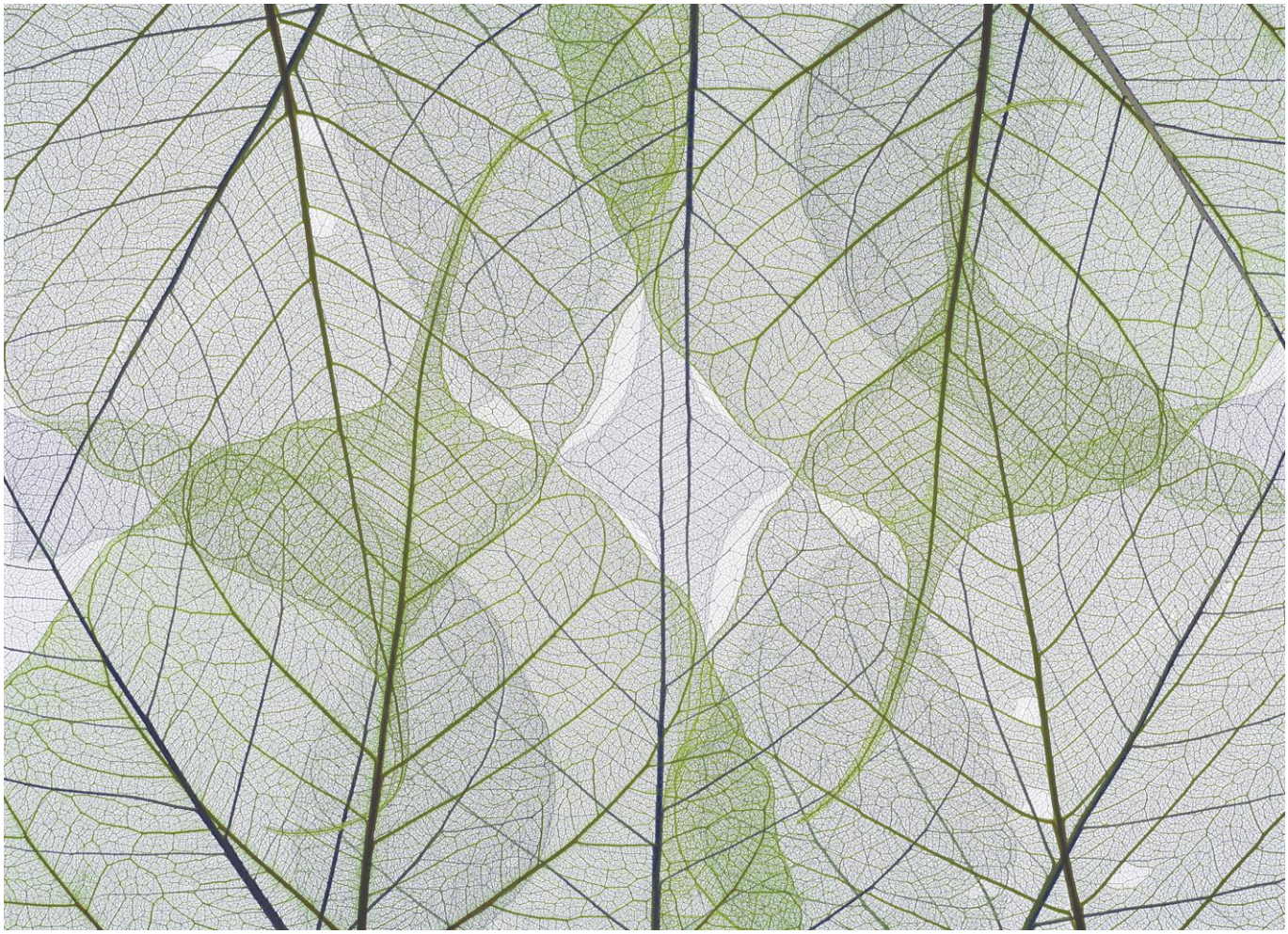

Kirkan Wind Farm Limited

Kirkan Wind Farm: Groundwater Dependent Terrestrial Ecosystems Assessment

Technical Appendix 9.2

650395-P9.2 (02)

MARCH 2019

RSK GENERAL NOTES

Project No.: 650395-P9.2 (02)

Title: Kirkan Wind Farm: Groundwater Dependent Terrestrial Ecosystems Assessment

Client: Kirkan Wind Farm Limited

Date: 19th March 2019

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Date:	19/03/2019	Date:	19/03/2019

Project manager	Joe Somerville
Date:	25/03/2019

CONTENTS

FIGURES

1 INTRODUCTION

1.1 This report provides a Groundwater-Dependent Terrestrial Ecosystem (GWDTE) Assessment for Kirkan Wind Farm and associated development infrastructure.

1.2 The report forms a Technical Appendix to the Environmental Impact Assessment Report (EIAR) for Kirkan Wind Farm and should be read in conjunction with this document. It has been produced in response to concerns over development in areas with, or that have potential to affect, sensitive groundwater-dependent habitats raised by Scottish Natural Heritage (SNH) and the Scottish Environment Protection Agency (SEPA).

1.3 This report describes the potentially groundwater-dependent habitats present at the site, and identifies and assesses the potential effects that may be caused to these habitats by the proposed development. Design and mitigation methods to avoid or minimise these risks are set out, along with a number of good construction practices that would be employed during all site works.

Location

1.4 The project area is located on Strathvaich Estate, in the Garve District of the Ross and Cromarty Region of the Highlands. The project area lies to the south of the A835 trunk road from Garve to Ullapool, and to the east of the operational Corriemoillie and Lochluichart wind farms.

1.5 The project area is approximately 5.3 km north-west of the village of Garve and approximately 19 km west-north-west of Dingwall. Ullapool is approximately 32 km to the north-west. The Aultguish Inn lies 490 m north-west of the project area's northern boundary.

Development proposals

1.6 The Kirkan Wind Farm proposal includes the following key elements:

- 17 turbines, of approximately up to 4.8 MW each and a maximum tip height of 175 m;
- Hardstanding areas at the base of each turbine, with a maximum total area of 1,850 m^2;
- Up to 2 permanent meteorological masts and associated hardstanding areas;
- 10,835 m of access track with associated watercourse crossings, of which 9,975 m is new access track, and 860 m is upgrade to existing track;
- An operations control building with parking and temporary welfare facilities;
- A substation compound;
- A substation construction compound, providing space for a prospective modular energy storage facility;
- Telecommunications equipment, including masts;
- Up to three temporary construction compounds;

- Two borrow pits, to provide suitable rock for access tracks, turbine bases and hard standings; and
- Underground cabling linking the turbines with the substation.

1.7 Full details of the project design are provided in Chapter 2 of the EIAR.

Aims

1.8 This report aims to undertake a review of available relevant site information, including all habitat and vegetation data and hydrogeological details, in order to provide an assessment of the risk to groundwater-dependent habitats. Recommendations will be made for mitigation measures and specific construction methods that should be implemented in order to minimise the risk of disturbance of damage to sensitive habitats during construction works and ongoing site operations.

Assessment method

1.9 The assessment has involved the following stages:

- Desk study;
- Vegetation mapping;
- Hydrogeological assessment;
- Detailed assessment of sensitive habitats;
- Identification of protection and mitigation measures.

2 DESK STUDY

Information sources

2.1 The desk study involved a review of available relevant information sources on the ground conditions at the Kirkan Wind Farm project area. Information sources included:

- Ordnance Survey mapping at 1:50,000, 1:25,000 and VectorMap Local raster mapping, Terrain 50 digital terrain model contours and OpenData mapping;
- Ordnance Survey MasterMap high-resolution orthorectified aerial imagery;
- British Geological Survey online geological mapping, 1:50,000 scale;
- Scotland's Soils digital soil mapping, 1:250,000 scale;
- Flood Estimation Handbook Web Service;
- Data provided by the client, including turbine foundation and track design specifications;
- Archive and extensive site data held by RSK Group.

Climate and topography

2.2 Kirkan Wind Farm is located in the Scottish Highlands, within the UK Meteorological (Met) Office's Northern Scotland regional climatic area. Much of Northern Scotland is exposed to the rain-bearing westerly winds, particularly the Western Isles and areas along the west coast. The location of the proposed development, roughly in the centre of the region and to the east of areas of higher ground, affords it some protection from the prevailing westerly and south-westerly rainfall directions.

2.3 Average annual rainfall for the project area catchments varies between 1,315 mm and 1,425 mm (CEH, 2018), reflecting the elevation and slope aspect of the catchments. Average annual rainfall for the climate monitoring station at Loch Glascarnoch is 1,767 mm (Met Office, 2018).

2.4 The project area is located over a broad slope with a north to north-easterly aspect. The proposed development infrastructure is largely confined to areas with relatively gentle slopes for practical reasons, although the topography is undulating and varied on a local scale. Notably steep slopes have been avoided. The highest ground within the site is located along the south-western site boundary, with land continuing to rise beyond the boundary.

Geology

2.5 Geological information is derived from the BGS GeoIndex online geological mapping (BGS, 2018) and the Ben Wyvis Geological Map (BGS, 2004) with supporting information from Trewin (2002) and Johnstone and Mykura (1989).

Bedrock geology

2.6 The bedrock in the Kirkan area is largely Pre-Cambrian in age. The western part belongs to the Crom Psammite Formation, part of the Moine Supergroup. This is described as a well-bedded, flaggy to massive, white to pale grey or buff psammite. The lower sections include garnet-bearing semipelite bands and the upper part is locally pebbly.

2.7 The eastern part of the project area is underlain by the Inchbae augen gneiss, a granitic gneiss forming part of the Carn Chuinneag Complex. This distinctive rock is described as a coarse biotite-granite gneiss with abundant feldspar augen ('eyes').

2.8 A small area around Beinn nan Cabag, in the south of the project area, is underlain by the Ousdale Arkose Formation, part of the Devonian-age Old Red Sandstone system. The rock is described as a red feldspar-rich conglomerate.

2.9 A major regional fault, the Strathconon Fault, runs through the project area from just west of Beinn nan Cabag to Black Bridge (BGS, 2018; Johnstone and Mykura, 1989). There are no records of recent or historical activity along the fault within the project area and immediate surroundings (BGS, 2019).

Superficial geology

2.10 Much of the project area is overlain by a blanket of glacial deposits, described as diamicton, gravel, sand and silt. Diamicton is a very variable glacial sediment consisting of unsorted material ranging in size from clay to boulders, usually with a matrix of clay to sand. It was formerly known as till or boulder clay.

2.11 The river valleys have deposits of alluvium, a mixture of clay, silt, sand and gravel. These are confined to the River Glascarnoch/Black Water channel and the lower reaches of the main project area watercourses and tend to be ribbon-like in form.

Soils and peat

2.12 The Soil Survey of Scotland digital soils mapping shows eight soil types within the project area. The Soil Survey mapping does not identify extensive blanket peat within the project area, although almost all the project area soils are noted to include peat or peaty components, typically peaty podzols and peaty gleys. Several phases of peat depth surveying have been undertaken, by Quadrat Scotland Ltd, Avian Ecology Ltd and RSKW Ltd, and details are provided in Technical Appendix 9.1.

2.13 The south-western part of the project area is indicated by the superficial geology mapping to have peat deposits. These extend from the upper reaches of Allt Giubhais Beag, skirting the western and southern slopes of Sìthean nan Cearc, to the upper reaches of Allt Bad an t-Seabhaig. Some outlying areas are indicated along the Allt Glac an t-Sìthein.

2.14 The peat depth survey (detailed in Technical Appendix 9.1) confirms that peat is present in the project area and has fairly broad coverage. Much of the peat is shallow, although some areas of deeper peat are present. These areas are typically well-defined and usually form small basins between the hill crests and around the headwater areas of the watercourses.

Hydrogeology

2.15 The Moine psammites and granitic gneisses present in the project area are classed as a very low productivity aquifer. The Old Red Sandstone strata in this area are classed as a low productivity aquifer. This means that natural groundwater flow within the project area bedrock is extremely limited. Where present, groundwater flow is concentrated principally within the near-surface weathered zone, which typically extends to around 1-2 m below ground surface. Groundwater storage and flow at deeper levels requires the presence of a network of fractures within the bedrock, which are infrequent and often isolated in these strata.

2.16 Regional groundwater flow will tend to mimic the natural topography, flowing north and east towards the Glascarnoch River/Black Water in this area. It is likely that natural groundwater discharges will be partly via small flows to springs and streams on the hill slope and partly to the Glascarnoch River/Black Water system. The desk study and site visit confirmed the presence of a small number of minor springs or seepage points in the upper (south-western) part of the project area, around the outcrop of the Ousdale Arkose which forms Beinn nan Cabag. The springs are mainly located along or slightly below the boundary between the Ousdale Arkose and the underlying Inchbae augen gneiss, indicating that the augen gneiss is effectively impermeable in areas away from significant fracturing.

2.17 The overlying glacial deposits are also classed as a low productivity aquifer. The larger areas of alluvial and river terrace deposits along the Glascarnoch River/Black Water are indicated to be a high productivity aquifer; however, their areal extent means that their productivity would be restricted by the small area and thickness of the alluvial bodies.

2.18 In exposed augen gneiss bedrock within the project area, no evidence of groundwater presence was observed. A shallow iron pan was visible in a natural exposure of diamicton at NGR NH 3677 6881, variably 0.2-0.3 m below ground level.

2.19 The peat bodies will also hold some groundwater. Flow within peat is known to be extremely slow, although it can contribute some limited baseflow to local burns. The main areas of peat on site are located on saddle areas and will provide some input to watercourse headwaters, in particular helping to maintain flow during dry periods.

Hydrology

2.20 The project area lies entirely within the catchment of the Glascarnoch River/Black Water system with drainage principally directed to the north and north-east. The Glascarnoch River lies immediately north of the northern project area boundary.

2.21 From Inchbae, the Glascarnoch/Black Water catchment covers an area of 181 km^2. It includes two main waterbodies: Loch Glascarnoch located approximately 750 m west of the site boundary, and Loch Vaich 4.5 km to the north. The Glascarnoch/Black Water forms a tributary to the River Conon. The catchment lies at an elevation between 165 m above Ordnance Datum (AOD) at Inchbae to a maximum of 1,084 m AOD at the summit of Beinn Dearg, north-west of Loch Glascarnoch.

2.22 Three main watercourses provide drainage within the project area. These are the Allt Giubhais Beag at the western side, the Allt Bad an t-Seabhaig at the eastern side and the Allt Glac an t-Sìthein in the central part of the project site. A number of minor

watercourses also provide drainage. These all form tributaries to the Glascarnoch River/Black Water system.

2.23 The project area has a Catchment Wetness Index, PROPWET, of 0.74, indicating that the area is wet for 74% of the time. The area has a low Baseflow Index, indicating that groundwater contribution is of limited importance to local watercourses. The Standard Percentage Runoff is relatively high, indicating that 50-55% of rainfall is converted into surface runoff from storm events. Catchment statistics are derived from the Flood Estimation Handbook Web Service (CEH, 2018).

3 VEGETATION AND GROUNDWATER DEPENDENCY

3.1 Groundwater-dependent terrestrial ecosystems (GWDTE) are defined by the UKTAG (2004) as:

> *"A terrestrial ecosystem of importance at Member State level that is directly dependent on the water level in or flow of water from a groundwater body (that is, in or from the saturated zone). Such an ecosystem may also be dependent on the concentrations of substances (and potential pollutants) within that groundwater body, but there must be a direct hydraulic connection with the groundwater body."*

3.2 In line with the guidance provided in UKTAG (2004), a dual approach to identifying GWDTE has been used. This involves detailed study of vegetation communities in order to determine the potential level of groundwater dependency, combined with detailed hydrogeological study in order to identify locations where groundwater reaches the surface and is able therefore to provide a source of water to associated habitats.

3.3 Determination of complete groundwater dependency is complicated by the ability of many vegetation communities to use whatever source of water is available. In some topographical and hydrogeological conditions, a particular community can be groundwater-dependent whereas in others the same community is surface water-dependent. Seasonal patterns of water use provide an additional level of complexity, with groundwater reliance typically being greater in the summer when rainfall and surface water are less available (Isherwood, 2013).

Vegetation mapping

3.4 The site vegetation has been surveyed using the National Vegetation Classification (NVC) survey method and is reported in full in Chapter 6, with NVC mapping provided in Figure 6.3. The key elements relating to groundwater dependency are summarised below.

3.5 NVC communities identified by SEPA as potentially highly or moderately groundwater-dependent, depending on the hydrogeological setting, are listed in SEPA's publication *"Planning advice on on-shore windfarm developments"* (SEPA, 2017). Within the project area, the potentially groundwater-dependent NVC communities identified are:

- M6 – *Carex echinata – Sphagnum recurvum/auriculatum* mire;
- M15 – *Scirpus cespitosus – Erica tetralix* wet heath.

3.6 The list of NVC communities provided in the updated annex (UKTAG, 2009) indicates that M6 has a high groundwater dependency and M15 has a moderate groundwater dependency in Scottish situations.

4 DETAILED ASSESSMENT

4.1 The study area, which comprises the project area plus a 250 m buffer zone around the project area boundary, has been inspected to identify areas of M6 and M15 habitat that require assessment.

4.2 Detailed consideration is required for sensitive habitats that lie within 100 m of access tracks or within 250 m of excavations such as turbine foundations and borrow pits (SEPA, 2017). The combined infrastructure buffer is provided as a green dashed line in the figures below, for reference purposes.

M6 mire

4.3 Two areas of M6 mire have been identified within 250 m of wind farm excavation works and therefore require detailed assessment.

Area 1

4.4 M6 mire Area 1 is located north of Turbine 6, along the Allt Glac an t-Sìthein channel (Figure 9.2.1). Within the 250 m excavation buffer, the mire area extends from NGR NH 3673 6852, nearest to Turbine 6, to NGR NH 3677 6866. It then continues to the site boundary and onwards downstream alongside the watercourse.

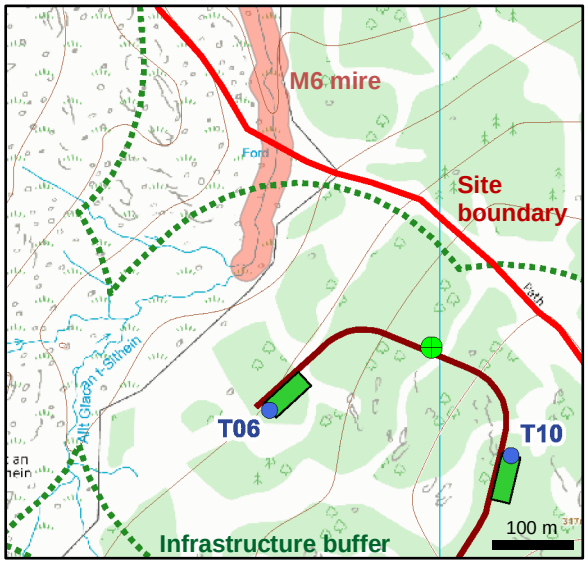

Figure 9.2.1: M6 mire Area 1.

4.5 At its closest point, the mire area is 135 m from the nearest part of the hardstanding required for Turbine 6.

4.6 The bedrock in this part of the project area is the Inchbae augen gneiss, overlain by superficial deposits of diamicton. Both materials have low to very low groundwater productivity.

4.7 The close association between the area of M6 mire and the watercourse channel in this area indicates that the mire is reliant either directly on the watercourse or on a source of shallow groundwater in hydraulic continuity with the watercourse. The Allt Glac an t-Sìthein is shown to have alluvial deposits present within its channel approximately 400 m downstream of this location. It is likely that these deposits are more extensive than

indicated on the geological mapping, as the map scale restricts the size of deposits that can be shown. These deposits may contribute groundwater to the M6 mire area.

4.8 The M6 mire in Area 1 is determined to have some groundwater dependency, closely associated with alluvial deposits present within the watercourse channel, and likely to be important during dry summer periods when surface water levels are reduced.

4.9 There is no hydrogeological link between excavation work relating to Turbine 6 and the M6 mire area, as the groundwater body associated with the mire is confined to the watercourse channel.

4.10 A surface water linkage via overland flow has potential to affect water quality. Protection measures relating to surface water and drainage runoff are provided in Section 5.

Area 2

4.11 M6 mire Area 2 is located east of Turbine 13, associated with the Allt Bad an t-Seabhaig channel and a natural bowl or hollow around the watercourse (Figure 9.2.2). Part of the bowl area is located within the 250 m excavation buffer for Turbine 13. The nearest part of the M6 area is located at NGR NH 3726 6793.

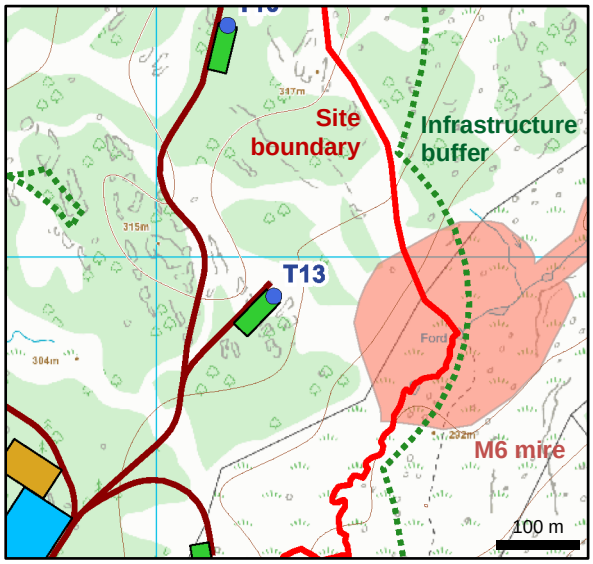

Figure 9.2.2: M6 mire Area 2.

4.12 At its closest point, the mire area is 100 m from the Turbine 13 foundation footprint.

4.13 The bedrock in this part of the site is Inchbae augen gneiss, overlain by superficial deposits of diamicton. Both materials have low to very low groundwater productivity.

4.14 There is clearly a close association between the area of M6 mire extending north-east from the bowl and the watercourse channel in this location.

4.15 The close association between the area of M6 mire and the watercourse channel, together with other natural and artificial drainage infrastructure present within this area, indicates that the mire in this area is reliant either directly on the watercourse and related drainage or on a source of shallow groundwater in continuity with the surface water system. The presence of an extensive artificial drainage network in this area suggests that surface water provides a significant part of the water supply to the M6 mire.

4.16 As with the Allt Glac an t-Sìthein, the Allt Bad an t-Seabhaig is shown to have alluvial deposits present within the main watercourse channel. One of these is immediately upstream (south-west) of the area of M6 mire. It is likely that there is additional alluvium present along the channel downstream of the mapped area. These deposits may contribute groundwater to the M6 mire area.

4.17 The M6 mire in Area 2 is determined to have limited groundwater dependency; where present, this is associated with alluvial deposits present within and adjacent to the watercourse channel and likely to have some importance during dry summer periods when surface water levels are reduced.

4.18 There is no hydrogeological link between excavation work relating to Turbine 13 and the M6 mire area, as the groundwater body associated with the mire is confined to the watercourse channel and immediate surroundings.

4.19 A surface water linkage via overland flow has potential to affect water quality. Protection measures relating to surface water and drainage runoff are provided in Section 5.

M15 wet heath

4.20 Much of the project area is indicated to be under NVC community M15. SEPA (2017) identifies M15 as a community *"… likely to be … moderately groundwater dependent … depending on the hydrogeological setting"*. The updated UKTAG Annex 1 table (UKTAG, 2009) identified M15 as class 2 (moderate), where class 1 is highly groundwater-dependent and class 3 is low groundwater-dependency.

4.21 The bedrock within the region is classified as low to very low productivity fracture flow, with the low productivity bedrock coinciding with the Ousdale Arkose bedrock in the far south-western part of the site. The Crom Psammite and Inchbae augen gneiss are both considered to have very low productivity fracture flow.

4.22 The glacial diamicton deposits are classified as low productivity, the lowest category for superficial deposits. Details from site visits indicate that these deposits are dominated by clay and silt with variable content of sand, gravel or coarser material. A shallow iron pan deposit was identified in a natural exposure of diamicton, adjacent to the Allt Glac an t-Sìthein (Figure 9.2.3).

4.23 It is not known whether iron pans of this kind are widespread at the site, but where they are present they will act to restrict downward circulation of water into the diamicton. The significant coverage of peaty podzols would suggest that iron pans can be expected across much of the site.

4.24 The only evidence of springs or seepage points identified within the project area was observed on the north-east facing slope of Beinn nan Cabag and its northern extension to the area around Turbine 1. Three minor springs, one seepage, and two ephemeral springs that were not flowing at the time of the site visit in August 2018, were identified. These are shown on Figure 9.2.4.

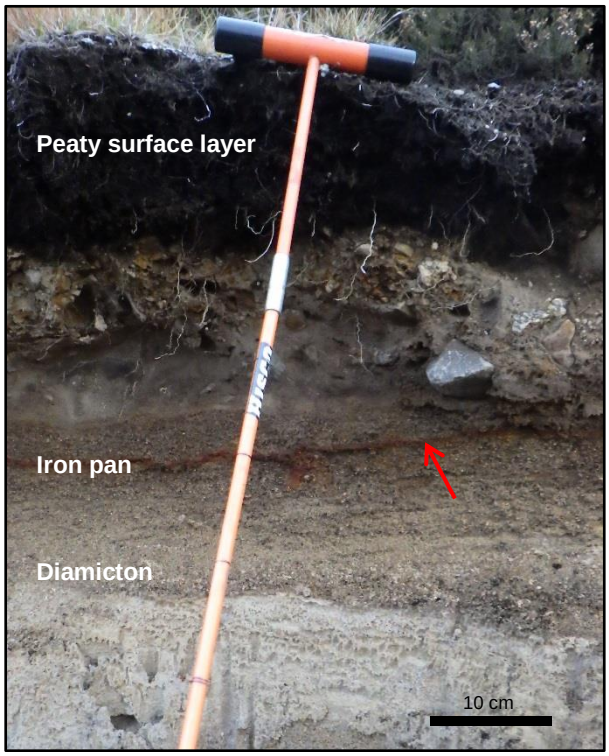

Figure 9.2.3: Soil and diamicton profile visible in a natural exposure.

Note the iron pan developed within the upper part of the diamicton. Divisions on the probe mark 10 cm. Photograph taken at NGR NH 3677 6881.

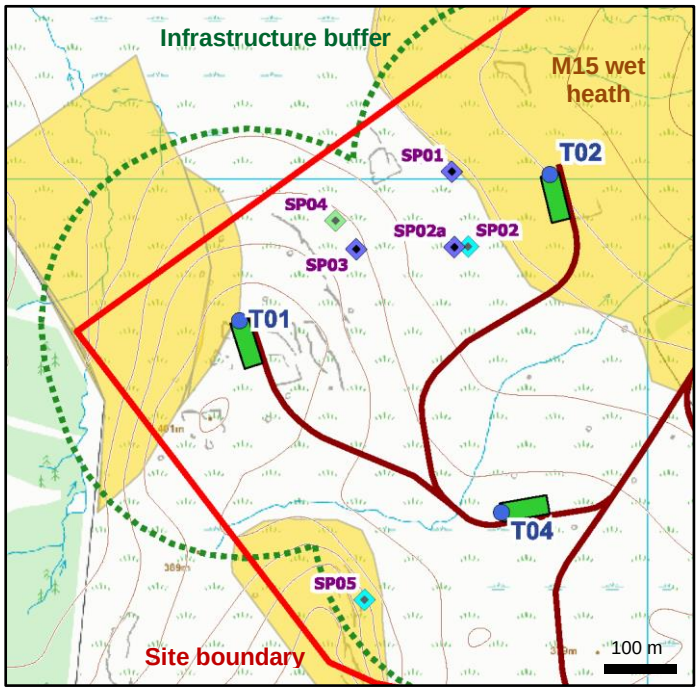

Figure 9.2.4: Location of spring and seepage points identified at Kirkan Wind Farm.

Spring symbols as follows:
Dark blue: spring;
Pale blue: ephemeral spring;
Pale green: seepage.

4.25 Springs SP01 and SP02a, plus ephemeral spring SP02, correspond with peat pipes reaching ground surface. These are most likely transmitting water through the peat that has arisen from sources within the Ousdale Arkose forming the northern end of Beinn nan Cabag, to the west or west-south-west of the visible spring points.

4.26 Spring SP03 and seepage SP04 are both located along the geological boundary between the Ousdale Arkose (west) and the Inchbae augen gneiss (east). These emerge on the

break-in-slope, above the peat deposits, and form watercourse headwaters across the peat surface.

4.27 Ephemeral spring SP05 is on the main part of Beinn nan Cabag and is part-way up the steep scarp slope. This appears to be connected with a natural fracture within the Ousdale Arkose bedrock. Its ephemeral nature indicates that there is limited water storage feeding the spring point, leading to the spring drying up during the warm summer conditions in 2018.

4.28 There is no M15 habitat directly associated with springs and seepages SP01, 02, 02a, 03 or 04. These springs all occur within habitat identified as M17 blanket bog. An area of M15 habitat is present downslope of these springs and seepages, but it has such a wide area coverage that it cannot be regarded as dependent on the limited spring flow available. There may be some limited groundwater reliance during dry weather.

4.29 There is an area of M15 habitat associated with SP05. Most of this habitat occurs upslope of the spring and the boundary change to habitat M17 occurs a short distance downslope of the spring, indicating that the habitat is unlikely to be groundwater-dependent in this area.

4.30 The areas of M15 wet heath present within the project area are determined not to be groundwater-dependent.

5 PROTECTION AND MITIGATION

5.1 Wetland habitats are known to be sensitive to changes in their water supply, whether this is from groundwater, surface water or rainwater. With this in mind, the following good practice construction methods would be used for all development on or adjacent to wetland or bog areas:

- Where track sections cross wetland or bog areas, cross-drainage would be provided within the track construction to ensure continuity of flow. This may take the form of a drainage layer within the track, suitably closely-spaced drainage pipes, or both as appropriate. These would be determined on a case-by-case basis to suit each individual area.
- Earthworks would be kept to a practical minimum within these areas, to reduce the area of wetland affected by the construction works.
- Trackside drainage would be kept to a practical minimum, and would only be installed where required to protect the track from erosion.
- All works through and adjacent to wetland areas would be supervised by the Environmental Clerk of Works.
- Site-specific mitigation, including track drainage segregation to avoid 'flushing' from excavation works, and micrositing to avoid specific higher sensitivity areas, would be identified and established where appropriate.

5.2 Specific mitigation relating to the two areas of M6 mire are detailed below.

M6 mire Area 1

5.3 Drainage infrastructure associated with Turbine 6 and adjacent access would be located to the west of Turbine 6. Discharge of any collected water would be directed away from the area of M6 mire in order to reduce the risk of 'flushing' from soil disturbance during construction. This would give greater opportunity for any residual entrained sediment to settle out before the runoff is able to reach the watercourse and the M6 mire habitat downstream.

5.4 Water would not be discharged directly into the watercourse. Additional protection, in terms of sediment traps using silt fencing, straw bales or suitable alternative, would be put in place between the water discharge location and the watercourse. Sediment trap installation would be overseen by the Environmental Clerk of Works.

5.5 It is likely that, as a result of the natural ground slope, additional sediment protection would be required between the access track to Turbine 6 and the area of M6 mire where any groundworks would be required upslope of the M6 mire. Installation of protection would be supervised by the Environmental Clerk of Works.

5.6 Tree felling in this area would be kept to a practical minimum in order to minimise mobilisation of sediment, and would only be undertaken once sediment protection has been established.

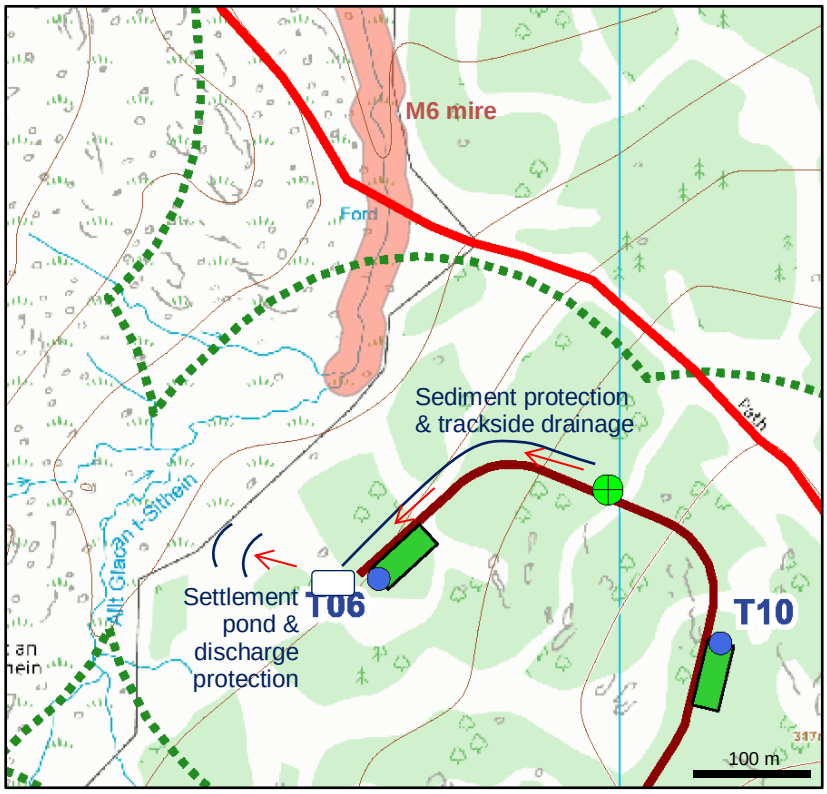

Figure 9.2.5: M6 mire Area 1 indicative drainage strategy.

M6 mire Area 2

5.7 It is likely that, as a result of the natural ground slope, a cut-off trench would be required between Turbine 13 and the area of M6 mire, to catch and divert runoff away from the area of M6 mire. Sediment protection measures would be installed between the cut-off trench and the mire to minimise risk of silty water escape towards the mire area. Installation of all protection measures would be supervised by the Environmental Clerk of Works.

5.8 Drainage infrastructure associated within Turbine 13 and adjacent access would be located to the south of its hardstanding. The cut-off trench identified above would feed into the settlement pond south of Turbine 13. Discharge of any collected water would be directed away from the area of M6 mire in order to reduce the risk of 'flushing' from soil disturbance during construction. This would give greater opportunity for any residual entrained sediment to settle out before the runoff is able to reach the watercourse and the M6 mire habitat downstream.

5.9 Water would not be discharged directly into the watercourse. Additional protection, in terms of sediment traps using silt fencing, straw bales or suitable alternative, would be put in place between the water discharge location and the watercourse. Sediment trap installation would be overseen by the Environmental Clerk of Works.

5.10 Tree felling in this area would be kept to a practical minimum in order to minimise mobilisation of sediment, and would only be undertaken once sediment protection has been established.

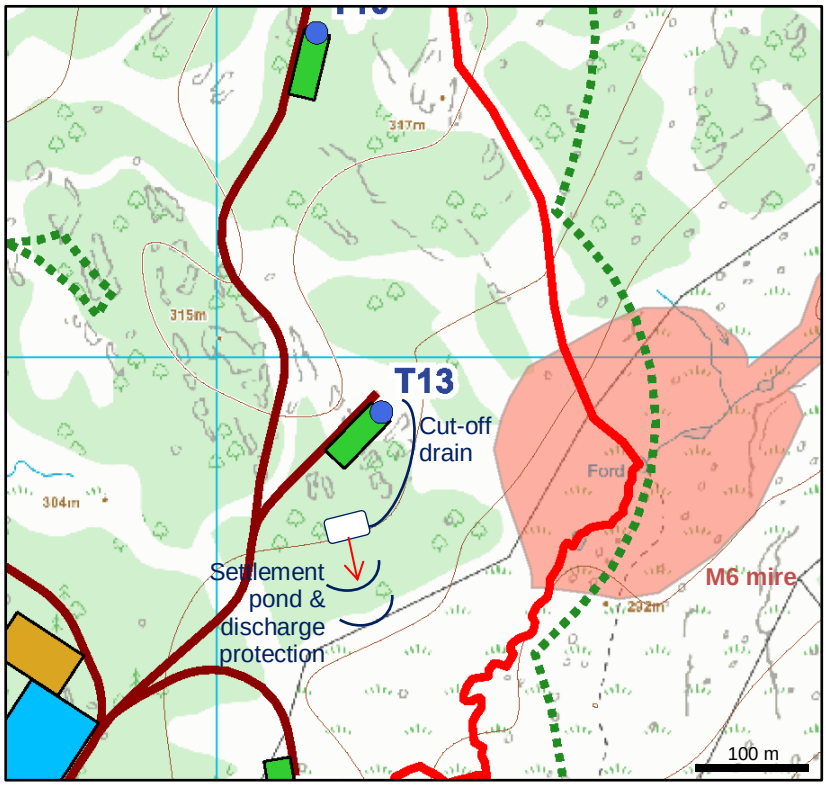

Figure 9.2.6: M6 mire Area 2 indicative drainage strategy.

6 CONCLUSIONS

6.1 A detailed assessment of the interaction between the proposed works for Kirkan Wind Farm and potentially groundwater-dependent terrestrial ecosystems has been undertaken.

6.2 Two areas of potentially groundwater-dependent wetland habitat have been identified. In both cases, the groundwater body associated with the wetland is confined to the watercourse valley and its immediate surroundings. No excavation work would be taking place within the groundwater bodies. Specific mitigation measures, to avoid changes to the watercourse hydrochemistry through 'flushing' of excavated soil in surface runoff, have been set out and would be adhered to during all site works.

6.3 The additional habitat type M15, which is identified as potentially moderately groundwater-dependent, has been assessed specifically within the context of Kirkan Wind Farm. The identified areas of M15 habitat are widespread and cover a substantial part of the project area and its immediate surroundings. Conversely, identified groundwater discharges and areas where groundwater has potential to be close to the ground surface are very limited, confined to parts of the watercourse channels, and to the area below Beinn nan Cabag in the westernmost part of the project area. Most of the M15 habitat is hydraulically separated from the identified springs and cannot therefore be described as groundwater-dependent. It is determined that, for the project area, M15 habitat is not groundwater-dependent.

6.4 Careful construction to ensure suitable continuity of flow across site tracks would help to minimise any potential impacts to the wetland habitats present within the project area.

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