outline Peat Management Plan
Volume of concrete used in construction of the ENTIRE windfarm				
Volume of concrete (m ³)	8000	8000	8000	Chapter 11 - Traffic and Transport
Access tracks				
Total length of access track (m)	23000	22996	23004	Chapter 4 - Development Description
Existing track length (m)	13000	12999	13001	Chapter 4 - Development Description
<u>Length of access track that is floating road (m)</u>	3000	2999	3001	Technical Appendix A13.2 - Outline Peat Management Plan
Floating road width (m)	5	5	5	Technical Appendix A13.2 - Outline Peat Management Plan
Floating road depth (m)	1	0.9	1.1	Technical Appendix A13.2 - Outline Peat Management Plan
Length of floating road that is drained (m)	3000	2999	3001	Technical Appendix A13.2 - Outline Peat Management Plan
Average depth of drains associated with floating roads (m)	0.5	0.5	0.5	Technical Appendix A13.2 - Outline Peat Management Plan
<u>Length of access track that is excavated road (m)</u>	3850	3849	3851	Chapter 4 - Development Description
Excavated road width (m)	5	5	5	Chapter 4 - Development Description
Average depth of peat excavated for road (m)	1.21	0.01	5.3	Technical Appendix A13.2 - Outline Peat Management Plan
<u>Length of access track that is rock filled road (m)</u>	3150	3149	3151	Chapter 4 - Development Description
Rock filled road width (m)	5	5	5	Chapter 4 - Development Description
Rock filled road depth (m)	0.65	0.45	0.7	Chapter 4 - Development Description

Input data	Expected value	Minimum value	Maximum value	Source of data
Length of rock filled road that is drained (m)	3150	3149	3151	Chapter 4 - Development Description
Average depth of drains associated with rock filled roads (m)	0.5	0.5	0.5	Chapter 4 - Development Description
Cable trenches				
Length of any cable trench on peat that does not follow access tracks and is lined with a permeable medium (eg. sand) (m)	0	0	0	N/A for this Development
Average depth of peat cut for cable trenches (m)	1.21	1.21	1.21	Technical Appendix A13.2 - Outline Peat Management Plan
Additional peat excavated (not already accounted for above)				
Volume of additional peat excavated (m ³)	0	0	0	N/A for this Development.
Area of additional peat excavated (m ²)	0	0	0	N/A for this Development.
Peat Landslide Hazard				
Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments	negligible	negligible	negligible	Fixed
Improvement of C sequestration at site by blocking drains, restoration of habitat etc				
<u>Improvement of degraded bog</u>				
Area of degraded bog to be improved (ha)	160	155	165	High Level Technical Estimation - Refined further prior to restoration.
Water table depth in degraded bog before improvement (m)	0.1	0.05	0.3	Technical Estimation
Water table depth in degraded bog after improvement (m)	0	0	0	High Level Technical Estimation - Refined further prior to restoration.
Time required for hydrology and habitat of bog to return to its previous state on improvement (years)	5	5	5	Technical Estimation
Period of time when effectiveness of the improvement in degraded bog can be guaranteed (years)	8	5	10	Technical Estimation
<u>Improvement of felled plantation land</u>				
Area of felled plantation to be improved (ha)	0	0	0	N/A. No tree felling anticipated.
Water table depth in felled area before improvement (m)	0.1	0.05	0.3	N/A. No tree felling anticipated.
Water table depth in felled area after improvement (m)	0.05	0	0.25	N/A. No tree felling anticipated.
Time required for hydrology and habitat of felled plantation to return to its previous state on improvement (years)	2	2	2	N/A. No tree felling anticipated.
Period of time when effectiveness of the improvement in felled plantation can be guaranteed (years)	2	2	2	N/A. No tree felling required.
<u>Restoration of peat removed from borrow pits</u>				
Area of borrow pits to be restored (ha)	4.19	4.19	4.19	Technical Appendix A4.1 - Borrow Pit Assessment
Depth of water table in borrow pit before restoration with respect to the restored surface (m)	0.1	0.05	0.3	Technical Estimation
Depth of water table in borrow pit after restoration with respect to the restored surface (m)	0	0	0	Technical Estimation

Input data	Expected value	Minimum value	Maximum value	Source of data
Time required for hydrology and habitat of borrow pit to return to its previous state on restoration (years)	5	5	5	Technical Estimation
Period of time when effectiveness of the restoration of peat removed from borrow pits can be guaranteed (years)	5	5	5	Technical Estimation
<u>Early removal of drainage from foundations and hardstanding</u>				
Water table depth around foundations and hardstanding before restoration (m)	0.1	0.05	0.3	Technical Estimation
Water table depth around foundations and hardstanding after restoration (m)	0	0	0	Technical Estimation
Time to completion of backfilling, removal of any surface drains, and full restoration of the hydrology (years)	5	5	5	Technical Estimation
Restoration of site after decommissioning				
<u>Will the hydrology of the site be restored on decommissioning?</u>	Yes	Yes	Yes	
Will you attempt to block any gullies that have formed due to the windfarm?	Yes	Yes	Yes	Details on gullies will be further refined during restoration.
Will you attempt to block all artificial ditches and facilitate rewetting?	Yes	Yes	Yes	Details on artificial ditches and rewetting further refined during restoration
<u>Will the habitat of the site be restored on decommissioning?</u>	Yes	Yes	Yes	
Will you control grazing on degraded areas?	Yes	Yes	Yes	Controlled grazing where possible.
Will you manage areas to favour reintroduction of species	Yes	Yes	Yes	No formal re-introduction, but improved habitats should encourage use of species not currently using the area.
Methodology				
Choice of methodology for calculating emission factors	Site specific (required for planning applications)			

Forestry input data

N/A

Construction input data

N/A

1 WINDFARM CO₂ EMISSION SAVING

Capacity Factor - Direct Input	Exp.	Min.	Max.
Capacity factor (%)	40	39	41

Annual energy output from windfarm (MW/yr)	Exp.	Min.	Max.
RESULTS			
Emissions saving over coal-fired electricity generation (tCO ₂ /yr)	247,579	241,389	253,768
Emissions saving over grid-mix of electricity generation (tCO ₂ /yr)	68,240	66,534	69,946
Emissions saving over fossil fuel - mix of electricity generation (tCO ₂ /yr)	121,098	118,071	124,126

2 CO₂ LOSS DUE TO TURBINE LIFE

Calculations of emissions with relation to installed capacity	Exp.	Min.	Max.
Emissions due to turbine from energy output (t CO ₂)	4017	4017	4017
Emissions due to cement used in construction (t CO ₂)	2528	2528	2528

RESULTS	Exp.	Min.	Max.
Losses due to turbine life (manufacture, construction, etc.) (t CO ₂)	66805	66805	66805
Additional CO ₂ payback time of windfarm due to turbine life			
...coal-fired electricity generation (months)	3	3	3
...grid-mix of electricity generation (months)	12	12	11
...fossil fuel - mix of electricity generation (months)	7	7	6

3 CO₂ LOSS DUE TO BACKUP

	Exp.	Min.	Max.
Reserve energy (MWh/yr)	25,834	25,767	25,902
Annual emissions due to backup from fossil fuel-mix of electricity generation (tCO ₂ /yr)	1,163	1,160	1,166
RESULTS			
Total emissions due to backup from fossil fuel-mix of electricity generation (tCO ₂)	34,876	34,785	34,967

4 LOSS OF CO₂ FIXING POTENTIAL

	Exp.	Min.	Max.
Area where carbon accumulation by bog plants is lost (ha)	39.58	24.01	156.78
Total loss of carbon accumulation up to time of restoration (tCO ₂ eq./ha)	32	28	38
RESULTS			
Total loss of carbon fixation by plants at the site (t CO ₂)	1270	676	5979
Additional CO ₂ payback time of windfarm due to loss of CO ₂ fixing potential			
...coal-fired electricity generation (months)	0	0	0
...grid-mix of electricity generation (months)	0	0	1
...fossil fuel - mix of electricity generation (months)	0	0	1

5 LOSS OF SOIL CO₂

5. Loss of Co ₂	Exp.	Min.	Max.
CO ₂ loss from removed peat (t CO ₂ equiv.)	22104.7	121.6	97426.9
CO ₂ loss from drained peat (t CO ₂ equiv.)	3947.47	0	39375.1
RESULTS			
Total CO ₂ loss from peat (removed + drained) (t CO ₂ equiv.)	26052.2	121.6	136802
Additional CO ₂ payback time of windfarm due to loss of soil CO ₂			
...coal-fired electricity generation (months)	1.26	0.01	6.47
...grid-mix of electricity generation (months)	4.58	0.02	23.47
...fossil fuel - mix of electricity generation (months)	2.58	0.01	13.23

5a. Volume of peat removed	Exp.	Min.	Max.
Peat removed from borrow pits			
Area of land lost in borrow pits (m ²)	44460	22230	44460
Volume of peat removed from borrow pits (m ³)	22230	11115	22230
Peat removed from turbine foundations			
Area of land lost in foundation (m ²)	7056	7056	7056
Volume of peat removed from foundation area (m ³)	7549.92	7549.92	7549.92
Peat removed from hard-standing			
Area of land lost in hard-standing (m ²)	22400	22400	22400
Volume of peat removed from hard-standing area (m ³)	26208	26208	26208
Peat removed from access tracks			
Area of land lost in floating roads (m ²)	15000	14995	15005
Volume of peat removed from floating roads (m ³)	15000	13495.5	16505.5
Area of land lost in excavated roads (m ²)	19250	19245	19255
Volume of peat removed from excavated roads (m ³)	23292.5	192.45	102052
Area of land lost in rock-filled roads (m ²)	15750	15745	15755
Volume of peat removed from rock-filled roads (m ³)	10237.5	7085.25	11028.5
Total area of land lost in access tracks (m ²)	50000	49985	50015
Total volume of peat removed due to access tracks (m ³)	48530	20773.2	129586
RESULTS			
Total area of land lost due to windfarm construction (m ²)	123916	101671	123931
Total volume of peat removed due to windfarm construction (m ³)	104518	65646.1	185573

5b. Co ₂ loss from removed peat	Exp.	Min.	Max.
CO ₂ loss from removed peat (t CO ₂)	26927.5	3391.62	106144
CO ₂ loss from undrained peat left in situ (t CO ₂)	4822.83	3270.02	8717.47
RESULTS			
CO ₂ loss attributable to peat removal only (t CO ₂)	22104.7	121.6	97426.9

5c. Volume of peat drained	Exp.	Min.	Max.
Total area affected by drainage around borrow pits (m2)	13080	3170	81400
Total volume affected by drainage around borrow pits (m3)	3270	792.5	20350
Peat affected by drainage around turbine foundation and hardstanding			
Total area affected by drainage of foundation and hardstanding area (m2)	43840	20320	347200
Total volume affected by drainage of foundation and hardstanding area (m3)	25646.4	11887.2	203112
Peat affected by drainage of access tracks			
Total area affected by drainage of access track(m2)	215000	114965	1015305
Total volume affected by drainage of access track(m3)	81085	19311.2	1178066
Peat affected by drainage of cable trenches			
Total area affected by drainage of cable trenches(m2)	0	0	0
Total volume affected by drainage of cable trenches(m3)	0	0	0
Drainage around additional peat excavated			
Total area affected by drainage (m2)	0	0	0
Total volume affected by drainage (m3)	0	0	0
RESULTS			
Total area affected by drainage due to windfarm (m2)	271920	138455	1443905
Total volume affected by drainage due to windfarm (m3)	110001	31990.9	1401528

5d. CO₂ loss from drained peat	Exp.	Min.	Max.
Calculations of C Loss from Drained Land if Site is NOT Restored after Decommissioning			
Total GHG emissions from Drained Land (t CO ₂ equiv.)	28340.3	1652.82	801646.5
Total GHG emissions from Undrained Land (t CO ₂ equiv.)	20641.2	1652.82	577688.7
Calculations of C Loss from Drained Land if Site IS Restored after Decommissioning			
Losses if Land is Drained			
CH ₄ emissions from drained land (t CO ₂ equiv.)	-100.8	-90.87	943.73
CO ₂ emissions from drained land (t CO ₂)	14631.5	4543.97	139997.5
Total GHG emissions from Drained Land (t CO ₂ equiv.)	14530.7	4453.1	140941.3
Losses if Land is Undrained			
CH ₄ emissions from undrained land (t CO ₂ equiv.)	1922.69	-90.87	24245.99
CO ₂ emissions from undrained land (t CO ₂)	8660.49	4543.97	77320.19
Total GHG emissions from Undrained Land (t CO ₂ equiv.)	10583.2	4453.1	101566.2
RESULTS			
Total GHG emissions due to drainage (t CO ₂ equiv.)	3947.47	0	39375.08

5e. Emission rates from soil	Exp.	Min.	Max.
Calculations following IPCC default methodology			
Flooded period (days/year)	178	178	178
Annual rate of methane emission (t CH ₄ -C/ha year)	0.04	0.04	0.04
Annual rate of carbon dioxide emission (t CO ₂ /ha year)	35.2	35.2	35.2
Calculations following ECOSSE based methodology			
Total area affected by drainage due to wind farm construction (ha)	27.19	13.85	144.39
Average water table depth of drained land (m)	0.4	0.3	0.97
Selected emission characteristics following site specific methodology			
Rate of carbon dioxide emission in drained soil (t CO ₂ /ha year)	15.37	10.26	24.24
Rate of carbon dioxide emission in undrained soil (t CO ₂ /ha year)	2.51	10.26	1.99
Rate of methane emission in drained soil (t CH ₄ -C/ha year)	0	-0.01	0.01
Rate of methane emission in undrained soil (t CH ₄ -C/ha year)	0.14	-0.01	0.28
RESULTS			
Selected rate of carbon dioxide emission in drained soil (t CO ₂ /ha year)	15.37	10.26	24.24
Selected rate of carbon dioxide emission in undrained soil (t CO ₂ /ha year)	2.51	10.26	1.99
Selected rate of methane emission in drained soil (t CH ₄ -C/ha year)	0	-0.01	0.01
Selected rate of methane emission in undrained soil (t CH ₄ -C/ha year)	0.14	-0.01	0.28

6 CO₂ LOSS BY DOC AND POC LOSS

	Exp.	Min.	Max.
Gross CO ₂ loss from restored drained land (t CO ₂)	5970.96	0	62677.3
Gross CH ₄ loss from restored drained land (t CO ₂ equiv.)	0	0	0
Gross CO ₂ loss from improved land (t CO ₂)	0	12.02	0
Gross CH ₄ loss from improved land (t CO ₂ equiv.)	4348.41	365.41	12794.5
Total gaseous loss of C (t C)	1734.63	12.21	17405
Total C loss as DOC (t C)	451	0.86	6962.01
Total C loss as POC (t C)	138.77	0.49	1740.5
RESULTS			
Total CO ₂ loss due to DOC leaching (t CO ₂)	1653.69	3.14	25527.6
Total CO ₂ loss due to POC leaching (t CO ₂)	508.83	1.79	6381.9
Total CO ₂ loss due to DOC & POC leaching (t CO ₂)	2162.52	4.93	31909.5
Additional CO ₂ payback time of windfarm due to DOC & POC			
...coal-fired electricity generation (months)	0	0	2
...grid-mix of electricity generation (months)	0	0	5
...fossil fuel - mix of electricity generation (months)	0	0	3

7 FORESTRY CO₂ LOSS

	Exp.	Min.	Max.
Area of forestry plantation to be felled (ha)	0	0	0
Carbon sequestered (t C ha ⁻¹ yr ⁻¹)	0	0	0
Lifetime of windfarm (years)	30	30	30
Carbon sequestered over the lifetime of the windfarm (t C ha ⁻¹)	0	0	0
RESULTS			
Total carbon loss due to felling of forestry (t CO ₂)	0	0	0
Additional CO ₂ payback time of windfarm due to management of forestry			
...coal-fired electricity generation (months)	0	0	0
...grid-mix of electricity generation (months)	0	0	0
...fossil fuel - mix of electricity generation (months)	0	0	0

8 CO₂ GAIN – SITE IMPROVEMENT

Degraded Bog	Exp.	Min.	Max.
1. Description of site			
Area to be improved (ha)	160	155	165
Depth of peat above water table before improvement (m)	0.1	0.01	0.3
Depth of peat above water table after improvement (m)	0	0	0
2. Losses with improvement			
Improved period (years)	3	5	0
Selected annual rate of methane emissions (t CH ₄ -C ha ⁻¹ yr ⁻¹)	0.493	0.481	0.505
CH ₄ emissions from improved land (t CO ₂ equiv.)	3540.092	0	6234.749
Selected annual rate of carbon dioxide emissions (t CO ₂ ha ⁻¹ yr ⁻¹)	0.123	-0.795	1.04
CO ₂ emissions from improved land (t CO ₂ equiv.)	30.139	0	439.66
Total GHG emissions from improved land (t CO ₂ equiv.)	3570.23	0	6674.41
3. Losses without improvement			
Improved period (years)	3	5	0
Selected annual rate of methane emissions (t CH ₄ -C ha ⁻¹ yr ⁻¹)	0.139	0.423	0.018
CH ₄ emissions from improved land (t CO ₂ equiv.)	0	0	0
Selected annual rate of carbon dioxide emissions (t CO ₂ ha ⁻¹ yr ⁻¹)	2.509	-0.644	12.091
CO ₂ emissions from unimproved land (t CO ₂ equiv.)	1204.198	0	9975.282
Total GHG emissions from unimproved land (t CO ₂ equiv.)	1204.198	0	9975.282
RESULTS			
4. Reduction in GHG emissions due to improvement of site			
Reduction in GHG emissions due to improvement (t CO ₂ equiv.)	-2366.03	0	3300.872

Felled Forestry	Exp.	Min.	Max.
1. Description of site			
Area to be improved (ha)	0	0	0
Depth of peat above water table before improvement (m)	0.1	0.01	0.3
Depth of peat above water table after improvement (m)	0.05	0.01	0
2. Losses with improvement			
Improved period (years)	0	0	0
Selected annual rate of methane emissions (t CH ₄ -C ha ⁻¹ yr ⁻¹)	0.263	0.423	0.505
CH ₄ emissions from improved land (t CO ₂ equiv.)	0	0	0
Selected annual rate of carbon dioxide emissions (t CO ₂ ha ⁻¹ yr ⁻¹)	1.069	-0.644	1.04
CO ₂ emissions from improved land (t CO ₂ equiv.)	0	0	0
Total GHG emissions from improved land (t CO ₂ equiv.)	0	0	0
3. Losses without improvement			
Improved period (years)	0	0	0
Selected annual rate of methane emissions (t CH ₄ -C ha ⁻¹ yr ⁻¹)	0.139	0.423	0.018
CH ₄ emissions from improved land (t CO ₂ equiv.)	0	0	0
Selected annual rate of carbon dioxide emissions (t CO ₂ ha ⁻¹ yr ⁻¹)	2.509	-0.644	12.091
CO ₂ emissions from unimproved land (t CO ₂ equiv.)	0	0	0
Total GHG emissions from unimproved land (t CO ₂ equiv.)	0	0	0
RESULTS			
4. Reduction in GHG emissions due to improvement of site			
Reduction in GHG emissions due to improvement (t CO ₂ equiv.)	0	0	0

Borrow Pits	Exp.	Min.	Max.
1. Description of site			
Area to be improved (ha)	4.19	4.19	4.19
Depth of peat above water table before improvement (m)	0.1	0.05	0.3
Depth of peat above water table after improvement (m)	0	0	0
2. Losses with improvement			
Improved period (years)	0	0	0
Selected annual rate of methane emissions (t CH ₄ -C ha ⁻¹ yr ⁻¹)	0.493	0.481	0.505
CH ₄ emissions from improved land (t CO ₂ equiv.)	0	0	0
Selected annual rate of carbon dioxide emissions (t CO ₂ ha ⁻¹ yr ⁻¹)	0.123	-0.795	1.04
CO ₂ emissions from improved land (t CO ₂ equiv.)	0	0	0
Total GHG emissions from improved land (t CO ₂ equiv.)	0	0	0
3. Losses without improvement			
Improved period (years)	0	0	0
Selected annual rate of methane emissions (t CH ₄ -C ha ⁻¹ yr ⁻¹)	0.139	0.251	0.018
CH ₄ emissions from improved land (t CO ₂ equiv.)	0	0	0
Selected annual rate of carbon dioxide emissions (t CO ₂ ha ⁻¹ yr ⁻¹)	2.509	0.151	12.091
CO ₂ emissions from unimproved land (t CO ₂ equiv.)	0	0	0
Total GHG emissions from unimproved land (t CO ₂ equiv.)	0	0	0
RESULTS			
4. Reduction in GHG emissions due to improvement of site			
Reduction in GHG emissions due to improvement (t CO ₂ equiv.)	0	0	0

Foundations and Hardstanding	Exp.	Min.	Max.
1. Description of site			
Area to be improved (ha)	4.384	2.032	34.72
Depth of peat above water table before improvement (m)	0.1	0.01	0.3
Depth of peat above water table after improvement (m)	0	0	0
2. Losses with improvement			
Improved period (years)	25	25	25
Selected annual rate of methane emissions (t CH ₄ -C ha ⁻¹ yr ⁻¹)	0.493	0.481	0.505
CH ₄ emissions from improved land (t CO ₂ equiv.)	808.321	365.41	6559.712
Selected annual rate of carbon dioxide emissions (t CO ₂ ha ⁻¹ yr ⁻¹)	0.123	-0.795	1.04
CO ₂ emissions from improved land (t CO ₂ equiv.)	6.882	-20.693	462.576
Total GHG emissions from improved land (t CO ₂ equiv.)	815.203	344.717	7022.288
3. Losses without improvement			
Improved period (years)	25	25	25
Selected annual rate of methane emissions (t CH ₄ -C ha ⁻¹ yr ⁻¹)	0.139	0.423	0.018
CH ₄ emissions from improved land (t CO ₂ equiv.)	0	0	0
Selected annual rate of carbon dioxide emissions (t CO ₂ ha ⁻¹ yr ⁻¹)	2.509	-0.644	12.091
CO ₂ emissions from unimproved land (t CO ₂ equiv.)	274.958	-32.714	10495.21
Total GHG emissions from unimproved land (t CO ₂ equiv.)	274.958	-32.714	10495.21
RESULTS			
4. Reduction in GHG emissions due to improvement of site			
Reduction in GHG emissions due to improvement (t CO ₂ equiv.)	-540.244	-377.431	3472.918