



APPENDIX 3

Peat and Spoil Management Plan

Peat and Spoil Management Plan



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EXECUTIVE SUMMARY

Gavin and Doherty Geosolutions Limited (GDG) was commissioned by MKO in June 2022 to undertake a Peat and Spoil Management Plan (PSMP) for the proposed Cooloo Wind Farm. In accordance with planning guidelines compiled by the Department of the Environment, Heritage and Local Government (DoEHLG), where peat is present on a Proposed Wind Farm development, a peat management plan is required. The Proposed Project will comprise the construction of 9 no. wind turbines with an overall blade tip height of 180 metres and all associated works, and a 110kV substation and associated works, including underground 110kV cabling to connect to the national grid at Cloon 110kV substation. The full description of the Proposed Project is detailed in Chapter 4 of this EIAR.

This report provides details on the approximate predicted volumes of peat and spoil to be excavated during construction, the characteristics and types of peat and spoil to be excavated, construction methodologies to reduce the volumes of peat and spoil to be excavated, and the guidelines for how and where this excavated peat and spoil will be placed, reused and managed. This PSMP will be further developed and implemented after the Proposed Project receives consent. Further details and specific plans will be determined during the detailed design phase and once further confirmatory site investigations have been undertaken. These details will then be included in a detailed PSMP as part of the detailed Construction Environment Management Plan (CEMP). The responsibility for implementing the PSMP will lie with the Developer and may be delegated to their Contractor(s).

The peat thickness encountered by intrusive investigations across the Proposed Wind Farm site varies from 0m (in areas where peat is absent) to a maximum of 7.08m, with an average of 1.3m recorded. Areas of the Proposed Wind Farm site containing little to no peat (under 0.25m peat depths), underlain by cohesive or granular glacial tills, include T01 and associated crane hardstand, T04 and associated crane hardstand, T6-T7 foundations, T8 and associated crane hardstand, the substation, the temporary construction compound and the southern and central site access tracks. Much of the remaining proposed infrastructure, including T2-T3 and associated crane hardstands, T6-T7 hardstands and T9 and associated crane hardstand, the Battery Energy Storage System (BESS) compound and the majority of the northern access tracks are located in areas of cut-over peat, where turbary peat harvesting has removed significant quantities of peat. In total, 64% of recorded peat depths were under 1m, and 74% were under 2m.

Existing access tracks will be upgraded, and new access tracks will be constructed. The preliminary outline of access track construction types, construction methodologies, and methods for constructing turbine bases, hardstandings, and other infrastructure foundations have been defined. Piled WTG foundations will be used as an alternative to gravity base foundations where the ground conditions require it. Of the proposed new access tracks, 7.2km (78%) are expected to comprise founded construction, with the remaining 2.1km (22%) expected to comprise floated construction. A total of 1.25km of existing access track is proposed for upgrade.

Preliminary volumes for the peat generated during construction are presented in this document, along with guidelines for handling and storing excavated peat and recommendations for good

construction practices. It is calculated that the total peat excavation volume will be 39,530m³, while the total spoil excavation volume will be 75,300m³. It is assessed that the total capacity for placement and reinstatement of peat is 44,380 m³, and 77,550m³ for spoil, leading to an overall balance of 4,850m³ of contingency capacity for peat, and 1,780m³ for spoil.

The peat management assessment findings indicate that all the peat and spoil material excavated can be placed safely on-site during construction.

1 INTRODUCTION

GDG was commissioned by MKO in June 2022 to undertake a PSMP for the proposed Cooloo Wind Farm. In accordance with planning guidelines compiled by the Department of the Environment, Heritage and Local Government (DoEHLG), where peat is present on a Proposed Wind Farm development, a peat management plan is required. Based on the desk study and available ground investigation information, the Proposed Wind Farm site is partially underlain by peat. The Proposed Wind Farm site layout and peat depth plan are presented in Appendix A. This report does not include an assessment of the Proposed Grid Connection, as this passes through public road, and very little/no excavation of peat is anticipated. The Proposed Grid Connection is considered separately, in Technical Appendix 8-3.

1.1 STATEMENT OF AUTHORITY

GDG is a specialist geotechnical and civil design consultancy, providing innovative engineering solutions to a broad range of infrastructure problems. Our aim is to provide an innovative, cost-effective and reliable service tailored to meet and exceed our clients' requirements. We strive to attain the highest possible standards and are consistently looking to pioneer and develop new technologies and techniques while ensuring that all relevant design codes and practices are met.

GDG has been involved in many wind farm developments in both Ireland and the UK at various stages of development, i.e. preliminary feasibility, planning, peat stability assessment, design and construction. The GDG team of engineering geologists, geomorphologists, geotechnical engineers and environmental scientists has developed expertise in the design and construction of developments in peat areas. The GDG staff are intimately familiar with similar projects to the Proposed Project, having worked on wind farms at Yellow River, Cloncreen, Mount Lucas and Bruckana located in similar ground conditions.

The members of the GDG team involved in this PSMP include:

- **Paul Quigley – Project Director.** Paul is a Chartered Engineer with 28 years of experience in geotechnical engineering and UK Registered Ground Engineering (RoGEP) Adviser. He has worked on a wide variety of projects for employers, contractors and third parties, gaining a range of experience, including earthworks for major infrastructure schemes in Ireland and overseas, roads, tunnelling projects, flood protection schemes, retaining wall and basement projects, ground investigations and forensic reviews of failures. Paul has published numerous peer-reviewed technical papers and acted as an independent expert for several legal disputes centred on ground-related issues. He is a reviewer for the ICE Geotechnical Engineering Journal, a member of the Eurocode 7 review panel at NSAI and a former Chairman of the Geotechnical Society of Ireland.
- **Tim O'Shea.** Tim holds an honours degree in Civil and Environmental Engineering from University College Cork and is a Chartered member of Engineers Ireland. He is an Associate Director at GDG with over 20 years post graduate experience in Civil Engineering. Tim is experienced in the consenting, design and construction of wind energy projects. He has been

involved in the consenting of numerous wind energy projects in Ireland since his graduation in 2003. Tim has also led the design of several wind farms in Ireland and the UK, many with significant peat challenges.

- **Andria Loppas.** Andria is a Chartered Geotechnical Engineer with over 12 years of experience in geotechnical engineering working on a variety of infrastructure (highway and railway), utility and onshore renewables projects with a proven ability of leading geotechnical packages and performing geotechnical design. At GDG Andria leads the Geohazards team and manages the geotechnical design of several onshore renewable projects from planning to construction stage.
- **Chris Engleman – Project Manager.** Chris is a Professional Geologist (PGeo, EuroGeol) with an MGeol from the University of Leeds. He is Chartered with the Institute of Geologists Ireland (IGI) and the European Federation of Geologists. Chris has six years of industry experience within the onshore renewables sector and the field of geological mapping, predominantly working on projects for peat stability and management (including PSRAs), ground investigation, rock and soil logging, GIS mapping and geotechnical design. Chris has experience in peat stability analysis, geological/geomorphological mapping (with a particular focus on Quaternary geology), site investigation, project management and GIS mapping. He has worked on several EIAR projects in Ireland and Scotland, including Peat Stability Risk Assessments, Peat Management Plans, and Soils and Geology Chapters. Chris is the primary author of this report and led the assessment of peat risk and management at the Proposed Wind Farm site. He supervised and carried out site walkovers and peat probing at the proposed wind farm site in 2024.
- **Patrick Kelly.** Patrick is an experienced Geologist with an Exploration Geology MSc from the Camborne School of Mines. He has 5 years of experience in engineering geology, exploration and mining, working across Ireland, UK and Australia. He has worked in underground, brownfield and greenfield sites in both mining and engineering settings, supervising engineering projects such as wind farm ground investigation, foundation design, flood relief ground investigation, ground stabilisation, and various ground monitoring works, and supervising surface and underground drilling programs. Patrick carried out trial pit logging at the Proposed Wind Farm site in 2025.
- **Sowmya Reddy Gudipati.** Sowmya is a Graduate Engineer at GDG. She has two years of postgraduate experience working in the environmental, civil engineering, and renewables sectors. Sowmya has worked on multiple onshore wind and solar farm projects in the UK and Ireland. Sowmya carried out peat probing at the Proposed Wind Farm site in 2024.

1.2 GUIDANCE DOCUMENTS

This PSMP has been prepared in accordance with industry best practices relating to wind farm construction and peatlands. These best practice guidelines include:

- Wind Energy Development Guidelines. Department of Housing, Planning and Local Government (2006);
- Draft Revised Wind Energy Development Guidelines. Department of Housing, Planning and Local Government (2019);

- Good practice during wind farm construction. A joint publication by Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland (2015);
- Scottish Government, Guidance on Developments on Peatland – Site Surveys (2017);
- Scottish Government, Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (2017);
- Guidance on the Assessment of Peat Volumes, Re-use of Excavated Peat and the Minimisation of Waste, Scottish Renewables and SEPA (2012); and,
- Floating Roads on Peat, Scottish Natural Heritage (2011).

Many of the publications listed above have been developed by Scottish regulators, which are considered best practice in Ireland and are therefore appropriate for reference within this PSMP.

This PSMP and compliance with it will not relieve the developer of its obligations to undertake confirmatory ground investigations or geotechnical design before construction or any obligations relating to other aspects of the environment.

1.3 PROPOSED PROJECT

The Proposed Project will comprise the construction of 9 no. wind turbines with an overall blade tip height of 180 metres and all associated works, and a 110kV substation and associated works, including underground 110kV cabling to connect to the national grid at Cloon 110kV substation. The full description of the Proposed Project is detailed in Chapter 4 of the EIAR.

The development description for the current planning application as it appears in the public notices is as follows:

The development will consist of the provision of the following:

- i. 9 no. wind turbines with the following parameters:
 - Total turbine tip height of 180 metres;
 - A rotor blade diameter of 150 to 162 metres;
 - A hub height of 99 to 105 metres;
- ii. Permanent turbine foundations, hard-standing and assembly areas;
- iii. Underground electrical (33kV) and communications cabling;
- iv. 1 no. temporary construction compound (including site offices and welfare facilities);
- v. A meteorological mast with a height of 100 metres, security fencing and associated foundation and hard-standing area;
- vi. 1 no. new site entrance on the R332 in the townland Lisavally;
- vii. 1 no. new access and egress point off the L6056 Local Road in the townland of Dangan Eighter;
- viii. 1 no. new access and egress point on to an existing access track in the townland of Dangan Eighter;
- ix. 2 no. new access and egress points off the L6301 Local Road in the townland of Cooloo and Lecarrow;

- x. *Upgrade of existing site tracks/roads and provision of new site access roads, clear span crossings, junctions and hard-standing areas;*
- xi. *A new temporary access road from N63 national road and to R332 Regional Road in the townland of Slievegorm to facilitate the delivery of turbine components and other abnormal sized loads;*
- xii. *Demolition of an existing derelict house and adjacent outbuilding in the townland of Cooloo;*
- xiii. *Peat and Spoil Management Areas;*
- xiv. *Tree felling and hedgerow removal;*
- xv. *Biodiversity Management and Enhancement measures;*
- xvi. *Site Drainage;*
- xvii. *Operational Stage site signage; and*
- xviii. *All ancillary apparatus and site development works above and below ground, including soft and hard landscaping.*

The applicant is seeking a ten-year planning permission. Current and future wind turbine generator (WTG) technology will ensure that the wind turbine model, chosen for the Proposed Project, will have an operational lifespan greater than the 35-year operational life that is being sought as part of the planning application.

1.4 SCOPE OF REPORT

This report contains the following:

- A summary of proposed construction activities at the Proposed Wind Farm;
- A review of peat and spoil conditions at the Proposed Wind Farm;
- Access track construction types;
- Methodologies for the construction of each type of access track construction details;
- Methodologies for the excavation of turbine bases, hardstands and compounds,
- Summary of Peat and Spoil Repository Areas and typical detail drawings;
- Guidelines for handling and storing excavated peat and spoil; and
- Recommendations for good construction practice.

This report does not include an assessment of the Proposed Grid Connection, as this passes through public road, and very little/no excavation of peat is anticipated. The Proposed Grid Connection is considered separately, in Technical Appendix 8-3.

1.5 SUMMARY OF CONSTRUCTION ACTIVITIES

For the construction phase, the activities that are considered likely to generate peat and spoil are as follows:

- 1) The construction of new excavated (i.e. founded) access tracks. We note that floating track construction does not require peat excavation.
- 2) The upgrade and widening of existing founded access tracks.

- 3) Excavations for cable trenches beneath new tracks.
- 4) Excavations for WTG bases, hardstands, temporary construction compound and substation.

1.6 GENERAL PRINCIPLES OF PEAT AND SPOIL MANAGEMENT

The general purpose of the PSMP is to outline the methodologies of peat excavation and reinstatement, outline the safety steps required for the safe placement and management of peat and spoil material, and minimise disruption to the peatland environment. The methods outlined in the report aim to:

- Ensure the stability of the peat is not compromised by the proposed development,
- Reduce the exposure of bare or excavated peat and spoil material,
- Reduce the potential for the release of sediment into watercourses or groundwater,
- Ensure that the proposed development does not adversely impact the landscape and environment,
- Ensure good site management practices are followed throughout the proposed development's construction, operation, and decommissioning phases.

All peat excavation, placement, and reinstatement, both temporary and permanent, will consider the risks and mitigations identified in the EIAR, and the Peat Stability Risk Assessment (PSRA), refer to Appendix 8-1.

Placement of any reinstatement of landscape material will be carried out in a fashion which ties in with the existing natural topography and facilitates the reduction of the visual impact on the structures of the Proposed Wind Farm. The reinstatement can be done by landscaping the topography with natural slopes, embedding the proposed infrastructure into the surrounding landscape, promoting natural vegetation growth and allowing for controlled drainage from all structures.

Civil and geotechnical design will be required for all structures, including the reuse of any excavated peat material for reinstatement, if proposed. All reinstatement works will be carried out considering the findings of the associated PSRA, in Appendix 8-1 of this EIAR (GDG, 2025). Works will be carried out under the supervision of an appropriately experienced Geotechnical Engineer and Ecological Clerk of Works (ECOW) or Environmental Manager.

2 PEAT CONDITIONS AND STABILITY

2.1 SITE CONDITIONS

A review of the published geological information, site observations, and the results of the ground investigation campaigns indicate that the ground conditions at the Proposed Wind Farm site consist of a generally flat to undulating topography, with prominent ridges of glacial material (Drumlins) separating large, flat-lying raised peat bogs, which have been subject to turbary peat harvesting. Trial pit locations (Appendix A.4) suggest that the peat is typically underlain by granular or cohesive

glacial material, with trial pits encountering soft to firm gravelly CLAY/SILT, sandy GRAVELS, and sandy SILT (marl-like silt) underlying the peat. In addition, Petersen Drilling Services Ltd. carried out two boreholes for the purpose of the hydrological assessment (Chapter 9 of the EIAR). These boreholes encountered a similar mix of cohesive and granular glacial tills, and all encountered limestone bedrock at 4.9m bgl and 2.6m bgl.

According to the available Geological Survey Ireland (GSI) mapping (Figure 2-1) and GDG's site observations, Turbines T1, T4 and T6-T8 are located on glacial material, while T2, T3, T5 and T9 are located in areas of open, cut-over raised bog. Portions of the T6 and T7 hardstands are also located on areas of cut-over raised peat.

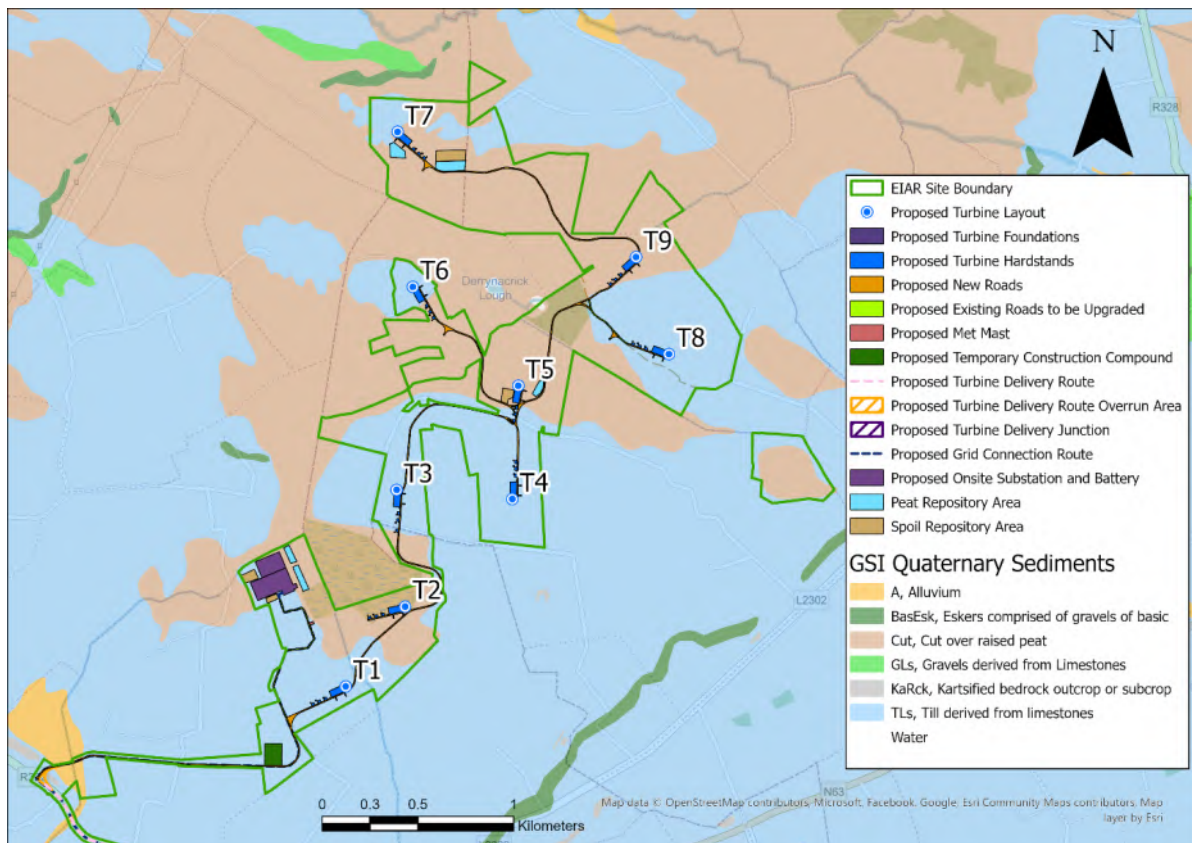


Figure 2-1: GSI Quaternary Sediments map for the Proposed Wind Farm site.

2.2 PEAT CLASSIFICATION

In respect of developments on peatlands, the Scottish Government (2017) provides guidance as to the definition of peat in their Peat Survey Guidance document '*The Joint Nature Conservation Committee (JNCC) Report 445, Towards an Assessment of the State of UK Peatlands*'. In this document, the following definitions are used:

- Peaty (or organo-mineral) soil: a soil with a surface organic layer less than 0.5m deep;
- Peat: a soil with a surface organic layer greater than 0.5m deep, which has an organic matter content of more than 60%;
- Deep peat: a peat soil with a surface organic layer greater than 1.0m deep.

For the purposes of this report, peat is considered with respect to the two principal types:

- **Acrotelm:** This upper layer comprises poorly decomposed plant material and living vegetation. It is relatively dry with some tensile strength affording it limited structural properties. For peat classification of peat in this report, the Acrotelm layer will be considered to be inclusive of ‘peaty soil’.
- **Catotelm:** This lower layer is formed by highly decomposed humified peat decaying at a rate of several orders of magnitude slower than the acrotelm. The slow peat formation as this catotelm layer grows represents an important sink for atmospheric CO₂. The structural integrity of this layer is particularly vulnerable to excavation and handling as it tends to disrupt completely on excavation. For classification of peat in this report the Catotelm layer will be considered to be inclusive of ‘peat’ and ‘deep peat’ soils.

2.3 GROUND INVESTIGATION SUMMARY

GDG conducted site reconnaissance and ground investigation as part of the assessment, comprising four site visits between 2022 and 2025 (August 2022, August 2024, November 2024 and February 2025) to record geomorphological features concerning the Proposed Project, peat depths, and peat strength. An indication of the site conditions (harvested peat, peat bogs, wetlands, and forestry) comprising flat to undulating topography is shown in Figure 2-2, Figure 2-3 and Figure 2-4.



Figure 2-2: View from T5 hardstand towards prominent drumlin/bedrock ridge, showing cut-over peat in foreground.



Figure 2-3: Peat and superficial deposit transition exposed in trench - east of Substation location



Figure 2-4: Raised peat adjacent to T05 hardstand

GDG and MKO conducted preliminary ground investigation (GI) and site reconnaissance in the form of peat probes (PP), hand shear vanes (HSV), boreholes (BH) and trial pits (TP) between 2021 and 2025. Six phases of GI were carried out on the site:

- 1) MKO (October 2021-July 2022): 60 no. peat probes
- 2) GDG (August 2022): 35no. peat probes and 12 no. trial pits
- 3) Petersen Drilling Services Ltd. (August 2022): 2 no. Rotary Core Boreholes (open hole well boreholes)

- 4) GDG (August 2024): 160 no. peat probes.
- 5) GDG (November 2024): 51 no. peat probes and 2 no. hand shear vanes.
- 6) GDG (February 2025): 15 no. trial pits with hand shear vanes, and associated geotechnical laboratory testing, including:
 - a) 25 no. Atterberg limits
 - b) 28 no. Moisture Contents
 - c) 26no. Particle size distribution

In summary, intrusive ground investigations were carried out at 340 locations. The findings of these GIs are summarised in the PSRA, (EIAR Technical Appendix 8-1). The GI locations considered the following criteria:

- Spatial distribution of the proposed infrastructure;
- Distance between probe points to avoid interpolation of peat depths across large distances;
- Changes in slope angle, as peat depths are likely to be shallower on steeper slopes;
- Changes in vegetation, which can reflect changes in peat condition;
- Changes in hydrological conditions; and
- Changes in land use.

No visible evidence of previous landslides was identified during the walkovers.

A raster map was created in GIS software presenting the interpolated peat depth across a site from the peat probe points using the Inverse Distance Weighted (IDW) method. This interpolated raster of peat depth is shown in Figure A-2 to A-4 in Appendix A.1. The trial pit logs can be seen in Appendix A.4.

2.4 ENCOUNTERED PEAT CONDITIONS

The peat thickness encountered by intrusive investigations across the site varies from 0m (in areas where peat is absent) to a maximum of 7.08m, with an average of 1.3 m recorded. Areas of the Proposed Wind Farm site containing little to no peat (under 0.25m peat depths), underlain by cohesive or granular glacial tills, include T01 and associated crane hardstand, T04 and associated crane hardstand, T6-T7 foundations, T8 and associated crane hardstand, the substation, the temporary construction compound and the southern and central site access tracks. Much of the remaining proposed infrastructure, including T2-T3 and associated crane hardstands, T6-T7 hardstands and T9 and associated crane hardstand, the BESS compound and the majority of the northern access tracks, are located in areas of cut-over peat, where turbary peat harvesting has removed significant quantities of peat.

The frequency of different peat thicknesses is shown in Figure 2-5. In total, 64% of recorded peat depths were under 1m, and 74% were under 2m.

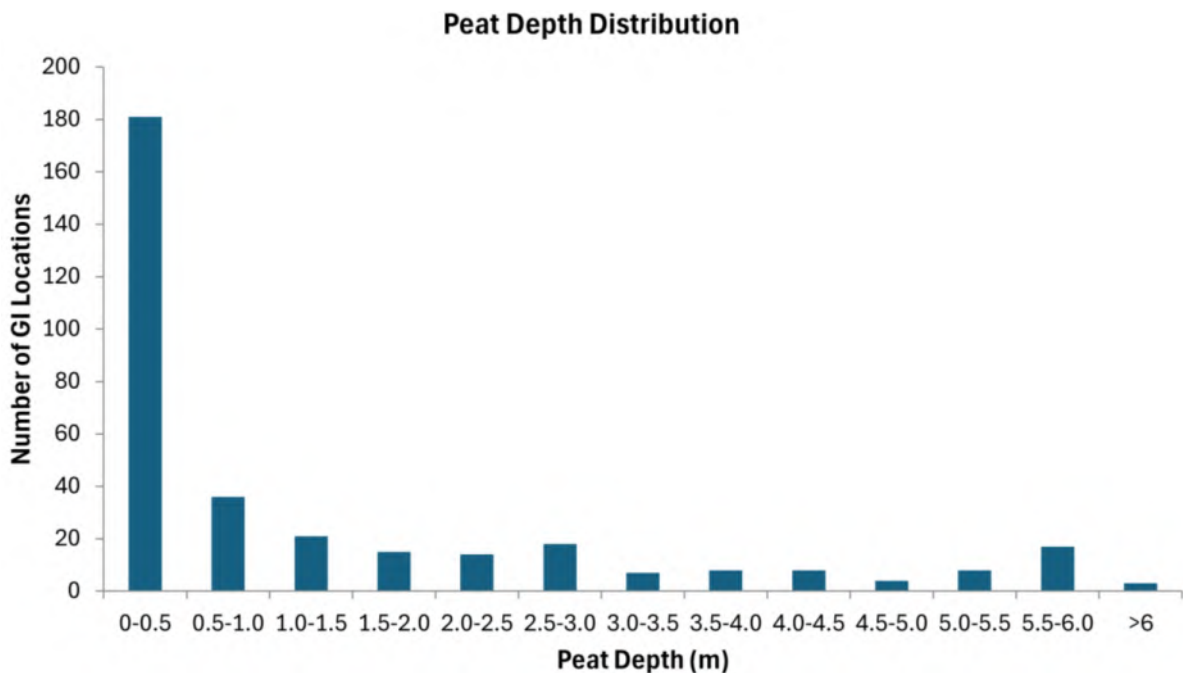


Figure 2-5: Histogram of peat depth results across the Proposed Wind Farm site. Bins include the upper bound (e.g., 0.5–1.0 includes values ≤ 1.0).

Laterally extensive regions of >3m in depth were encountered in raised bog settings, particularly to the north of T5 (approx. 30m), to the southeast of T7 (approx. 120m from the hardstand), to the west of T9 (approx. 200m) and to the north of T2 (approx. 100m). These areas of deep peat are restricted to discrete raised bogs, which all major infrastructure positioning has avoided, aside from the proposed floated track between T7 and T9, which passes across one area of raised bog, with recorded peat depths of up to 6.8m.

The walkover indicated that the peat was being cut in several areas and had drained significantly, with the observed peat classified as the catotelm at all infrastructure locations. The surface condition of the peat is varied, with some areas having bare peat at the surface where cutting is active, as shown in Figure 2-4, and some areas of un-cut peat capped by heather, with visible acrotelm. A large variation in the level of decomposition and humification was observed throughout the peat body, with trial pits recording Von Post (Hobbs, 1986) humification values between H1 (none) and H5 (moderate). However, this generally appeared to increase with depth. An example of peat humification conditions at TP07 (T9) is shown in Figure 2-6. Peat material identified at the Proposed Wind Farm site during the trial pitting (Appendix A.4) is logged as fibrous to amorphous. The fibrous portions are assumed to be acrotelmic and will be considered suitable for landscaping and reinstatement adjacent to proposed infrastructure locations. Amorphous peat is likely to be classed as catotelm, and will require placement in the designated PRAs. Trial pits were not carried out in areas of >3m peat thickness, so there are likely to be areas of acrotelmic and catotelmic peat which have not been logged. Hand shear vanes were carried out in peat at six locations across the site, with results ranging from 12kPa to 42kPa.



Figure 2-6: Moderately humified (H5) peat in TP07 (T9).

2.5 CLASSIFICATION OF NON-PEAT SPOIL

The limestone-derived glacial till comprises of granular or cohesive material, underlying the raised peat area, and the areas of the site which are not covered by raised peat (i.e. agricultural and forestry land). Trial pits completed on site encountered soft to very stiff gravelly CLAY/SILT, sandy GRAVELS, and soft sandy SILT (marl-like silt). Particle size distribution tests (PSD) completed in 2025 provide the glacial till grain size distribution. PSD results are shown in Appendix A.5.

Initial assessment of the glacial till material suggests that it may be utilised as bulk fill for the construction of safety berms and access track embankments; however, further ground investigation and laboratory testing (including further PSD, compaction, moisture content and density testing) will be required for classification of this material.

2.6 PEAT STABILITY RISK ASSESSMENT

A PSRA has been undertaken for the Proposed Wind Farm site (EIAR Technical Appendix 8-1). In the do-nothing scenario, i.e. no additional loading on the peat slopes, the Proposed Wind Farm site is

considered to be stable. Modelling has shown localised zones within the Proposed Wind Farm site that become less stable with a 10kPa surcharge, akin to a 1m peat thickness on top of existing ground.

Areas of restricted stockpiling and construction have been identified as part of the PSRA (EIAR Technical Appendix 8-1) and are presented in Figures A-5 to A-7 in Appendix A.2.

The restriction areas consist of:

- Safety buffer zones (SBZs) – areas which **will be restricted for construction**. No development or construction activities will be carried out in these areas, including plant movements, peat or overburden excavation or reinstatement or placement of peat or any overburden materials.
- Peat stockpile restriction (PSR) – areas are **not restricted for construction but shall not be used for stockpiling of peat/side casting or overburden materials**. The Proposed Wind Farm footprint may occur within these areas, but peat placement and reinstatement are not permitted within these buffers. Any material excavated from within the peat restriction areas must be removed immediately and safely reinstated with a designated area elsewhere.

As outlined in the PSRA (EIAR Technical Appendix 8-1), the development of the safety buffer areas is a semi-automated approach which combines the developed polygon areas of the Scottish Executive (2017) factor of safety (FoS) results, areas of risk identified during the site walkovers and potential risk areas identified from the examination of peat depths and site topography. Safety Buffer Areas are outlined in Appendix A.2. Areas included in the SBZs include an area of thick, raised peat to the north of T5. 32 SBZs have been identified, largely at the edge of peat cuttings, or along the banks of ditches/drains.

PSR areas are locations where the Proposed Wind Farm layout encounters an area where a stability risk has been encountered with the addition of a 1m surcharge only and is otherwise considered stable in its natural state. The risk at these locations can be examined by looking at the geometry of the local slope and the proposed construction methodology, and the hazards will be mitigated with restricted peat and spoil placement and limiting plant operations within the area. Infrastructure for the Proposed Wind Farm interacts with one PSR area, where the access track between T5 and T6 crosses a localised area of $1 < \text{FoS} < 1.3$ in the undrained scenario with surcharge. One PSR area has been identified.

The stockpile restriction areas are outlined in Figures A-5 to A-7 in Appendix A.2, and the single location where an infrastructure element interacts with a PSR is outlined in Table 2-1.

Table 2-1: Safety buffer zones at key locations.

Risk and mitigation	Undrained surcharged FoS analysis
A small section of track (AL5b) interacts with an area of FoS <1.3 in the undrained scenario with 10kPa surcharge. This calculated low FoS is assessed to arise from locally deep peat and high slope angles at the banks of a minor watercourse. It is determined that these do not present a global risk of peat failure, but that the ground must be levelled and stabilised locally prior to construction. The access track in this location must be founded, and any peat excavated and replaced to a suitable bearing stratum. The peat at the banks of the watercourse in this area will be reprofiled to a more stable slope angle (typically to a maximum 1V:3H).	

3 HANDLING AND PLACING EXCAVATED PEAT AND SPOIL

3.1 GENERAL CONSTRUCTION PRACTICE

Inappropriate management of excavated peat and spoil and uncontrolled loading of peat material are considered among the leading causes of peat instability and landslide event triggers during the wind farm construction process. Managing and controlling these activities is key to de-risking peat stability at the Proposed Wind Farm site.

The following outlines guidelines for the careful handling and management of peat at the Proposed Wind Farm site:

- Care will be taken during peat excavation to ensure it is segregated from other soil types; therefore, particular care will be taken to review recorded peat depths.
- Peat will be separated and stored by type, namely the acrotelmic and catotelmic layers, where acrotelm is encountered. Given the nature of the historic peat extraction at the site, it is anticipated that nearly all of the peat excavation will consist of catotelmic peat:

- Acrotelm (defined in Section 2.2) is generally required for landscaping and will be stripped and temporarily stockpiled for re-use as required. Acrotelm stripping will be undertaken before the main excavations,
- Where possible, the acrotelm will be placed with the vegetation part of the sod facing the right way up to encourage the growth of plants and vegetation,
- All catotelm peat (defined in Section 2.2) will be transported immediately on excavation to the designated PRAs,
- The careful handling and segregation of peat types will help to optimise the re-use of peat, aiding in the retention of structure and integrity of the excavated peat material,
- Uncontrolled placement of peat or loading of peat material must be avoided.
- Depending on what vegetation is found on site, more fibrous material may be placed at steeper angles, up to 10%. Unconsolidated peat, generally comprising of catotelmic material, is often not suitable for general dressing, and any unconsolidated peat excavated must only be used for reinstatement where such re-use poses no risk of polluting watercourses and evidence can be provided that the required water table at the chosen location can be maintained. Catotelmic peat will be placed in the designated PRAs.
- Construction sequence planning will minimise the time peat is stockpiled before re-use; however, some temporary peat placement may be required to manage spoil and separate spoil horizons before it can be placed in its reinstatement location. The principles on which the temporary placement of excavated peat will be based upon the placement and handling methodologies set out within this section. Temporary placement must be safe as it protects the structure and integrity of the excavated peat subject to prevailing local conditions. The peat will be reinstated during the Construction Phase at the earliest possible opportunity to avoid prolonged placement.
- Any temporary placement locations must be in suitably wet conditions or be irrigated to prevent the peat from desiccating, and precautions will be taken to ensure that turves are not allowed to dry out before reinstatement. The condition of turves will be monitored throughout the duration of placement. Irrigation of peat turves will be agreed upon in advance with the ECoW. Should wetting of turves be required to prevent desiccation, mitigation will be adopted to prevent runoff or discharge to any adjacent watercourses.
- Plant movements and haul distances related to earthworks activity and peat excavation will be kept to a minimum.
- Peat and Spoil Repository Areas will not be allowed to substantially erode or become dry.
- Peat and Spoil Repository Areas will be located at least 50m away from mapped watercourses, and 10m away from existing drains, to reduce the potential for sediment to be transferred into the wider hydrological system.
- If possible, excavation will be timed to avoid very wet weather.

- Peat and Spoil Repository Areas locations have been selected to limit re-handling as far as reasonably possible.
- Excavated peat and spoil will be placed and re-used as close to the immediate area as possible.
- The disruption of flow pathways will be minimised, and drainage will be designed to limit the risk of changing flow pathways and subsequently increasing peat slide risk.
- All construction requiring cut and fill earthworks requires a robust monitoring and inspection programme. The details of this inspection programme will depend on the purpose and methodologies of the works and the ground conditions.
- A method statement and risk assessment (RAMS), which considers the potential causes and mitigations of peat instabilities and landslides, is required and must be regularly communicated to all site staff. An observational approach by all site staff to the ground conditions and the risks should be promoted, and any changes in the ground or site conditions should be reported and the risk dynamically assessed.
- Regular briefing of all site staff (e.g. toolbox talks) to provide feedback on construction and ground performance and to promote reporting any observed change in ground conditions.
- If peat pipes are encountered in excavations, mitigation works (e.g. backfilling with free-draining fill) will be developed so that lateral groundwater movement is not impeded.
- The Contractor will consult the ECoW to agree on locations for material stockpiles and consider minimising impacting sensitive ecological receptors.
- All works will be supervised by a competent Geotechnical Engineer. The Contractor will consult the site Geotechnical Engineer and review and take into account the PSRA (Appendix 8-1; GDG, 2025) to avoid the risk of peat instability in peat excavations, peat stockpiling and all material stockpiling in areas underlain by peat. All mitigation measures outlined in the PSRA must be adhered to.
- Runoff from PRAs and SRAs will be directed through the site drainage system, including silt fences, settlement ponds and other drainage measures as appropriate. These details are outlined in the will be outlined in the Contractor's Construction and Environmental Management Plan.
- The following particular recommendations/best practice guidelines for the placement of peat with respect to specific aspects of the Proposed Wind Farm will be considered and taken into account during construction. Excavated peat will be managed and placed in the following locations only:
 - Placement/reinstatement of acrotelm alongside access tracks and other infrastructure (Section 3.2);
 - PRAs
- Excavated topsoil will be used for landscaping across the Proposed Wind Farm site.

- Excavated non-peat subsoils must be classified following additional ground investigation and laboratory testing at the design phase. Material classified as suitable for re-use will be used across the Proposed Wind Farm as instructed by the Designer at the design phase. Any material classified as unsuitable for re-use is to be placed in the designated Spoil Repository Areas, or used in the construction of safety berms.

3.2 ACCESS TRACKS, HARDSTANDS AND OTHER INFRASTRUCTURE

- Controlled quantities of peat and spoil will be placed adjacent to access tracks, hardstands and other infrastructure only where it can be placed in a stable formation, i.e. where the topography and ground conditions allow.
- Placed peat material will consist of the acrotelm (upper layer) only, and it will be landscaped and shaped to aid in reinstating the construction into the surrounding environment.
- Peat and spoil will only be cast to safe heights and slope angles, considering the topography and the ground conditions. This height will be no more than 1m, and the slopes will be not greater than 1 (V): 3 (H) unless a site-specific assessment during detailed design indicates a greater height and angle is acceptable.
- The effect of drainage or water runoff will be considered when placing landscaping rising adjacent to access tracks. Landscaping material will not interfere with drainage, risk blocking of drainage systems or runoff into drainage systems.

3.3 PEAT REPOSITORY AREAS

- Peat repository areas (PRAs) have been identified at locations where the topography (slope angle $<5^\circ$), peat depth, resulting stability assessment (FoS of >1.3 for 1m peat surcharge) and other environmental constraints (including 50m buffer from watercourses and 10m buffer from land drains) have allowed. These areas are designated for the permanent placement of up to 1m of peat material. Typical details of each PRA are included in Appendix B.
- A cell berm will be constructed similarly to the PRA details outlined in Appendix B. This cell berm will help to prevent the flow of saturated peat material. The stone cell berm will be constructed with a sufficiently coarse granular material or rock to enable the drainage of the placed peat material and prevent any instabilities within the repository area.
- The stone cell berm will require a geotextile separator. The stone cell berm will be constructed using low-ground pressure machinery working from bog mats where necessary. The founding stratum for each stone buttress will be inspected and approved by a competent Geotechnical Engineer.
- The height of the cell berm constructed will be greater than the height of the placed peat & spoil to prevent any surface peat runoff. Berms up to a maximum of 1.25m in height will be required, subject to detailed design.
- The cell berm is subject to the detail designer's specification; however, some peat excavation or installation of a shear key may be required to prevent instability of the stored material. The

shear key will comprise an excavation below the existing ground level, beneath the cell berm to provide resistance against lateral forces. Where repositories are located on peat, the shear key must extend below the base of the in-situ peat.

- Where possible, the placed peat surface will be shaped to allow efficient runoff of surface water from the PRAs.
- As illustrated in Appendix B, a perimeter collector drain will be installed around each repository area.
- Silt ponds will be required at the repository area's lower side/outfall location. All water passing through the perimeter collector drains will be directed through the site drainage system, including silt fences, settlement ponds and other drainage measures as appropriate. These details are outlined in Chapter 9 (Hydrology and Hydrogeology) and will be outlined in the Contractor's Construction and Environmental Management Plan. Silt fences and double silt-fences will be emplaced down-gradient of peat repository areas and will remain in place throughout the construction phase.
- Intermediate berms or buttresses of granular material may be installed within the PRA to aid in the placement and stability of the peat material. These berms will be shaped to align with the contours of the repository area.
- The Contractor shall make every reasonable effort to promote vegetation growth in the PRAs following the placement of peat and completion of construction stage activities. Upper acrotelm layers shall be placed on the surface the right way up to promote vegetation growth. This growth will aid in stabilising the placed peat material and help in preventing it from becoming saturated following heavy periods of rain. Four PRAs have been designated as Biodiversity Enhancement Areas (PRAs 1, 2, 3 and 4). The Contractor shall follow the methodologies outlined in the Biodiversity Enhancement and Management Plan (Appendix 6-4) to promote biodiversity enhancement in these locations.
- Regular inspections of peat repository areas will be made by a Geotechnical Engineer throughout the works.

3.4 SPOIL REPOSITORY AREAS

- Cohesive glacial tills considered unsuitable for reuse in the Proposed Project will require placement in separate spoil repository areas.
- The spoil repository areas have been identified in locations where the topography (slope angle $<5^\circ$), peat depth, resulting stability assessment (FoS of >1.3 for 1m surcharge) and other environmental constraints (including 50m buffer from all mapped watercourses, and 10m from existing drains) have allowed. These areas are designated for permanently placing up to 1m of non-peat spoil material.
- Side slopes of placed spoil material are to be no greater than 1(V):2(H).

- Placed spoil will be compacted to reduce air voids and potential infiltration pathways. This will reduce the potential for erosion and silt run-off.
- Vegetated topsoil at the SRA locations will be stripped prior to placement of spoil, and replaced upon placement of spoil to the recommended height.
- The Contractor shall make every reasonable effort to promote vegetation growth in the SRAs following the placement of spoil and completion of construction stage activities.
- Where possible, the surface of the placed spoil will be shaped to allow efficient surface water runoff from the spoil placement areas.
- Silt ponds will be required at the repository area's lower side/outfall location. All water passing through the perimeter collector drains will be directed through the site drainage system, including silt fences, settlement ponds and other drainage measures as appropriate. These details are outlined in Chapter 9 (Hydrology and Hydrogeology) and will be outlined in the Contractor's Construction and Environmental Management Plan. Silt fences and double silt-fences will be emplaced down-gradient of spoil repository areas and will remain in place throughout the construction phase.
- Intermediate berms or buttresses of granular material may be installed within the spoil repository areas to aid in the placement and stability of the spoil material. These berms will be shaped to align with the contours of the repository area.
- Regular inspections of spoil repository areas will be made by a Geotechnical Engineer throughout the works.

4 ACCESS TRACK CONSTRUCTION METHODOLOGY

Existing tracks will be upgraded, and new access tracks will be constructed at the Proposed Wind Farm. The following factors are considered in the preliminary proposals for track construction types:

- Constructability;
- Serviceability requirements for construction and WTG component delivery and maintenance vehicles;
- Peat depth;
- Horizontal longitudinal and cross-fall gradient of the tracks;
- Minimisation of excavation arisings; and
- The requirement to minimise disruption to peat hydrology.

The above key principles are used to determine the track type and will be finalised based on the prevailing ground conditions encountered during the confirmatory GI stages.

Floating tracks minimise the impact on the peat, particularly peat hydrology. As there is no excavation required, no peat arisings are generated. However, a founded access track is more suitable if the underlying peat is shallow (<1m) or due to topographic restrictions or stability concerns.

The preliminary access track construction details proposed for the development are summarised below in Table 4-1. The details of the access track construction types are included in Appendix C. The distribution of proposed access track construction types is shown in Figure A-8 to Figure A-10 in Appendix A.3.

Table 4-1: Access track construction types

Construction method	Appendix C Detail reference	Construction type
Construction of new tracks	01	Founded
	02	Floating
Upgrade of existing access tracks	03	Founded

The design criteria for the suitability of floated access tracks used for the Proposed Wind Farm align with the Scottish Executives Best Practice guidelines document. Some sections of the proposed access track are considered suitable for floated construction when the following criteria are met:

- Maximum slope in any direction is less than 5%,
- Peat depths are greater than 1m,
- The resulting drained and undrained slope stability assessment FoS results are greater than 1.3, without and with a 10kPa surcharge.

The main restricting criteria for floating tracks are the peat depth and slope angle, as many of the deep areas of peat are in short spans of access trackways, which can cause difficulties in creating adequate transition zones between founded and floated tracks.

Of the proposed new access tracks, 7.2km (78%) are expected to comprise founded construction, with the remaining 2.1km (22%) expected to comprise floated track proposed. A total of 1.25km of existing access track is proposed for upgrade.

General construction methodologies are presented in the following sections. These methodologies aim to minimise impacts on the stability of the peat and to ensure that excavated peat is managed safely and efficiently. These proposed methodologies will be informed by detailed design following further GI. The methodology is not intended to cover all aspects of construction, such as drainage and environmental considerations. Inspection and monitoring plans for each method will be implemented during construction to monitor peat stability.

4.1 CONSTRUCTION METHODOLOGY FOR NEW ACCESS TRACKS

4.1.1 NEW FOUNDED ACCESS TRACKS

The general methodology to construct new founded access tracks (refer to Detail 01 of the access track construction detail drawing in Appendix C) is presented below:

- Excavation of the new access track to competent strata (see Section 3 for guidance on correctly handling and storing the different peat layers). Maximum excavation side slopes will be 1(V):1.5(H).
- Drainage shall be installed to divert surface and groundwater from the construction areas.
- A layer of geogrid/geotextile separator may be required at the base of the excavation. To be confirmed at detailed design.
- Placement of granular fill-in layers following the detailed designer's specification from formation level to finished access track level. The finished access track level will generally be a minimum of 200mm above the existing ground level, except for cuttings.
- Access tracks are to be finished with a granular running surface across the full width of the access track.

4.1.2 NEW FLOATED ACCESS TRACKS

The general methodology to construct new floating access tracks (refer to Detail 02 of the access track construction detail drawing presented in Appendix C) is presented below.

- A geotextile-geogrid composite layer is placed directly onto the peat surface following the designer's specification.
- Placement of granular fill up to 800mm and reinforcing geogrids in layers following the designer's specification, with due regard to any settlement and deformation of peat anticipated at the access track.
- Cross-drains shall be installed within the access track to divert surface from upslope to downslope.
- Stone granular fill delivered to the floating access track construction area shall be end-tipped onto the constructed floating access track to avoid excessive impact loading on the peat due to concentrated end-tipping. Direct tipping of stone onto the peat shall not be carried out.
- Stone will be spread and placed from the constructed floating access track onto the peat surface using a bulldozer.
- Access tracks are to be finished with a granular running surface across the full width of the access track.

The presence of excavations can destabilise the access track. Where required, for example, for the installation of internal cabling offset from the footprint of the floated access track, temporary

excavations will be excavated in short lengths and backfilled as soon as practicable. These works will be designed and supervised by the Contractor's Geotechnical Engineer.

Spoil materials can be used for landscaping along the edge of access track sections to aid with the enhancement of the peatland areas and embed the access tracks into the surrounding environment where slope and ground conditions allow, limiting their environmental impact. Consideration must be given to the placement of excavated materials in areas of potential instability or additional mitigation requirements, as highlighted in the PSRA (EIAR Technical Appendix 8-1). Where permissible, excavated materials will be placed to a maximum height of 1m and stockpile widths of a minimum of 2 to 3m unless site-specific designs allow larger volumes to be placed. Large stockpiles of materials shall not be placed on or adjacent to floated access tracks to avoid bearing failure of the underlying peat.

Peat placement or landscaping will be carried out only in areas where it is topographically contained and does not create a propagated landslide risk – see PSRA (EIAR Technical Appendix 8-1).

For this development, particular buffer areas, including construction buffers, have been highlighted in the PSRA (EIAR Technical Appendix 8-1) and are presented in Appendix A.

4.2 CONSTRUCTION METHODOLOGY TO UPGRADE EXISTING ACCESS TRACKS

An indicative methodology to upgrade existing founded access tracks (i.e. see Detail 03 of the access track construction detail drawing presented in Appendix C) is presented below.

- Excavation on one or both sides of the existing access track to competent strata.
- Placement of granular fill up to 200mm above existing access track level and reinforcing geogrids in layers following the designer's specification, with due regard to any settlement and deformation of peat anticipated at the access track.
- Overlay of the existing access track with selected granular fill following the designer's specification.
- Where coarse granular fill has been used in the existing founded access track make-up, a layer of geogrid will be placed on top of the existing floated access track.
- Access tracks will be finished with a granular running surface across the full width of the access track.
- A layer of geogrid/geotextile separator may be required at the surface of the existing access track following the designer's specification.

Where there are cross slopes, any access track-widening works required will be carried out on the upslope side of the existing access track, where possible. Particular design details will be required at the detailed design stage at the transitions between floating and founded access tracks to reduce differential settlements between the two construction types.

5 EXCAVATION OF WTG BASES, HARDSTANDINGS, AND INFRASTRUCTURE FOUNDATIONS

An assessment of the ground conditions encountered in the ground investigations has determined that the ground surface conditions at the site vary between flat cut over/cutaway raised peat bog, and raised areas of glacial till/shallow bedrock, with undulating topography. The average peat thicknesses identified at the proposed turbine and hardstand areas are generally less than 1m. However, isolated pockets of peat depths exceeding 2m were observed at the T5 and T9 locations. Where peat is present, the material encountered beneath it is generally a layer of sandy gravelly clay or a silty sand and occasionally there are cobbles and boulders of limestone and sandstone. At T9, the peat is underlain by soft clays interpreted as likely lacustrine marl. Generally, for constructing any structure or platform foundation, such as a WTG base, hardstand or substation, removing all soft material is required to a depth where a suitable bearing material is encountered. The material excavated is required to be properly managed and will be re-used in other elements of the Proposed Wind Farm design if deemed suitable based on design criteria for the materials.

During WTG construction, peat and soft soils will be excavated to a competent stratum to make room for the concrete turbine foundation and a small working area surrounding the foundation footprint. Breaking and excavation of bedrock may be required if it is encountered at shallow depths to achieve the reduced foundation level and level surface required by design. It is anticipated that rock breaking will be required at T4, T1 and T3.

The design of the WTG foundations is subject to confirmatory ground investigation and analysis. Each WTG will require a spread foundation of reinforced concrete (RC) foundation comprising a base slab bearing onto rock or other competent substrata with a central upstand to support the tower. Piled foundations may be required if the depth to a suitable stratum is prohibitive.

For shallow foundations, peat and soft soils will be excavated to a competent stratum allowing for additional working area surrounding the foundation footprint. Turbine bases of 25m in diameter are proposed, with detailed foundation design dictated by the local ground conditions and the requirements of the turbine supplier. While gravity foundations are assumed at all turbine locations, an alternative of piled foundations is to be considered as a possible alternative in locations of increased depth to a suitable formation. Piled foundations will require the excavation of peat and soil to a sufficient depth to allow the installation of the piling platform beneath the concrete foundation.

Similarly, all WTG crane hardstands will be founded on a suitable bearing material requiring the excavation of all peat and soft soils, where present. The platform will be constructed in the excavated area using a suitable specified engineered stone fill. Following the placement of the platform, the excavated peat can be reused to batter the platform edges and landscape the platform back into the existing topography.

The mean peat depths collected from the ground investigations at each foundation and hardstanding location are used to calculate the estimated peat volumes. This is outlined further in Section 6.

6 PRELIMINARY PEAT AND SPOIL VOLUMES

The ground investigation and design layout drawings have been reviewed to inform this section of the PMSP. Peat volumes can be estimated based on the results of the intrusive investigations and the proposed design. Non-peat overburden (i.e. spoil) was identified in trial pit and borehole locations, namely cohesive glacial till material. Where this material has an insufficient bearing capacity, excavation has been recommended. It is expected that peat and spoil excavation will be required for the following elements of the proposed development:

- Founded access tracks;
- WTG foundations and hardstands;
- Substation Compound;
- Temporary Construction compound;
- Met mast; and
- BESS Facility.

A preliminary estimate of the approximate volumes of excavation and fill needed to construct the Proposed Wind Farm was carried out. This was produced using 3D access track and hardstand model, typical limits to access track and hardstand gradients, measured peat depths, available trial pit information and using access track and hardstanding thickness typical to the ground conditions of the Proposed Wind Farm. These volumes are best estimates and are based on the current Proposed Wind Farm site layout.

6.1 PEAT EXCAVATION VOLUMES

The peat depths determined in the GI were reviewed at the infrastructure elements of the Proposed Wind Farm, such as each turbine, crane hardstand, and access tracks. The calculated peat and spoil volumes include a 20% contingency factor to account for bulking and variations to ground conditions.

A breakdown of the estimated peat excavation volumes is summarised in Table 6-1.

Table 6-1: Summary of preliminary peat excavation volumes

Infrastructure Item	Excavated peat volume (m3)*
Floated Access Tracks - New	0

Infrastructure Item	Excavated peat volume (m3)*
Founded Access Tracks- Existing Tracks	0
Founded Access Tracks -New Tracks (Including widening)	15,490
WTG Foundations	2,480
WTG Hardstands	17,450
Met mast	0
Substation and BESS Compound	4,110
Temporary Construction Compound	0
Peat and Spoil Repository Areas	0
Total	39,530

* The volume of peat material excavated has been estimated using the average peat depth calculated across the footprint of the structure to define the basal surface of the peat.

6.2 SPOIL EXCAVATION VOLUMES

Table 6-2: Summary of preliminary spoil excavation volumes

Infrastructure Item	Excavated Topsoil Volume (m ³)	Excavated Glacial Till Volume (m3)	Excavated Soft Clay Volume (m3)	Total Excavated Spoil Volume (m ³)
Floated Access Tracks - New	0	0	0	0
Founded Access Tracks - Existing Tracks	0	0	0	0
Founded Access Tracks - New Tracks	6,290	500	4,590	11,380
WTG Foundations	530			14,270

Infrastructure Item	Excavated Topsoil Volume (m ³)	Excavated Glacial Till Volume (m ³)	Excavated Soft Clay Volume (m ³)	Total Excavated Spoil Volume (m ³)
		12,370	1,370	
WTG Hardstands	3,140	14,340	11,490	28,970
Met mast	110	180	0	290
Substation and BESS Compound	5,410	11,290	0	16,700
Temporary Construction Compound	3,690	0	0	3,690
Peat and Spoil Management Areas	0	0	0	0
Total	19,170	38,680	17,450	75,300

6.3 PEAT REINSTATEMENT VOLUMES

Peat generated during construction can be reused or reinstated across the Proposed Wind Farm site. Peat may be reused for landscaping on edges of constructed infrastructure (including access track verges and around hardstand areas) and shall be placed as soon as reasonably practical after construction. This shall act as part of the landscaping enhancement and tie in with the surrounding topography, reducing visual impacts and restoring the existing habitat.

Several considerations have been made in the estimation of reinstatement volumes:

- A conservative reinstatement volume of 2m³ per linear metre (lin.m) along the new founded access tracks (1m³ placed on each side) has been used.
- A conservative reinstatement volume of 1m³ per lin.m on existing access track widenings, accounting for placement of 1m³ on one side only of the proposed widening.
- A conservative reinstatement volume of 1m³ per lin.m on existing access track upgrades, accounting for placement of 0.5m³ on each side of the access tracks to be upgraded.
- An estimated reinstatement capacity of 3m³ per external lin.m perimeter of turbine foundations and hardstand areas such as the crane hardstands, met mast and temporary construction compound.
- Five PRAs have been identified for the permanent placement of peat to a height of max 1m.

Potential peat reuse/reinstatement volumes have been estimated and are also presented in Table 6-3.

Table 6-3: Summary of preliminary peat reinstatement volumes

Comment	Peat Reinstatement volume (m ³)	Comments
Founded Access Tracks - Existing Tracks	1,250	Placement of arisings 1m ³ /lin.m alongside upgraded access tracks, where topography allows.
Founded Access Tracks - New Tracks	13,690	Placement of arisings 2m ³ /lin.m alongside existing and new founded access tracks, where topography allows
WTG Foundations	720	Placement of arisings 3m ³ /lin.m of external foundation perimeter where topography allows.
WTG Hardstands	2,940	Placement of arisings 3m ³ /lin.m of external hardstand perimeter, where topography allows
Met Mast	170	Placement of arisings 3m ³ /lin.m of external met mast perimeter where topography allows.
Substation and BESS Compound	2,310	Placement of arisings 3m ³ /lin.m of external substation perimeter where topography allows.
Temporary Construction Compound	840	Placement of arisings 3m ³ /lin.m of external compound perimeter where topography allows.

PRA's	22,460	Max 1m peat placement within PRA's, with a reduction to account for granular cell berms.
Total	44,380	

6.4 SPOIL REINSTATEMENT VOLUMES

Non-peat spoil generated during construction can be reused or reinstated across the Proposed Wind Farm site.

Several considerations have been made in the estimation of reinstatement volumes:

- It is assumed that a proportion of excavated glacial till, estimated at 21,880 m³, can be re-used as bulk fill (Class 2). This is subject to further detailed GI and laboratory testing to confirm suitability for re-use. It is assumed that this material, provided it is found to be suitable, can be used for the construction and upgrading of embankments and berms associated with the construction of new access tracks. This material is considered suitable for reinstatement and general earthworks where stable fill is required.
- An estimate of 40% of the total glacial till volumes has been considered as available for reuse in the construction of safety berms across the Proposed Wind Farm site.
- It has been assumed that all excavated topsoil can be re-used for landscaping across the Proposed Wind Farm site.
- Soft clay and marl have been assumed to be unsuitable for reuse, and three Spoil Repository Areas (SRAs) have been identified for the permanent placement of this material.
- Surplus capacity in the SRAs can be used for the placement of glacial till that cannot be reinstated elsewhere.

Potential spoil reuse/reinstatement volumes have been estimated and are also presented in Table 6-4.

Table 6-4: Summary of preliminary spoil reinstatement volumes

Comment	Spoil Reinstatement volume (m ³)
40% Reinstatement of Total Volume for Use in Safety Berms	15,470
Spoil Available for Reuse as Bulk Fill (Class 2)	21,880
Topsoil Reused for Landscaping	19,670
Spoil Repository Areas	20,530

Comment	Spoil Reinstatement volume (m ³)
Total	77,550

6.5 PEAT AND SPOIL BALANCE

The volume balance of excavated and reinstated peat and spoil is outlined in Table 6-5. This table outlines the estimated volumes of peat and spoil excavation and the reinstatement volumes as outlined in Sections 6.1 and 6.3.

Table 6-5: Peat and spoil balance assessment

ITEM	SUPPLY	DEMAND	BALANCE
	Excavation Volume (m ³)	Reinstatement Capacity (m ³)	Surplus Capacity (m ³)
Peat Balance	39,530	44,380	4,850
Topsoil Balance	19,670	19,670	0
Glacial Till Balance	38,680	37,350	-1,300
Soft Clay Balance	17,450	20,530	3,080
TOTAL	119,370	142,500	23,130

The volumes stated in Table 6-3 and Table 6-4 reflect normal earthworks practice where volumes of cut and fill are evaluated on a 1m³ cut to 1 m³ filled basis. It is acknowledged that bulking can occur where placed soils occupy a greater volume due to a reduction in density. It is considered that bulking will be offset to a considerable degree by the compaction of soils during placement and subsequent settlement to achieve the volumes outlined.

The 1,300m³ of additional glacial till that cannot be reinstated elsewhere will be placed in the SRAs, as illustrated in Table 6-6. Priority in placing material in SRAs will be given to soft clay, with excess capacity only filled once all soft clay has been placed.

Table 6-6: Spoil Repository sequencing

Material	Volume to be Placed (m ³)	Spoil Repository Area Reinstatement Capacity (m ³)	Surplus Capacity (m ³)	Notes
Soft Clay	17,450	20,530	3,080	Must be placed in SRAs

Material	Volume to be Placed (m ³)	Spoil Repository Area Reinstatement Capacity (m ³)	Surplus Capacity (m ³)	Notes
Surplus Glacial Till	1,300	(from surplus)	1,780	Surplus SRA capacity to be used to place glacial till once soft clay has been placed.
TOTAL	18,750	20,530	1,780	

The preliminary earthwork volume summary indicates that the Proposed Wind Farm 's peat and spoil placement capacity, provided once the PRAs and SRAs are reinstated, exceeds the volume of peat excavated for the various infrastructures.

7 GUIDELINES FOR GOOD CONSTRUCTION PRACTICE

Inappropriate placement of excavated peat and overburden, as well as uncontrolled loading of peat material, is considered one of the main causes of peat instability and landslide event triggers during the Proposed Wind Farm construction process. It is required that the construction method statements for the project also consider, but are not limited to, the guidance documents listed in Section 1 and the recommendations and requirements outlined throughout this document.

The risk of instability at all infrastructure elements has been classified as negligible based on the assessment undertaken in the PSRA (EIAR Technical Appendix 8-1). Mitigation measures in relation to peat instability are discussed in further detail in Section 6 of the PSRA (EIAR Technical Appendix 8-1).

The general requirements for the management of peat and spoil materials and the mitigation of peat instability at the Proposed Development are:

- A Project Geotechnical Engineer shall be appointed to oversee peat excavation and management for the construction stage;
- Placement of peat material, including temporary and side casting, shall be carried out in the permitted areas only. No peat material shall be stored, placed, or used for landscaping in the designated Safety Buffer Areas or Peat Stockpile Restriction Areas;

- Excavated peat shall not be stored on-site and will be immediately moved to the designated PRAs. Acrotelm (upper) peat material will be used as landscaping material where topography allows and the designer has assessed the stability risk;
- Peat and spoil will only be placed in the proposed repository areas or reused for landscaping. The velocity of water flows within drainage systems will be controlled using check dams, and the uncontrolled release of water onto slopes can create a landslide risk and must be avoided;
- All earthworks shall be designed by a competent geotechnical designer, informed by a post-consent detailed GI campaign. This investigation will include intrusive methods, such as trial pitting and borehole drilling, with a specified suite of in-situ and geotechnical laboratory testing to further assess the engineering and geotechnical characteristics of the infrastructure locations;
- All construction requiring cut and fill earthworks requires a robust monitoring and inspection programme. The details of this inspection programme will depend on the purpose and methodologies of the works and the ground conditions.
- A risk assessment and method statement (RAMS), which considers the potential causes and mitigations of peat instabilities and landslides, is required and shall be regularly communicated to all site staff. An observational approach by all site staff to the ground conditions and the risks will be promoted, and any changes in the ground or site conditions will be reported and the risk dynamically assessed;
- Regular briefing of all site staff (e.g. toolbox talks) to provide feedback on construction and ground performance and to promote reporting any observed change in ground conditions.

8 GEOTECHNICAL RISK REGISTER

Table 8-1: Geotechnical Risk register.

Ref.	Risk	Cause	Mitigation
1	Excavation of larger quantities of peat than expected	Increase in peat depths encountered/increase in lateral extents of peat to what has been assumed	This report outlines the calculations carried out in the peat balance exercise. The report outlines the volumes of peat excavation required for the construction of the Proposed Wind Farm and the capacity for the development for peat placement or rehabilitation, concluding that the peat balance is satisfactory for the construction of the Proposed Wind Farm. The peat depths used are developed from the GI, including peat probes, trial pits and hand shear vanes. Peat material can vary largely locally and the risk of missing a local deep area of peat may exist. An increased density of GI was carried out in the areas of proposed infrastructure. However, some areas had limited or no access and so GI is limited. A conservative estimate of peat volumes has been taken into account. Access track

Ref.	Risk	Cause	Mitigation
			construction types have been considered based on a threshold of a minimum 1m peat depth for floated access tracks. If further GI changes the peat depth calculation in areas proposed for floated access track construction, or if this threshold is altered, then the peat excavation may change accordingly. Further GI will be required during the detailed design and construction stage to assess peat depths and strengths. This will be carried out by the detail designer and the Contractors' team. The design team will develop their own peat balance calculation to satisfy and de-risk the possibility of larger peat excavation volumes being encountered at these locations.
2	Inadequate repository space for excavated peat	Inadequate peat reinstatement volumes	The peat balance calculation has considered a conservative estimate of the peat reinstatement quantities. Following detailed design it is likely that the reinstatement volumes will be able to be increased, targeting topographically confined areas for increased volume of placement while still remaining in compliance with the requirements outlined in this Peat and Spoil Management Plan document and industry best practices. It is assumed that a suitable construction methodology and project timeline can be developed by the construction stage contractor and design team to manage peat excavations and placement areas effectively.
3	Peat slippage from placement of peat material	Overloading of in-situ peat by placement	The PSRA report (EIAR Technical Appendix 8-1) examines the stability of the peat in several conditions, including the inclusion of a 1m peat placement surcharge. GI has been carried out, providing peat thicknesses at 340 locations, and GDG is satisfied that the design at this stage is in line with the Scottish Guidelines for development on peatlands (Section 2). This report outlines the methodologies to safely carry out the construction of the Proposed Wind Farm, including the restriction for the placement of peat at some key infrastructure locations. The construction stage design and Contractor team will need to construct the Proposed Wind Farm using these mitigation measures. Further confirmatory GI will be

Ref.	Risk	Cause	Mitigation
			required across the full site including at the identified hazard areas during the detail and construction stage to assess peat depths and strengths. This will be carried out by the detailed designer and contractor's team. The design team shall develop their own testing criteria to satisfy and de-risk the possibility of instability and peat failure. The works will be undertaken by a competent contractor experienced in working in peat and soft ground conditions in upland areas and will have carried out the appropriate due diligence and assessment relating to peat stability and appropriate peat placement.

9 CONCLUSION

This PSMP has been prepared to outline a peat and spoil management strategy to ensure the workable and sustainable management of peat during the construction of the Proposed Wind Farm. This PSMP identifies that most of the excavated material will consist of peaty soil and acrotelmic peat, with some catotelmic peat also present. The catotelmic peat will be fully utilised within the PRAs and is not classified as waste.

The preliminary earthwork volume summary confirms that once the PRAs are reinstated, the available capacity for peat and spoil placement will exceed the volume excavated for infrastructure works.

For the peat balance assessment, peaty soil volumes have been included to account for the superficial material needed for enhancement and infrastructure dressing at the Proposed Development.

The peat balance analysis outlines a conservative estimate of the volumes of peat and spoil excavation and reinstatement during the construction of the Proposed Wind Farm, and as such, it is concluded that all of the peat material excavated can be reused safely on-site during construction. Should further refinement of the detailed infrastructure design be undertaken, the assessment completed herein will be revisited.

REFERENCES

Department of Housing, Planning and Local Government (December 2019) *Draft Revised Wind Energy Development Guidelines*. DHPLG, Dublin.

GDG (2025) Peat Stability Risk Assessment (Technical Appendix 8-1)

GDG (2025) Geotechnical Karst Risk Assessment (Technical Appendix 8-2)

GDG (2025) Grid Connection Ground Conditions Assessment (Technical Appendix 8-3)

Hobbs, N. B. (1986). Mire morphology and the properties and behaviour of some British and foreign peats. *Quarterly Journal of Engineering Geology*, 19(1), 7-80.

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McDonagh, E. (1996). Drain blocking by machines on Raised Bogs. Unpublished report for National Parks and Wildlife Service.

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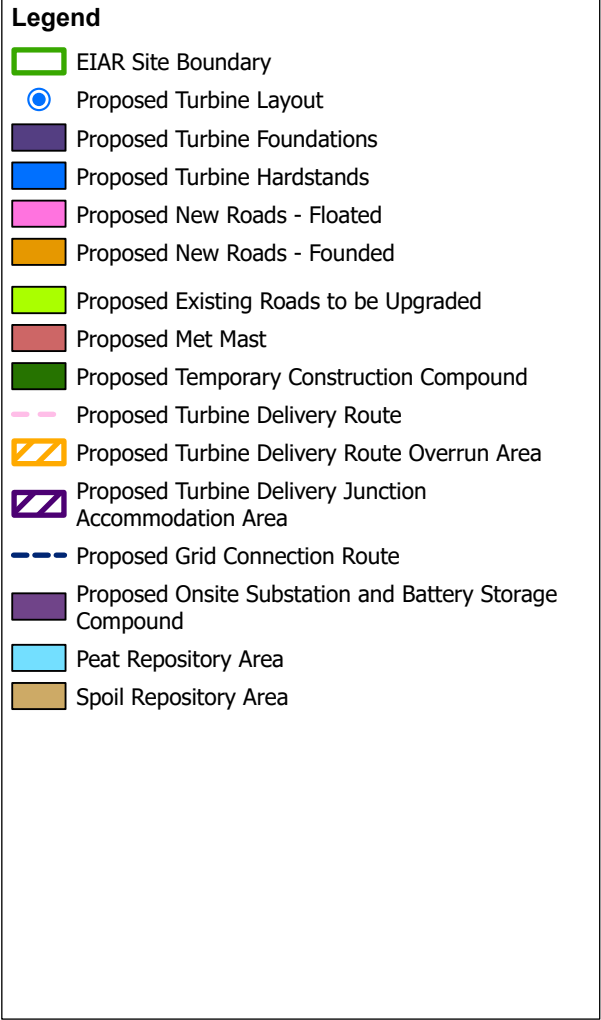
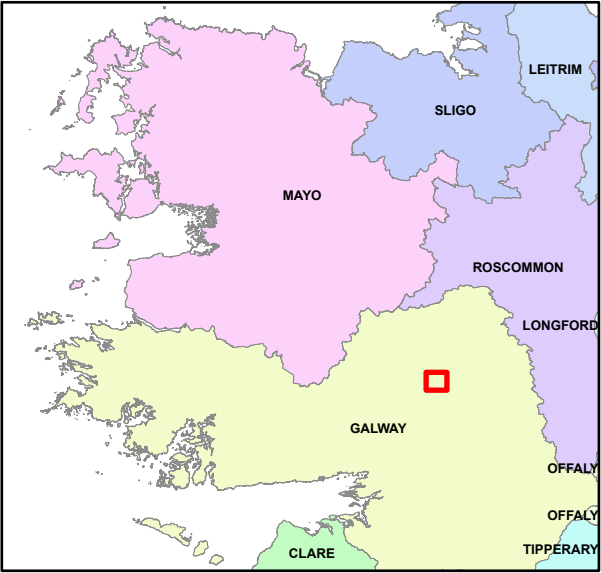
Scottish Natural Heritage (2011) *Floating Roads on Peat*

Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland (2015) *Good practice during wind farm construction*

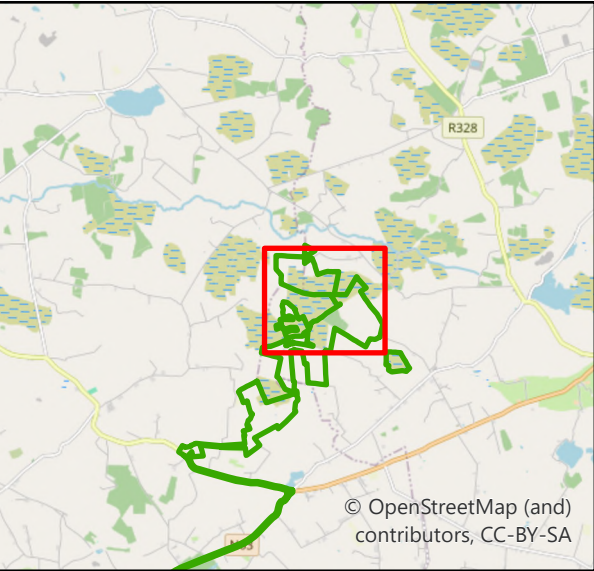
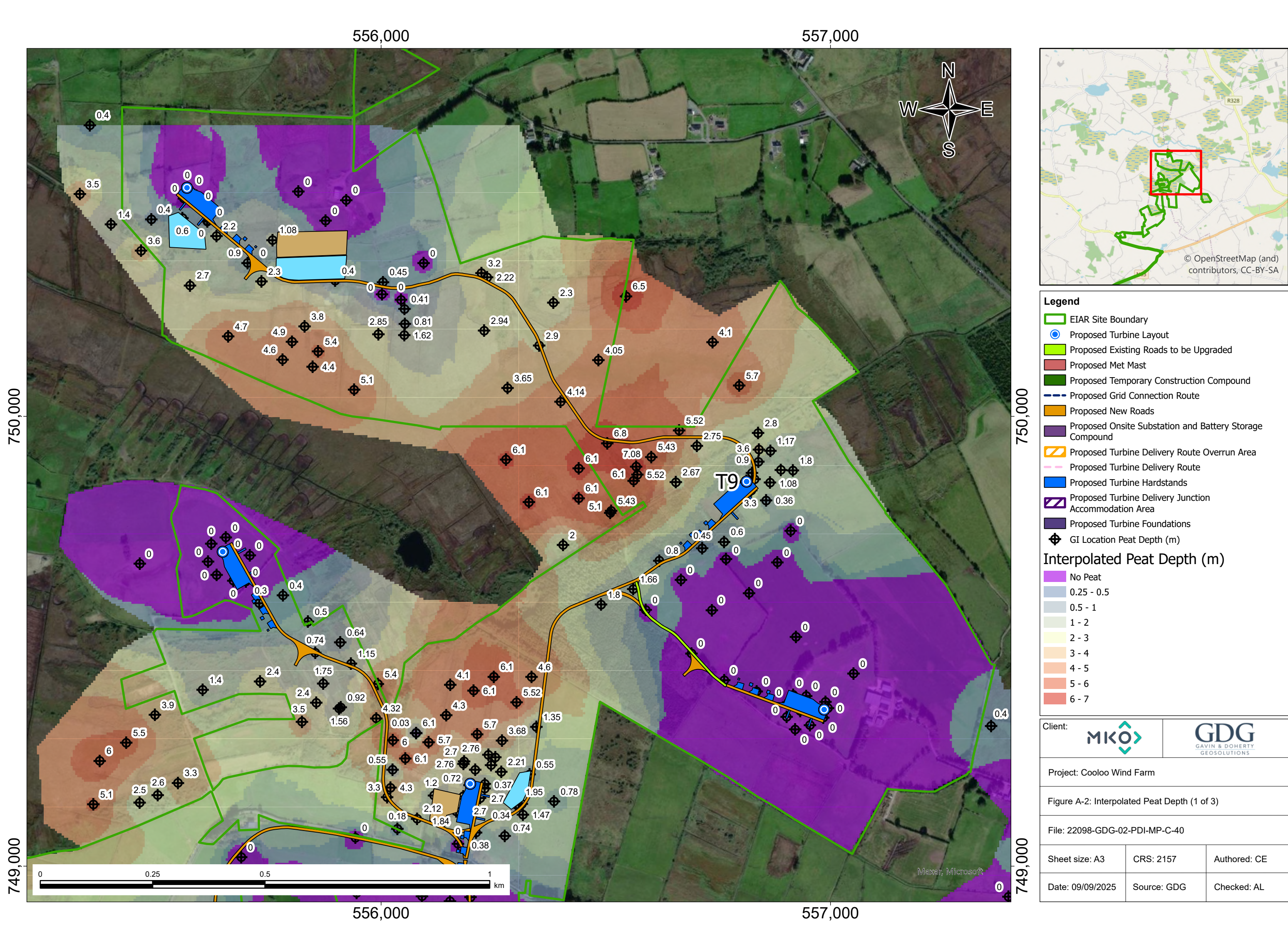
Scottish Renewables and SEPA (2012) Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste

APPENDIX A -SITE MAPS

A.1 SITE LAYOUT AND PEAT DEPTH PLANS



Client:		
 		
Project: Cooloo Wind Farm		
Figure A-1: Proposed Wind Farm Layout		
File: 22098-GDG-02-LAY-MP-C-01		
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Date: 08/09/2025	Source: GDG/MKO	Checked: AL



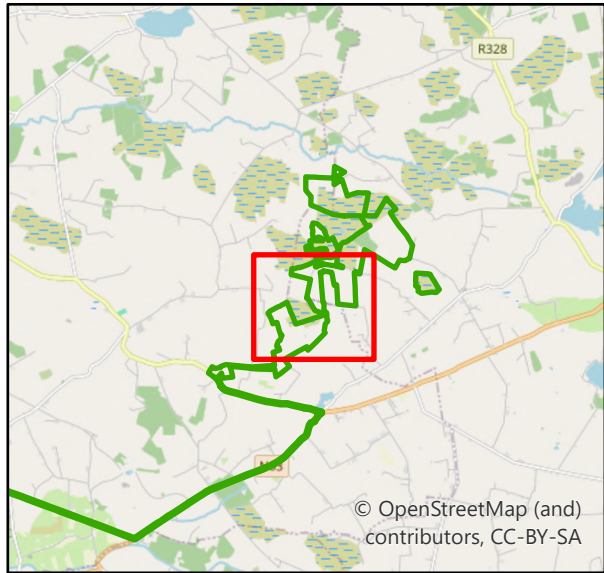
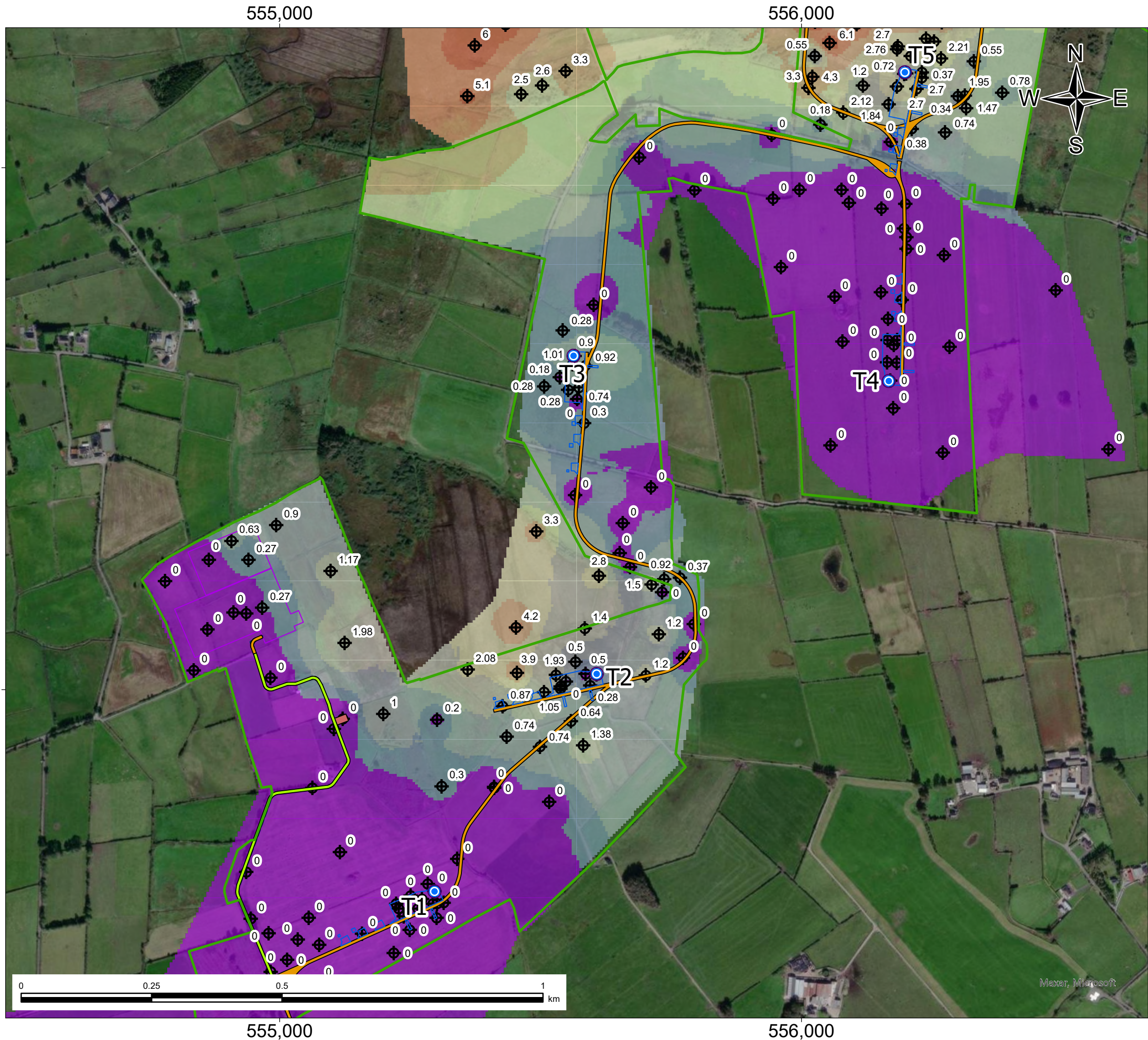
Legend

- EIAR Site Boundary
- Proposed Turbine Layout
- Proposed Existing Roads to be Upgraded
- Proposed Met Mast
- Proposed Temporary Construction Compound
- Proposed Grid Connection Route
- Proposed New Roads
- Proposed Onsite Substation and Battery Storage Compound
- Proposed Turbine Delivery Route Overrun Area
- Proposed Turbine Delivery Route
- Proposed Turbine Hardstands
- Proposed Turbine Delivery Junction Accommodation Area
- Proposed Turbine Foundations
- GI Location Peat Depth (m)

Interpolated Peat Depth (m)

- No Peat
- 0.25 - 0.5
- 0.5 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 7

Client:		
 		
Project: Cooloo Wind Farm		
Figure A-2: Interpolated Peat Depth (1 of 3)		
File: 22098-GDG-02-PDI-MP-C-40		
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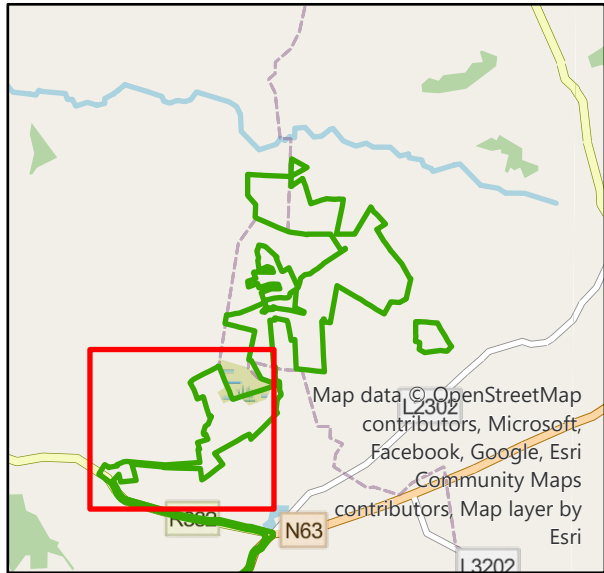
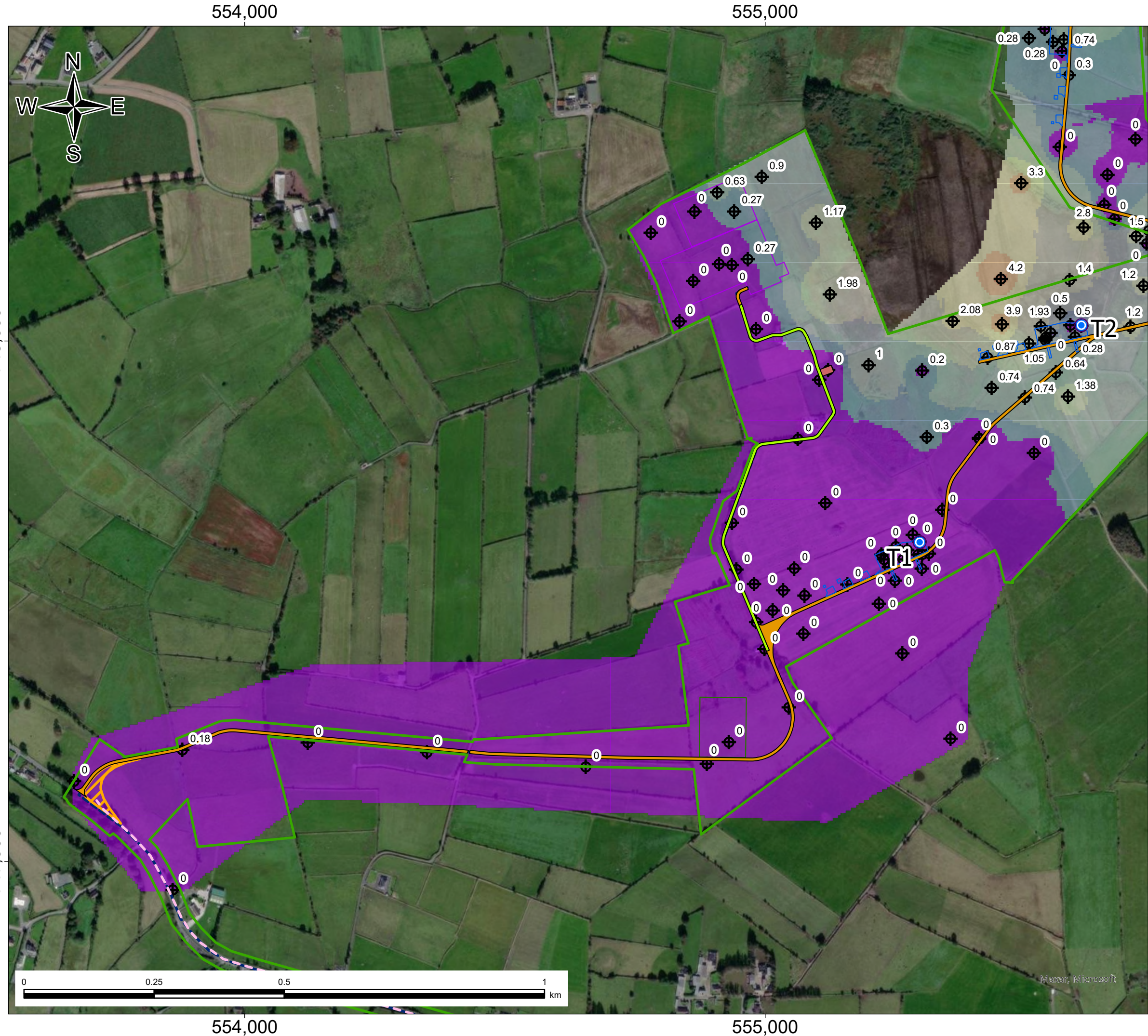
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- EIAR Site Boundary
- Proposed Turbine Layout
- Proposed Existing Roads to be Upgraded
- Proposed Met Mast
- Proposed Temporary Construction Compound
- Proposed Grid Connection Route
- Proposed New Roads
- Proposed Onsite Substation and Battery Storage Compound
- Proposed Turbine Delivery Route Overrun Area
- Proposed Turbine Delivery Route
- Proposed Turbine Hardstands
- Proposed Turbine Delivery Junction Accommodation Area
- Proposed Turbine Foundations
- GI Location Peat Depth (m)

Interpolated Peat Depth (m)

- No Peat
- 0.25 - 0.5
- 0.5 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 7

Client:		
MKO GDG GAVIN & DOHERTY GEOSOLUTIONS		
Project: Coolloo Wind Farm		
Figure A-3: Interpolated Peat Depth (2 of 3)		
File: 22098-GDG-02-PDI-MP-C-041		
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Date: 09/09/2025	Source: GDG	Checked: AL



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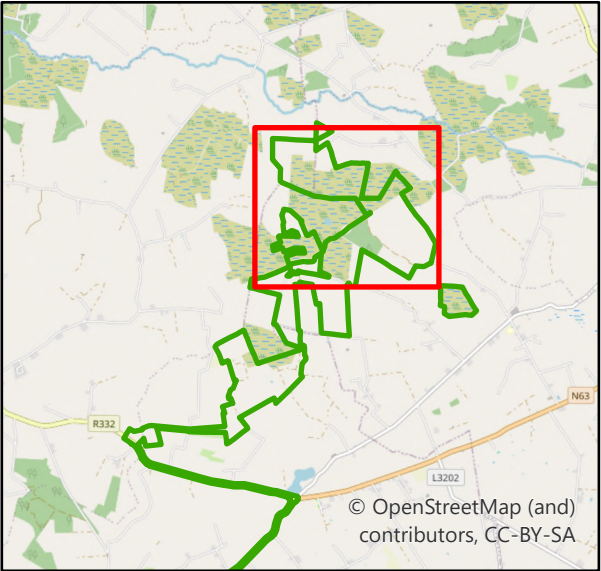
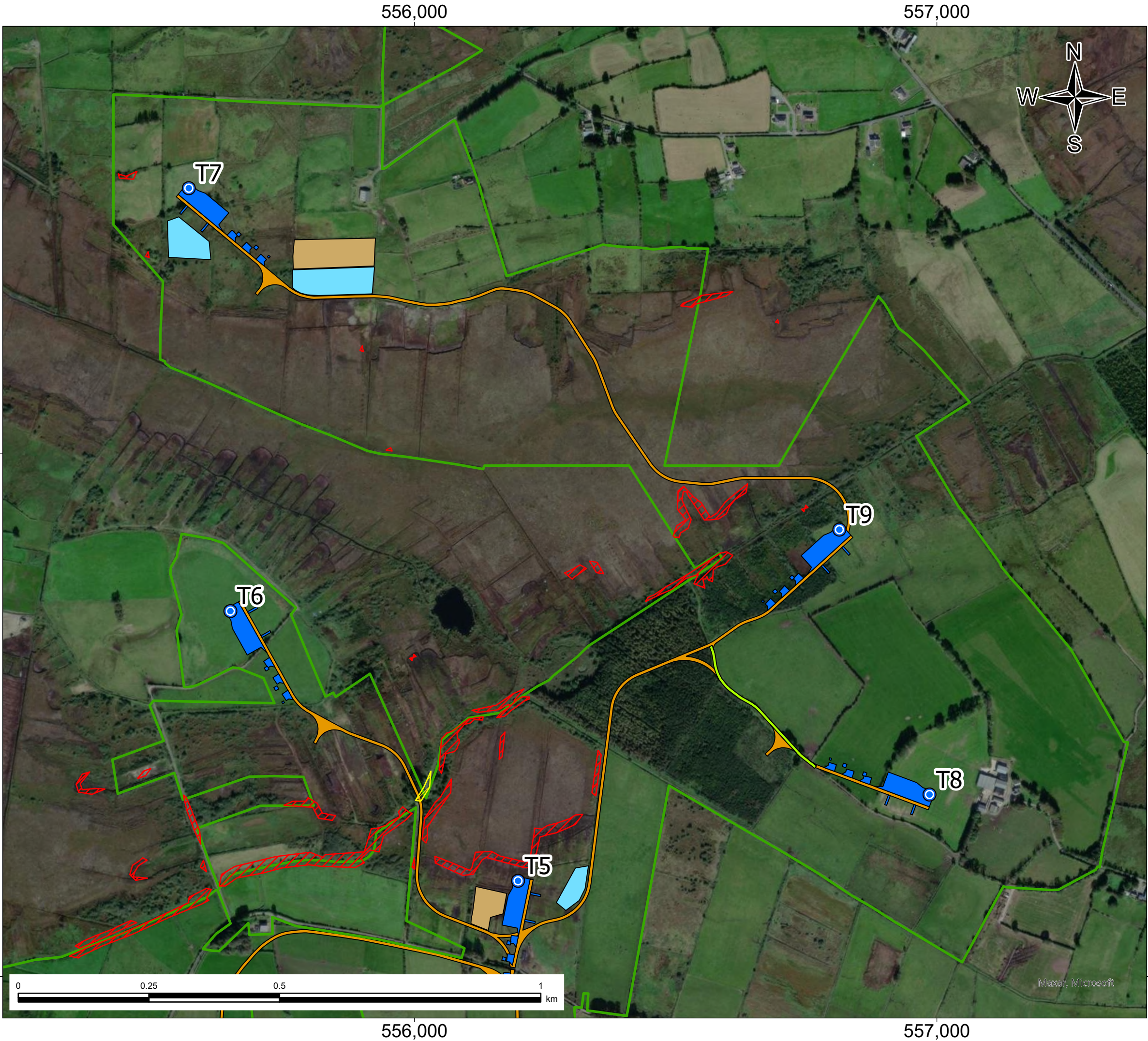
- EIAR Site Boundary
- Proposed Turbine Layout
- Proposed Turbine Foundations
- Proposed Turbine Hardstands
- Proposed New Roads
- Proposed Existing Roads to be Upgraded
- Proposed Met Mast
- Proposed Temporary Construction Compound
- Proposed Turbine Delivery Route
- Proposed Turbine Delivery Route Overrun Area
- Proposed Turbine Delivery Junction Accommodation Area
- Proposed Grid Connection Route
- Proposed Onsite Substation and Battery Storage Compound
- GI Location Peat Depth (m)

Interpolated Peat Depth (m)

- No Peat
- 0.25 - 0.5
- 0.5 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 7

Client:		
Project: Cooloo Wind Farm		
Figure A-4 Interpolated Peat Depth (3 of 3)		
File: 22098-GDG-02-PDI-MP-C-43		
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Date: 09/09/2025	Source: GDG	Checked: AL

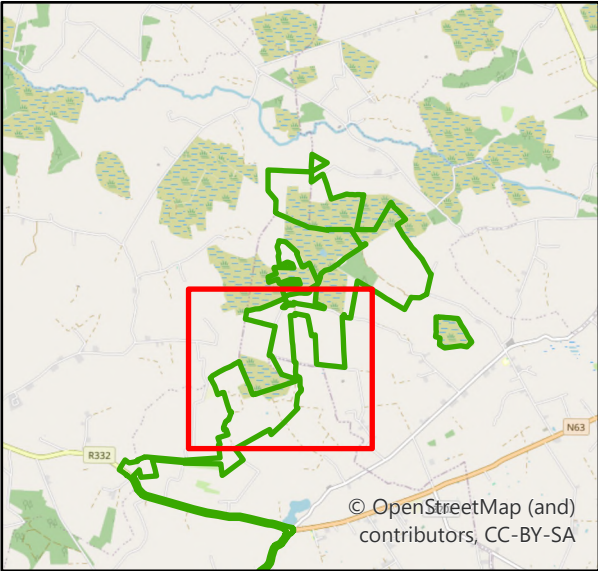
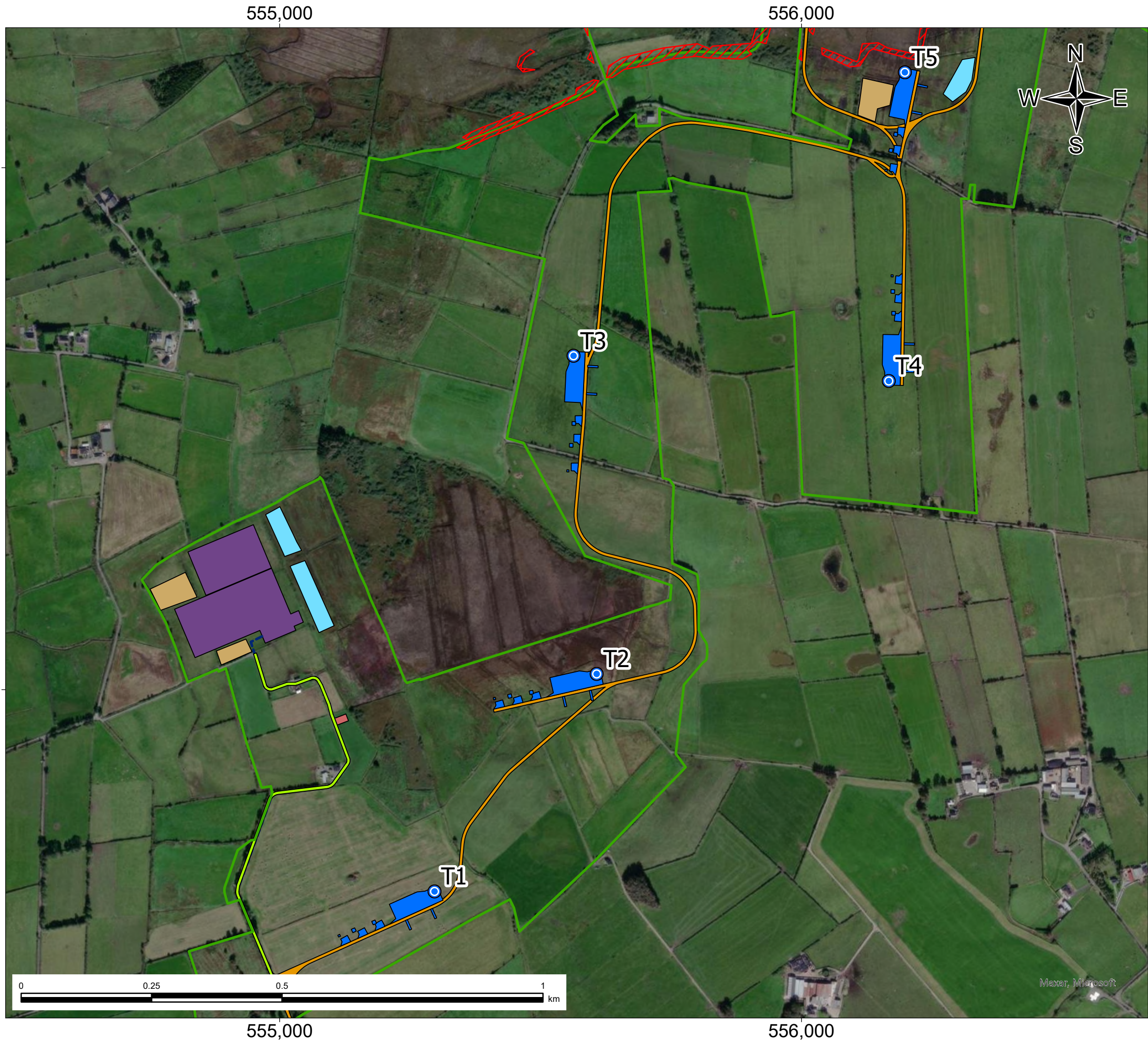
A.2 SAFETY BUFFER AND PEAT STOCKPILE RESTRICTION MAP



Legend

- Peat Stockpile Restriction Areas
- Safety Buffer Zones
- EIAR Site Boundary
- Proposed Turbine Layout
- Proposed Turbine Foundations
- Proposed Turbine Hardstands
- Proposed New Roads
- Proposed Existing Roads to be Upgraded
- Proposed Met Mast
- Proposed Temporary Construction Compound
- Proposed Turbine Delivery Route
- Proposed Turbine Delivery Route Overrun Area
- Proposed Turbine Delivery Junction Accommodation Area
- Proposed Grid Connection Route
- Proposed Onsite Substation and Battery Storage Compound
- Peat Repository Area
- Spoil Repository Area

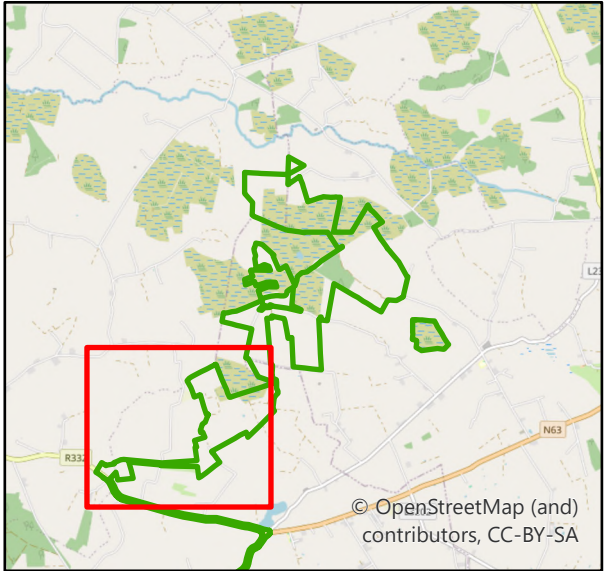
Client:		
 		
Project: Cooloo Wind Farm		
Figure A-5: Safety Buffer Zones and Peat Stockpile Restriction Areas (1 of 3)		
File: 22098-GDG-02-SBZ-MP-C-20		
Sheet size: A3	CRS: 2157	Authored: CE
Date: 12/09/2025	Source: GDG	Checked: AL



Legend

- Peat Stockpile Restriction Areas
- Safety Buffer Zones
- EIAR Site Boundary
- Proposed Turbine Layout
- Proposed Turbine Foundations
- Proposed Turbine Hardstands
- Proposed New Roads
- Proposed Existing Roads to be Upgraded
- Proposed Met Mast
- Proposed Temporary Construction Compound
- Proposed Turbine Delivery Route
- Proposed Turbine Delivery Route Overrun Area
- Proposed Turbine Delivery Junction Accommodation Area
- Proposed Grid Connection Route
- Proposed Onsite Substation and Battery Storage Compound
- Peat Repository Area
- Spoil Repository Area

Client:		
 		
Project: Cooloo Wind Farm		
Figure A-6: Safety Buffer Zones and Peat Stockpile Restriction Areas (2 of 3)		
File: 22098-GDG-02-SBZ-MP-C-21		
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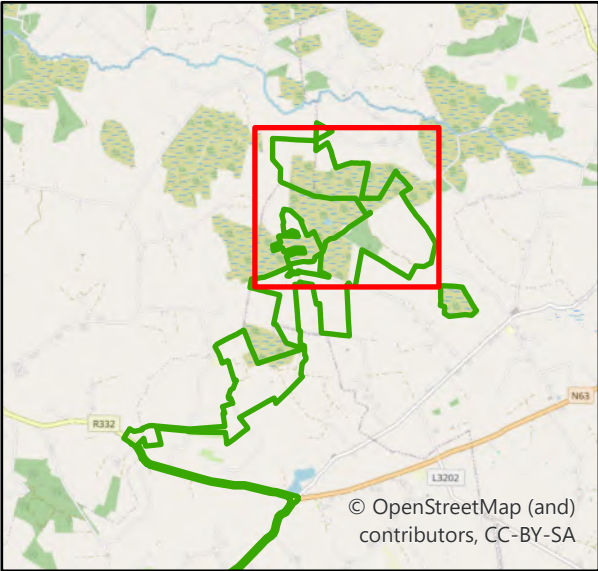


Legend

- EIAR Site Boundary
- Proposed Turbine Layout
- Proposed Turbine Foundations
- Proposed Turbine Hardstands
- Proposed New Roads
- Proposed Existing Roads to be Upgraded
- Proposed Met Mast
- Proposed Temporary Construction Compound
- Proposed Turbine Delivery Route
- Proposed Turbine Delivery Route Overrun Area
- Proposed Turbine Delivery Junction Accommodation Area
- Proposed Grid Connection Route
- Proposed Onsite Substation and Battery Storage Compound
- Peat Repository Area
- Spoil Repository Area

Client:		
 		
Project: Cooloo Wind Farm		
Figure A-7: Safety Buffer Zones and Peat Stockpile Restriction Areas (3 of 3)		
File: 22098-GDG-02-SBZ-MP-C-22		
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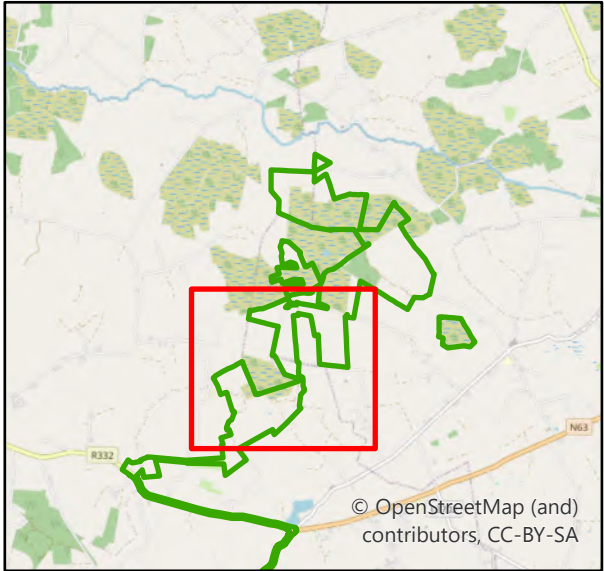
A.3 ACCESS TRACK CONSTRUCTION TYPES



Legend

- EIAR Site Boundary
- Proposed Turbine Layout
- Proposed Turbine Foundations
- Proposed Turbine Hardstands
- Proposed New Roads - Floated
- Proposed New Roads - Founded
- Proposed Existing Roads to be Upgraded
- Proposed Met Mast
- Proposed Temporary Construction Compound
- Proposed Turbine Delivery Route
- Proposed Turbine Delivery Route Overrun Area
- Proposed Turbine Delivery Junction Accommodation Area
- Proposed Grid Connection Route
- Proposed Onsite Substation and Battery Storage Compound
- Peat Repository Area
- Spoil Repository Area

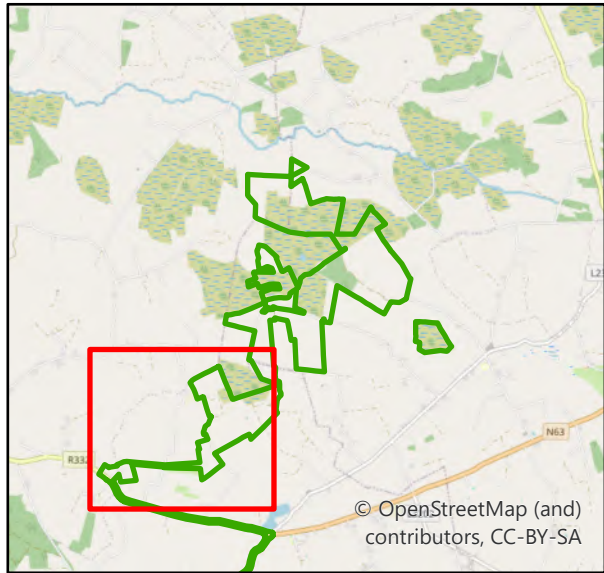
Client:		
MKO GDG GAVIN & DOHERTY GEOSOLUTIONS		
Project: Cooloo Wind Farm		
Figure A-8: Proposed Access Track Construction Types (1 of 3)		
File: 22098-GDG-02-ACT-MP-C-23		
Sheet size: A3	CRS: 2157	Authored: CE
Date: 12/09/2025	Source: GDG	Checked: AL



Legend

- EIAR Site Boundary
- Proposed Turbine Layout
- Proposed Turbine Foundations
- Proposed Turbine Hardstands
- Proposed New Roads - Floated
- Proposed New Roads - Founded
- Proposed Existing Roads to be Upgraded
- Proposed Met Mast
- Proposed Temporary Construction Compound
- Proposed Turbine Delivery Route
- Proposed Turbine Delivery Route Overrun Area
- Proposed Turbine Delivery Junction Accommodation Area
- Proposed Grid Connection Route
- Proposed Onsite Substation and Battery Storage Compound
- Peat Repository Area
- Spoil Repository Area

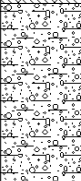
Client:		
 		
Project: Cooloo Wind Farm		
Figure A-9: Proposed Access Track Construction Types (2 of 3)		
File: 22098-GDG-02-ACT-MP-C-24		
Sheet size: A3	CRS: 2157	Authored: CE
Date: 12/09/2025	Source: GDG	Checked: AL



Legend	
	EIA Site Boundary
	Proposed Turbine Layout
	Proposed Turbine Foundations
	Proposed Turbine Hardstands
	Proposed New Roads - Floated
	Proposed New Roads - Founded
	Proposed Existing Roads to be Upgraded
	Proposed Met Mast
	Proposed Temporary Construction Compound
	Proposed Turbine Delivery Route
	Proposed Turbine Delivery Route Overrun Area
	Proposed Turbine Delivery Junction Accommodation Area
	Proposed Grid Connection Route
	Proposed Onsite Substation and Battery Storage Compound
	Peat Repository Area
	Spoil Repository Area

Client:		
 		
Project: Cooloo Wind Farm		
Figure A-10: Proposed Access Track Construction Types (3 of 3)		
File: 22098-GDG-02-ACT-MP-C-25		
Sheet size: A3	CRS: 2157	Authored: CE
Date: 12/09/2025	Source: GDG	Checked: AL

A.4 TRIAL PIT LOGS

GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP01 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 556177.00 - 748660.00 Level: m OD		Date 18/02/2025	
Location: Cooloo, Co. Galway Ireland						Dimensions (m): 2.50 Depth 2.80		Scale 1:25 Logged PK	
Client: MKO									
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
				0.30			TOPSOIL comprise of soft brown sandy clay with grass rootlets		
	0.80	B	HSV 62kPa	0.90			Soft to firm mottled light brown slightly sandy gravelly cobbly SILT. Cobbles are sub-rounded of limestone.		
	1.00						Firm grey brown sandy gravelly cobbly CLAY with boulders 200-300mm in diameter. Cobbles and boulders are sub- rounded of limestone.		
	2.00	B							
				2.75			Dark grey massive LIMESTONE		
				2.80			End of Pit at 2.8m		
							5		
Remarks: Terminated due to Bedrock. No groundwater encountered									
Stability: Good									

GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP02 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555570.00 - 748556.00		Date 19/02/2025	
Location: Cooloo, Co. Galway Ireland				Dimensions (m):		2.50		Scale 1:25	
Client: MKO				Depth 2.60		2.00		Logged PK	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
▼	0.50	B	HSV 54kPa	0.25			TOPSOIL comprise of soft brown sandy slightly gravelly clay with grass rootlets		
	0.80					Soft to firm brown grey slightly gravelly sandy cobbly CLAY. Cobbles are sub-rounded of limestone			
	1.10					Soft to firm brown grey slightly sandy gravelly cobbly SILT with occasional boulders. Cobbles and boulders are sub-rounded of limestone.			
	2.00	B	2.50			Grey massive LIMESTONE			
	2.60		2.60	End of Pit at 2.6m					
Remarks: Terminated due to possible bedrock. Moderate ingress groundwater									
Stability: Poor - Collapse from 1m									

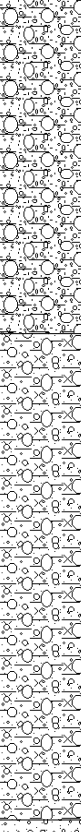
GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP03 Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555538.00 - 748001.00 Level: m OD		Date 20/02/2025		
Location: Cooloo, Co. Galway Ireland				Dimensions (m): 2.50		Scale 1:25		Logged PK		
Client: MKO				Depth 2.10		2.00				
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description			
	Depth	Type	Results							
▼	0.50	B	HSV 20kPa	0.10			TOPSOIL comprised of clay, grass and reeds			
							Firm dark brown oxidising to black very woody course fibrous wet PEAT. H1 B2 R3 W3 N5 A1			
	1.00				1.00			Soft grey silty, sandy GRAVEL with abundant boulders and cobbles. Cobbles and boulders are sub-rounded of limestone.		
	1.50	B			2.00			Grey massive LIMESTONE		
					2.10			End of Pit at 2.1m		
							1			
							2			
							3			
							4			
							5			
Remarks: Terminated due to possible bedrock. Slow ingress of groundwater								AGS		
Stability: Moderate										

GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP04 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555302.00 - 747590.00 Level: m OD		Date 20/02/2025	
Location: Cooloo, Co. Galway Ireland						Dimensions (m): 2.50 2.00		Scale 1:25	
Client: MKO						Depth 1.00		Logged PK	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
				0.20			TOPSOIL comprised of soft brown sandy clay with grass rootlets		
	0.40	B	HSV 40kPa	0.60			Soft to firm grey white slightly sandy, gravelly CLAY. Sand is fine to coarse.		
	0.60			0.75			Firm brown gravelly CLAY. Gravel is sub-rounded and comprise of limestone.		
	0.90	B		0.95			Soft grey brown slightly sandy gravelly SILT with occasional cobbles. Gravel and cobbles are sub rounded of limestone.		
				1.00			Weathered grey LIMESTONE. Heavily fractured limestone.		
							End of Pit at 1.0m		
							1		
							2		
							3		
							4		
							5		
Remarks: Terminated due to possible bedrock. No groundwater encountered									
Stability: Good									

GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP05 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 554936.00 - 748146.00 Level: m OD		Date 19/02/2025	
Location: Cooloo, Co. Galway Ireland						Dimensions (m): 2.00 2.50		Scale 1:25	
Client: MKO						Depth 0.90		Logged PK	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
				0.20			TOPSOIL comprised of soft brown sandy clay with grass rootlets		
	0.50	B	HSV 52kPa	0.60			Firm brown slightly gravelly , sandy SILT. Gravel is sub-rounded of limestone		
	0.50			0.80			Loose grey sandy GRAVEL. Gravel is sub rounded to sub angular of limestone		
	0.70	B		0.90			Grey massive weather LIMESTONE. Minor oxidation of fracture faces		
							End of Pit at 0.9m		
								1	
								2	
								3	
								4	
								5	
Remarks: Terminated due to possible bedrock. No groundwater encountered									
Stability: Good									

GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log			TrialPit No TP06 Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 556183.00 - 749155.00 Level: m OD		Date 18/02/2025	
Location: Cooloo, Co. Galway Ireland				Dimensions (m): 2.50		Scale 1:25		Logged PK	
Client: MKO				Depth 3.60		2.00			
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
	1.00	B	HSV 20kPa	1.00			Firm to spongy dark brown/black very fibrous PEAT. Weak organic odour. H2 B2 F2 R2 W1 N5 A1		
	1.10					Plastic light brown pseudo-fibrous Peat. H5 B2 F2 R2 W1 N5 A1			
	3.10	B		2.90			Very soft grey white sandy SILT. Possibly Marl.		
				3.60			Grey massive LIMESTONE		
				3.61			End of Pit at 3.6m		
								4	
								5	
Remarks: Terminated due to possible bedrock. Rapid ingress of groundwater								AGS	
Stability: Good									

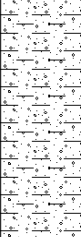
 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP07 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 556824.00 - 749835.00 Level: m OD		Date 19/02/2025	
Location: Cooloo, Co. Galway Ireland						Dimensions (m): 2.50 2.00		Scale 1:25	
Client: MKO						Depth 3.55		Logged PK	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
▼				0.20			TOPSOIL comprised of soft brown sandy clay with grass rootlets		
	1.00		HSV 42kPa	1.00			Sponge /plastic dark brown pseudo-fibrous PEAT . H5 B2 F2 R2 W1 N5 A1		
	1.50	B					Plastic brown pseudo-fibrous PEAT. H5 B2 F2 R2 W1 N5 A1		
	3.30						Very soft greyish white slightly sandy CLAY (Marl). Sand is fine to medium.		
	3.50	B		3.55			End of Pit at 3.6m		
Remarks: Terminated due to very rapid water ingress. Rapid ingress of groundwater								 AGS	
Stability: Good									

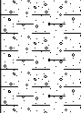
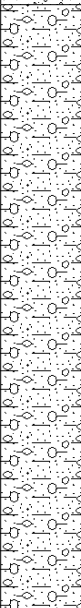
 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP08 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555699.00 - 749633.00		Date 18/02/2025	
Location: Cooloo, Co. Galway Ireland				Dimensions (m): 2.50		Scale 1:25		Logged PK	
Client: MKO				Depth 2.75					
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
	1.00 1.00	B	HSV 30kPa	1.10			Soft light brown slightly sandy gravelly cobbly CLAY with large boulders . Boulders are sub-rounded and 200-300mm in diameter of limestone.		
							Soft-firm light brown very sandy very gravelly cobbly CLAY with boulders. Boulders and cobbles comprise of limestone.		
	2.20	B					Grey angular gravel and cobbles (possibly weathered LIMESTONE)		
				2.70 2.75			End of Pit at 2.8m		
Remarks: Terminated due to possible bedrock. Slow ingress of groundwater									
Stability: Poor - Collapse from 0.5m									
									

GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP09 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 554930.00 - 747229.00 Level: m OD		Date 20/02/2025	
Location: Cooloo, Co. Galway Ireland				Dimensions (m): 2.50		Scale 1:25		Logged PK	
Client: MKO				Depth 1.80		2.00			
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
				0.20			TOPSOIL comprised of soft brown sandy clay with grass rootlets		
	0.50	B					Soft to firm slightly sandy, gravelly CLAY . Gravel is sub-rounded of limestone		
	1.00		HSV 74kPa	0.80			Soft to firm brown sandy slightly gravelly cobbly CLAY. Gravel is sub-rounded of limestone.		
	1.50	B							
				1.80			Grey massive LIMESTONE		
				1.81			End of Pit at 1.8m		
							1		
							2		
							3		
							4		
							5		
Remarks: Terminated due to possible bedrock. No groundwater encountered								AGS	
Stability: Good									

GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP10 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 556912.00 - 749360.00 Level: m OD		Date 19/02/2025	
Location: Cooloo, Co. Galway Ireland						Dimensions (m): 2.50 Depth 2.70		Scale 1:25 Logged PK	
Client: MKO									
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
				0.20			TOPSOIL comprised of soft brown sandy clay with grass rootlets		
	0.40	B		0.50			Soft brown slightly sandy slightly gravelly SILT. Gravel is sub-rounded. Sand is fine to coarse. Gravel is of limestone.		
	1.00		HSV 96kPa				Firm brown grey slightly sandy gravelly cobbly SILT with occasional boulders. Boulders are sub-rounded of limestone		
	2.00	B							
				2.70 2.72				Grey massive LIMESTONE	
							End of Pit at 2.7m		
Remarks: Terminated due to possible bedrock. No groundwater encountered									
Stability: Good									
AGS									

GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP11 Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 556197.00 - 748883.00		Date 18/02/2025		
Location: Cooloo, Co. Galway Ireland				Dimensions (m):		2.50		Scale 1:25		
Client: MKO				Depth 2.35		2.00		Logged PK		
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description			
	Depth	Type	Results							
▼	0.80	B	HSV 30kPa	0.20			TOPSOIL comprised of brown sandy clay with grass rootlets			1
	0.80					Soft to firm sandy slightly, gravelly SILT. Gravel is sub-rounded of limestone. Sand is fine to coarse.				
	2.00	B	2.35			Very stiff grey brown slightly sandy, gravelly, cobbly CLAY with occasional boulders. Cobbles and boulders are sub-rounded of limestone			2	
			2.45			Grey massive LIMESTONE End of Pit at 2.4m			3	
										4
										5
Remarks: Terminated due to possible bedrock. Slow ingress of groundwater										
Stability: Good										

GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP12 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555943.00 - 749063.00 Level: m OD		Date 18/02/2025	
Location: Cooloo, Co. Galway Ireland						Dimensions (m): 2.50		Scale 1:25	
Client: MKO						Depth 3.20 2.00		Logged PK	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
	0.80	B	HSV 48kPa	0.20			TOPSOIL comprised of soft brown sandy clay with grass rootlets		
	1.00					Soft brown sandy, slightly gravelly SILT. Gravel is sub-rounded of limestone			
	2.40	B		1.00			Firm grey brown slightly sandy, slightly gravelly cobbly SILT with abundant boulders. Cobbles and boulders are sub-rounded of limestone		
				3.20			Grey fractured LIMESTONE		
				3.22			End of Pit at 3.2m		
								5	
Remarks: Terminated due to possible bedrock. No groundwater encountered									
Stability: Moderate									

GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP13 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555411.00 - 747813.00 Level: m OD		Date 20/02/2025	
Location: Cooloo, Co. Galway Ireland						Dimensions (m): 2.50		Scale 1:25	
Client: MKO						Depth 2.50		Logged PK	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
	0.40	B	HSV 38kPa	0.20			TOPSOIL comprised of slightly sandy gravelly clay with grass rootlets		
	0.50					Soft to firm light brown sandy slightly gravelly SILT. Gravel are sub-rounded of limestone			
	2.00					Loose to medium dense sandy, GRAVEL with abundant boulders. Boulders are 200-300mm in diameter of limestone.			
	2.60 2.61	B				Grey massive LIMESTONE End of Pit at 2.5m			
Remarks: Terminated due to possible bedrock. No groundwater encountered									
Stability: Very poor - Collapse from 1m									
AGS									

Project Name: Cooloo Wind Farm

Project No.
22098

Co-ords:	555104.00 - 747925.00
Level:	m OD

Date
19/02/2025

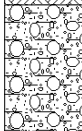
Location: Cooloo, Co. Galway Ireland

Dimensions (m):
Depth 0.80

Scale
1:25

Logged
PK

Client: MKO

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth	Type	Results					
	0.50	B	HSV 63kPa	0.15			TOPSOIL comprised of slightly gravelly slightly sandy CLAY	1 -
	0.50					Firm to stiff light brown slightly sandy sightly gravelly SILT with occasional boulders. Boulder and cobbles are sub-rounded of limestone.		
	0.70	B				Firm dark brown silty sandy GRAVEL. Gravel and cobbles are sub-angular of limestone		
						Grey brown weathered LIMESTONE. Oxidation on fracture faces and abundant fractures.		
				0.80 0.82			End of Pit at 0.8m	2 -
								3 -
								4 -
								5 -

Remarks: Terminated due to possible bedrock. No groundwater encountered

Stability: Good



GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TP15 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 556313.00 - 749138.00 Level: m OD		Date 18/02/2025	
Location: Cooloo, Co. Galway Ireland						Dimensions (m): 2.50 Depth 3.15 2.00		Scale 1:25 Logged PK	
Client: MKO									
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
	Depth	Type	Results						
▼	1.00	B	HSV 12kPa	0.30		Soft black peaty CLAY with pockets of white clayey marl	1		
	1.00			Sponge very fibrous woody PEAT with pockets of sand. H1 B2 R3 W3 N5 A1					
	2.50	B		1.95	Grey sandy cobbly GRAVEL. Gravel and cobbles are sub-angular and sub-rounded of limestone.	2			
				3.15	Grey massive LIMESTONE	3			
				3.16		End of Pit at 3.2m	4		
							5		
Remarks: Terminated due to possible bedrock. Slow ingress of groundwater								AGS	
Stability: Good									

TP01 - 1 of 2



TP01 - 2 of 2



TP02 - 1 of 2



TP02 - 2 of 2



TP03 - 1 of 2



TP03 - 2 of 2



TP04 - 1 of 2



TP04 - 2 of 2



TP05 - 1 of 2



TP05 - 2 of 2



TP06 - 1 of 2



TP06 - 2 of 2



TP07 - 1 of 2



TP07 - 2 of 2



TP08 - 1 of 2



TP08 - 2 of 2



TP09 - 1 of 2



TP09 - 2 of 2



TP10 - 1 of 2



TP10 - 2 of 2



TP11 - 1 of 2



TP11 - 2 of 2



TP12 - 1 of 2



TP12 - 2 of 2



TP13 - 1 of 2



TP13 - 2 of 2



TP14 - 1 of 2



TP14 - 2 of 2

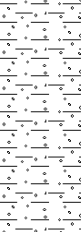


TP15 - 1 of 2

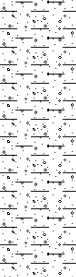


TP15 - 2 of 2



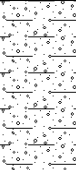
 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log			TrialPit No TPBP1 Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555689.00 - 749020.00 Level:		Date 30/08/2022	
Location: Cooloo, Co. Galway Ireland						Dimensions (m):		Scale 1:25	
Client: McCarthy Keville O'Sullivan Ltd. (MKO)						Depth 3.10		Logged IPP	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.80			Brown slightly sandy slightly gravelly CLAY. Sand is medium to coarse. Gravel is fine to coarse. Presence of pockets of black organic material at 0.8m		
				3.10			Light brown slightly sandy gravelly SILT. High cobble content and some boulders. Gravel is fine to coarse, angular to subrounded. At 2.6m presence of large boulders (<0.6m) rounded to subrounded.		
							End of Pit at 3.10m		
Remarks:  									
Stability:									



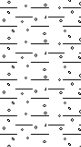
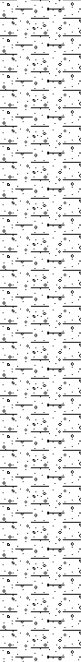
 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log			TrialPit No TPBP3 Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555352.00 - 750647.00 Level:		Date 31/08/2022	
Location: Cooloo, Co. Galway Ireland						Dimensions (m):		Scale 1:25	
Client: McCarthy Keville O'Sullivan Ltd. (MKO)						Depth 1.93		Logged IPP	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.40			Dark brown peat.		
							Firm light grey mottled yellow SILT.		
				1.00			Grey slightly sandy gravelly CLAY. Sand and gravels are angular to subangular. Sand is medium to coarse, gravel is fine to coarse. Presence of boulders (0.3m). End of the TP due to rock head.		
				1.93			End of Pit at 1.93m		
Remarks:  									
Stability:									

 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log			TrialPit No TPSSA Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 557466.00 - 749301.00 Level:		Date 31/08/2022	
Location: Cooloo, Co. Galway Ireland						Dimensions (m):		Scale 1:25	
Client: McCarthy Keville O'Sullivan Ltd. (MKO)						Depth 2.80		Logged IPP	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
▼				0.70			Peat with high root content.		
							Light grey slightly sandy slightly gravelly SILT with some cobbles. Sand is medium to coarse, subangular to subrounded. Gravel is fine to coarse, subangular to subrounded.		
				2.80			End of Pit at 2.80m		
1 2 3 4 5									
Remarks:									
Stability:									

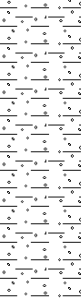
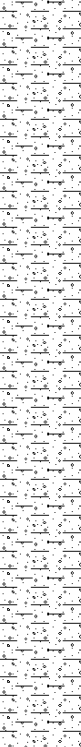
 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log			TrialPit No TPSSB Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 557383.00 - 748868.00 Level:		Date 31/08/2022	
Location: Cooloo, Co. Galway Ireland						Dimensions (m):		Scale 1:25	
Client: McCarthy Keville O'Sullivan Ltd. (MKO)						Depth 2.10		Logged IPP	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
▼				0.20			[TOPSOIL] Brown slightly gravelly slightly sandy CLAY. Gravel and sand are angular to subangular, fine to coarse.		
				2.10			Grey slightly sandy very gravelly SILT with large angular to subangular boulders. Sand is medium to coarse. Gravel is fine to coarse, both angular to subrounded.		
							End of Pit at 2.10m		
1 2 3 4 5									
Remarks:									
Stability:									

 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log			TrialPit No TPT2 Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555608.00 - 748029.00 Level:		Date 30/08/2022	
Location: Cooloo, Co. Galway Ireland						Dimensions (m):		Scale 1:25	
Client: McCarthy Keville O'Sullivan Ltd. (MKO)						Depth 1.64		Logged IPP	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.50			Dark brown slightly mottled orange PEAT with high wood content		
				1.10			Light grey slightly sandy clayey GRAVEL. Sand is medium to coarse, subangular to rounded. Gravel is fine to coarse, subangular to subrounded.		
				1.64			Grey slightly sandy gravelly SILT. Gravel is fine to coarse, angular to subangular with few cobbles.		
							End of Pit at 1.64m		
Remarks: Stability: 									

 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log			TrialPit No TPT3 Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555566.00 - 748639.00 Level:		Date 30/08/2022	
Location: Cooloo, Co. Galway Ireland						Dimensions (m):		Scale 1:25	
Client: McCarthy Keville O'Sullivan Ltd. (MKO)						Depth 2.10		Logged IPP	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.90			Brown PEAT. Presence of roots and wood.		
				1.52			Grey slightly sandy slightly gravelly SILT with some cobble content. Gravel is subangular to angular, fine to coarse.		
				2.10			Grey SILT. Cobble content increases with depth.		
							End of Pit at 2.10m		
Remarks:  									
Stability:									

 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log			TrialPit No TPT4 Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 556170.00 - 748592.00 Level:		Date 30/08/2022	
Location: Cooloo, Co. Galway Ireland						Dimensions (m):		Scale 1:25	
Client: McCarthy Keville O'Sullivan Ltd. (MKO)						Depth 2.70		Logged IPP	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.50			Orangish brown slightly gravelly CLAY. Gravel is fine to medium, angular to subangular.		
							Brownish grey slightly sandy slightly gravelly CLAY. Presence of large boulders (<0.50m). Gravel and sand is angular to subangular. High water content.		
				2.70			End of Pit at 2.70m		
1 2 3 4 5									
Remarks:									
Stability:									

 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log			TrialPit No TPT6 Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 555649.00 - 749698.00 Level:		Date 30/08/2022	
Location: Cooloo, Co. Galway Ireland						Dimensions (m):		Scale 1:25	
Client: McCarthy Keville O'Sullivan Ltd. (MKO)						Depth 3.20		Logged IPP	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.70			Light brown CLAY.		
							Grey gravelly SILT with cobble content. Gravel is fine to coarse, angular to subrounded. Pocket of organic material at 1m deep. Very large boulders subangular to rounded at 2.7m deep.		
				3.00			Cobbles and boulders. Boulders are 0.2-0.5m subangular to subrounded. [Possible weathered bedrock]		
				3.20		End of Pit at 3.20m			
Remarks: Stability: 									

 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log			TrialPit No TPT8 Sheet 1 of 1		
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 556994.00 - 749351.00 Level:		Date 31/08/2022	
Location: Cooloo, Co. Galway Ireland						Dimensions (m):		Scale 1:25	
Client: McCarthy Keville O'Sullivan Ltd. (MKO)						Depth 3.50		Logged IPP	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				1.00			Brown gravelly CLAY. Gravel is fine to coarse, subangular to subrounded. Presence of rounded cobbles.		
							Light grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is fine to coarse. Presence of large boulders (>0.5m) rounded to subrounded.		
				3.50			End of Pit at 3.50m		
Remarks:									
Stability:									



 GDG GAVIN & DOHERTY GEOSOLUTIONS				Trial Pit Log				TrialPit No TPT9 Sheet 1 of 1	
Project Name: Cooloo Wind Farm				Project No. 22098		Co-ords: 556825.00 - 749874.00 Level:		Date 31/08/2022	
Location: Cooloo, Co. Galway Ireland						Dimensions (m):		Scale 1:25	
Client: McCarthy Keville O'Sullivan Ltd. (MKO)						Depth 4.00		Logged IPP	

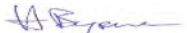
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
▼				0.25			Black peat with high rootlet content. Strong odour.	1
							Cream slightly sandy SILT. Shell content.	
				1.20			Very soft yellowish brown CLAY. Shell and root content.	2
				2.50			Very soft white SILT.	3
			4.00			End of Pit at 4.00m		4
								5

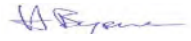
Remarks:

Stability:



A.5 GEOTECHNICAL LABORATORY TEST RESULTS

IGSL Ltd Materials Laboratory Unit J5, M7 Business Park Newhall, Naas Co. Kildare 045 846176		Test Report										 ISO 17025 ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1331		
		Determination of Moisture Content, Liquid & Plastic Limits Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**												
Report No. R166943 Contract No. 25860 Contract Name: Cooloo WF Customer Venterra Samples Received: 26/02/25 Date Tested: 26/02/25														
BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description	
TP01	AA233309	0.8	A25/0576	B	25	33	18	15	72	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY	
TP01	AA233310	2.0	A25/0577	B	8.6	21	NP	NP	47	WS	4.4		Grey/brown slightly sandy, gravelly, SILT	
TP02	AA233317	0.8	A25/0578	B	30	41	23	18	61	WS	4.4	C I	Grey/brown sandy, slightly gravelly, CLAY	
TP02	AA233318	2.0	A25/0579	B	8.2	20	NP	NP	55	WS	4.4		Grey slightly sandy, gravelly, SILT	
TP03	AA233327	0.5	A25/0580	B	577								Brown Peat	
TP03	AA233328	1.5	A25/0581	B	8.1	25	NP	NP	38	WS	4.4		Grey silty, sandy, GRAVEL with many cobbles	
TP04	AA233323	0.4	A25/0582	B	20	33	17	16	64	WS	4.4	C L	Brown slightly sandy, gravelly, CLAY	
TP04	AA233324	0.9	A25/0583	B	12	50	NP	NP	61	WS	4.4		Brown slightly sandy, gravelly, SILT	
TP05	AA233321	0.5	A25/0584	B	20	29	NP	NP	66	WS	4.4		Brown sandy, slightly gravelly, SILT	
TP06	AA233301	1.1	A25/0586	B	690								Brown Peat	
TP06	AA233302	3.1	A25/0587	B	36	36	NP	NP	99	WS	4.4		Grey sandy, SILT	
TP07	AA233315	1.5	A25/0588	B	634								Brown Peat	
TP07	AA233316	3.5	A25/0589	B	97	85	NP	NP	98	WS	4.4		White Marl with bands of organic material	
TP08	AA233305	1.0	A25/0590	B	13	25	14	11	58	WS	4.4	C L	Brown slightly sandy, gravelly, CLAY	
TP08	AA233306	2.2	A25/0591	B	17	23	NP	NP	63	WS	4.4		Brown slightly sandy, slightly gravelly, SILT	
Preparation: WS - Wet sieved AR - As received NP - Non plastic Liquid Limit 4.3 Cone Penetrometer definitive method Clause: 4.4 Cone Penetrometer one point method					Sample Type: B - Bulk Disturbed U - Undisturbed					Remarks: Results relate only to the specimen tested, in as received condition unless otherwise noted. NOTE: **These clauses have been superseded by EN 17892-1 and EN17892-12. Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information. This report shall not be reproduced except in full without written approval from the Laboratory.				
IGSL Ltd Materials Laboratory					Persons authorized to approve reports H Byrne (Laboratory Manager)					Approved by		Date	Page	
												20/03/25	1 of 1	

IGSL Ltd Materials Laboratory Unit J5, M7 Business Park Newhall, Naas Co. Kildare 045 846176		Test Report											
		Determination of Moisture Content, Liquid & Plastic Limits Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**											
Report No. R166944 Contract No. 25860 Contract Name: Cooloo WF Customer Venterra Samples Received: 26/02/25 Date Tested: 26/02/25													
BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
TP09	AA233325	0.5	A25/0592	B	14	24	13	11	52	WS	4.4	C L	Brown slightly sandy, gravelly, CLAY
TP09	AA233326	1.5	A25/0593	B	26	40	24	16	60	WS	4.4	C I	Brown sandy, slightly gravelly, CLAY
TP10	AA233313	0.4	A25/0594	B	26	50	NP	NP	34	WS	4.4		Brown slightly sandy, slightly gravelly, SILT
TP10	AA233314	2.0	A25/0595	B	8.4	21	12	9	52	WS	4.4	C L	Brown slightly sandy, gravelly, SILT
TP11	AA233307	0.8	A25/0596	B	26	40	NP	NP	56	WS	4.4		Brown sandy, slightly gravelly, SILT
TP11	AA233308	2.0	A25/0597	B	7.6	23	13	10	46	WS	4.4	C L	Grey slightly sandy, gravelly, CLAY
TP12	AA233311	0.8	A25/0598	B	26	45	NP	NP	59	WS	4.4		Brown sandy, slightly gravelly, SILT
TP12	AA233312	2.4	A25/0599	B	9.0	20	NP	NP	48	WS	4.4		Brown slightly sandy, slightly gravelly, SILT
TP13	AA233329	0.4	A25/0600	B	17	24	NP	NP	74	WS	4.4		Brown sandy, slightly gravelly, SILT
TP13	AA233330	2.0	A25/0601	B	11	21	NP	NP	47	WS	4.4		Grey silty, sandy, GRAVEL with some cobbles
TP14	AA233319	0.5	A25/0602	B	22	32	NP	NP	52	WS	4.4		Grey slightly sandy, slightly gravelly, SILT
TP14	AA233320	0.7	A25/0603	B	26	51	NP	NP	48	WS	4.4		Brown silty, sandy, GRAVEL
TP15	AA233303	1.0	A25/0604	B	565								Brown Peat
Preparation: WS - Wet sieved AR - As received NP - Non plastic Liquid Limit 4.3 Cone Penetrometer definitive method Clause: 4.4 Cone Penetrometer one point method Sample Type: B - Bulk Disturbed U - Undisturbed Remarks: Results relate only to the specimen tested, in as received condition unless otherwise noted. NOTE: **These clauses have been superseded by EN 17892-1 and EN17892-12. Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information. This report shall not be reproduced except in full without written approval from the Laboratory.													
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											20/03/25	1 of 1	

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



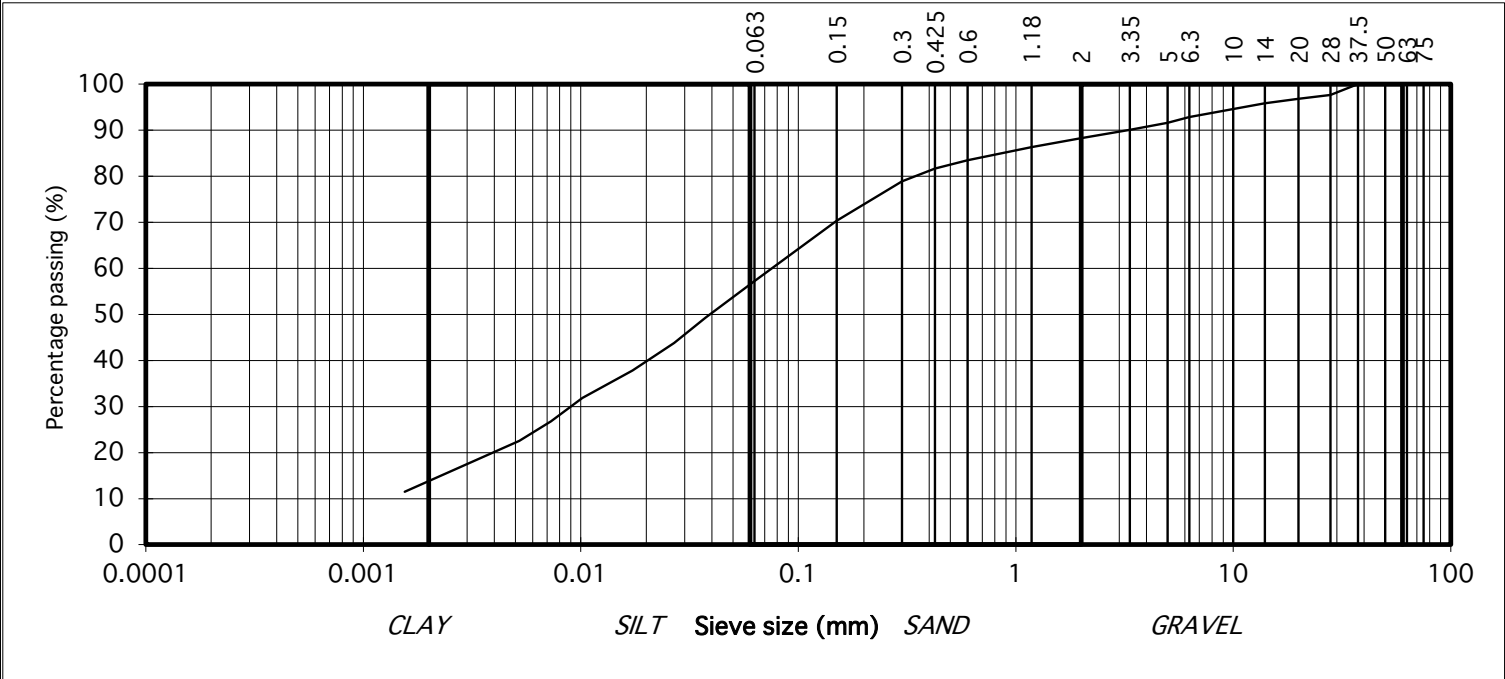
particle size	% passing		Contract No.	25860	Report No.	R167002				
			Contract Name :	Cooloo WF						
			BH/TP No.	TP01						
			Sample No.*	AA233309	Lab. Sample No.	A25/0576				
			Sample Type:	B						
			Depth* (m)	0.80	Customer:	Venterra				
			Date Received	25/02/2025	Date Testing started	26/02/2025				
			Description:	Brown slightly sandy, slightly gravelly, CLAY						
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .						
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.							
63	100									
50	100									
37.5	100									
28	98									
20	97									
14	96									
10	95	GRAVEL								
6.3	93									
5	92									
3.35	90									
2	88									
1.18	86									
0.6	83	SAND								
0.425	82									
0.3	79									
0.15	70									
0.063	57									
0.037	49									
0.027	44	SILT/CLAY								
0.017	38									
0.010	32									
0.007	27									
0.005	23									
0.002	11									

Percentage passing (%)

Sieve size (mm)

CLAY SILT SAND GRAVEL

Sieve Size (mm)	Percentage Passing (%)
75	100
63	100
50	100
37.5	100
28	98
20	97
14	96
10	95
6.3	93
5	92
3.35	90
2	88
1.18	86
0.6	83
0.425	82
0.3	79
0.15	70
0.063	57
0.037	49
0.027	44
0.017	38
0.010	32
0.007	27
0.005	23
0.002	11



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	<i>H Byrne</i>	20/03/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167003	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Cooloo WF			
			BH/TP No.	TP01			
			Sample No.*	AA233310	Lab. Sample No.	A25/0577	
			Sample Type:	B			
			Depth* (m)	2.00	Customer:	Venterra	
			Date Received	25/02/2025	Date Testing started	26/02/2025	
			Description:	Grey/brown slightly sandy, gravelly, SILT			
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			
63	100						
50	92						
37.5	88						
28	80						
20	76						
14	71						
10	69	GRAVEL					
6.3	65						
5	64						
3.35	60						
2	57						
1.18	53						
0.6	49						
0.425	47	SAND					
0.3	44						
0.15	38						
0.063	31						
0.037	27						
0.027	24						
0.017	21						
0.010	18	SILT/CLAY					
0.007	16						
0.005	13						
0.002	9						

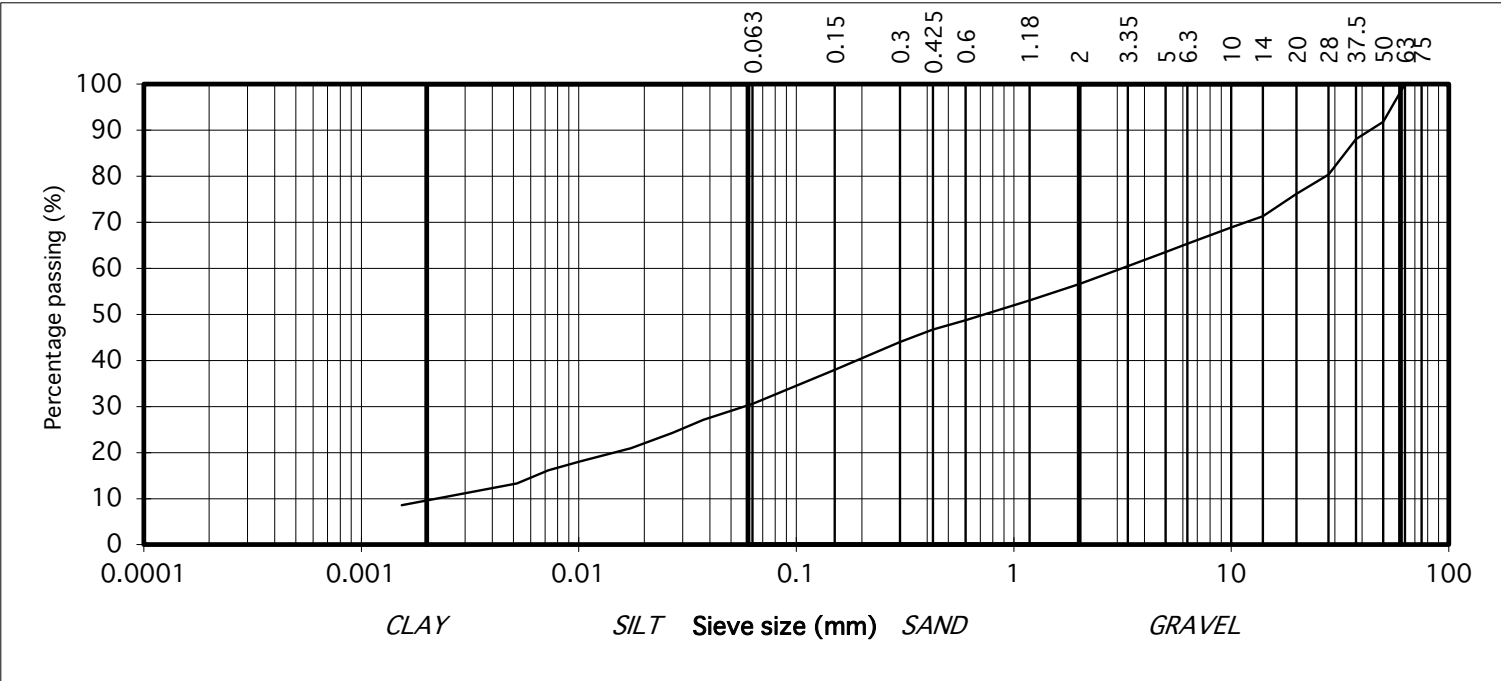
Percentage passing (%)

Sieve size (mm)

CLAY SILT SAND GRAVEL

Sieve Size (mm)	Percentage Passing (%)
75	100
63	100
50	92
37.5	88
28	80
20	76
14	71
10	69
6.3	65
5	64
3.35	60
2	57
1.18	53
0.6	49
0.425	47
0.3	44
0.15	38
0.063	31
0.037	27
0.027	24
0.017	21
0.010	18
0.007	16
0.005	13
0.002	9

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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TEST REPORT

Determination of Particle Size Distribution

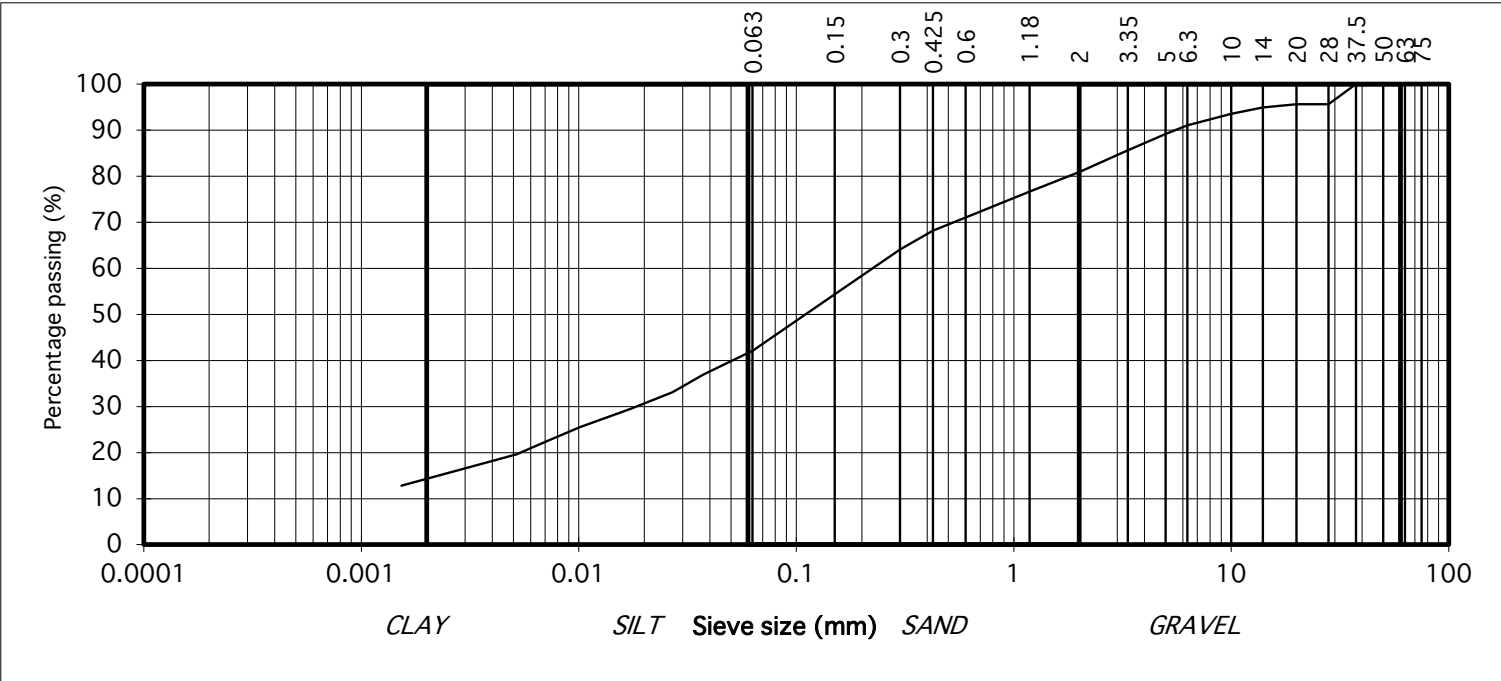
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167004	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.			
			Contract Name :	Cooloo WF						
			BH/TP No.	TP02						
			Sample No.*	AA233317	Lab. Sample No.	A25/0578				
			Sample Type:	B						
			Depth* (m)	0.80	Customer:	Venterra				
			Date Received	25/02/2025	Date Testing started	26/02/2025				
			Description:	Brown sandy, slightly gravelly, CLAY						
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .						
63	100									
50	100									
37.5	100									
28	96									
20	96	GRAVEL								
14	95									
10	94									
6.3	91									
5	89									
3.35	86	SAND								
2	81									
1.18	77									
0.6	71									
0.425	68									
0.3	64	SILT/CLAY								
0.15	54									
0.063	42									
0.038	37									
0.027	33									
0.017	29									
0.010	26									
0.007	23									
0.005	20									
0.002	13									

Sieve size (mm)	Percentage passing (%)
0.002	13
0.005	20
0.007	23
0.010	26
0.017	29
0.027	33
0.038	37
0.063	42
0.15	54
0.3	64
0.425	68
0.6	71
1.18	77
2	81
3.35	86
5	89
6.3	91
10	94
14	95
20	96
28	96
37.5	100
50	100
63	100
75	100

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R 167005
75	100	COBBLES	Contract Name :	Cooloo WF		
63	100		BH/TP No.	TP02		
50	100		Sample No.*	AA233318	Lab. Sample No.	A25/0579
37.5	94	GRAVEL	Sample Type:	B		
28	92		Depth* (m)	2.00	Customer:	Venterra
20	84		Date Received	25/02/2025	Date Testing started	26/02/2025
14	82		Description:	Grey slightly sandy, gravelly, SILT		
10	78		Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .		
6.3	74					
5	72					
3.35	68	SAND				
2	64					
1.18	60					
0.6	55					
0.425	53					
0.3	50	SILT/CLAY				
0.15	44					
0.063	36					

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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The graph plots Percentage passing (%) on the y-axis (0 to 100) against Sieve size (mm) on the x-axis (logarithmic scale from 0.0001 to 100). The curve is a solid line connecting the data points from the table. The x-axis is divided into four regions: CLAY (0.0001 to 0.001 mm), SILT (0.001 to 0.063 mm), SAND (0.063 to 0.425 mm), and GRAVEL (0.425 to 100 mm). The curve shows that 100% of the sample passes through a 75mm sieve, and 36% passes through a 0.063mm sieve.

Sieve size (mm)	Percentage passing (%)
75	100
63	100
50	100
37.5	94
28	92
20	84
14	82
10	78
6.3	74
5	72
3.35	68
2	64
1.18	60
0.6	55
0.425	53
0.3	50
0.15	44
0.063	36

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Page no:

20/03/25

1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

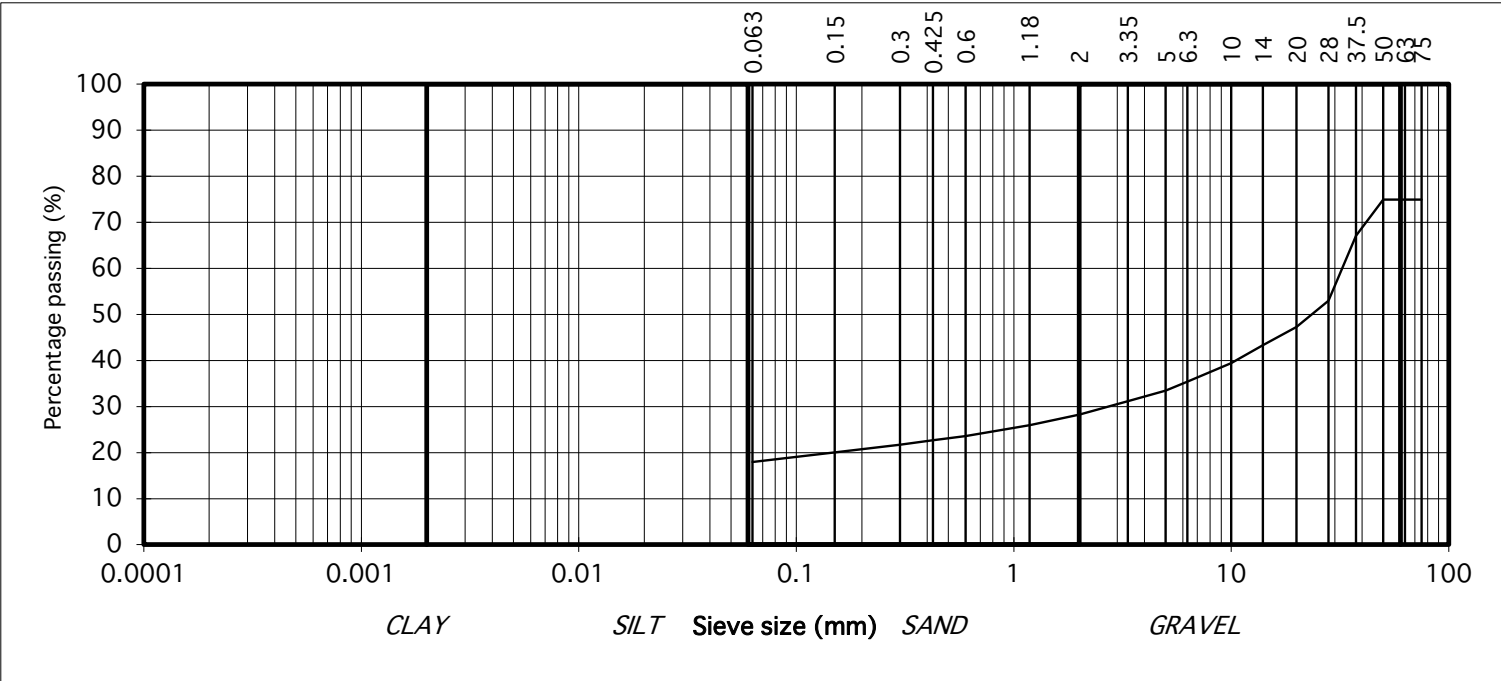
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167006				
			Contract Name :	Cooloo WF						
			BH/TP No.	TP03						
			Sample No.*	AA233328	Lab. Sample No.	A25/0581				
			Sample Type:	B						
			Depth* (m)	1.50	Customer:	Venterra				
			Date Received	25/02/2025	Date Testing started	26/02/2025				
			Description:	Grey silty, sandy, GRAVEL with many cobbles						
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .						
75	75	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.							
63	75									
50	75									
37.5	67									
28	53									
20	47	GRAVEL								
14	43									
10	39									
6.3	35									
5	33									
3.35	31	SAND								
2	28									
1.18	26									
0.6	24									
0.425	23									
0.3	22	SILT/CLAY								
0.15	20									
0.063	18									

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
	<i>[Signature]</i>	20/03/25	1 of 1
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)			

TEST REPORT

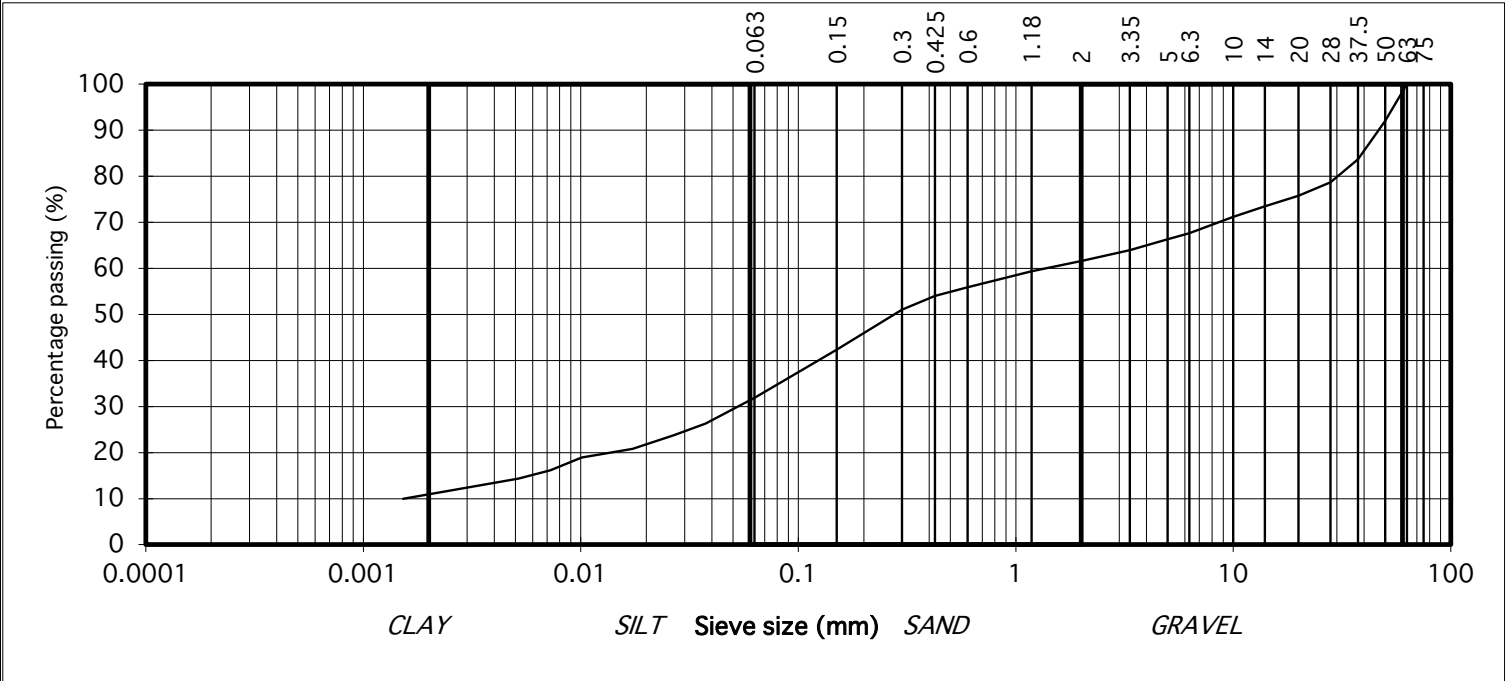
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167007	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Cooloo WF			
			BH/TP No.	TP04			
			Sample No.*	AA233323	Lab. Sample No.	A25/0582	
			Sample Type:	B			
			Depth* (m)	0.40	Customer:	Venterra	
			Date Received	25/02/2025	Date Testing started	26/02/2025	
			Description:	Brown slightly sandy, gravelly, CLAY			
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			
75	100	COBBLES					
63	100						
50	92						
37.5	84						
28	79						
20	76						
14	73		GRAVEL				
10	71						
6.3	68						
5	66						
3.35	64						
2	62						
1.18	59	SAND					
0.6	56						
0.425	54						
0.3	51						
0.15	42						
0.063	32						
0.037	26		SILT/CLAY				
0.027	24						
0.017	21						
0.010	19						
0.007	16						
0.005	14						
0.002	10						

Sieve Size (mm)	Percentage Passing (%)
75	100
63	100
50	92
37.5	84
28	79
20	76
14	73
10	71
6.3	68
5	66
3.35	64
2	62
1.18	59
0.6	56
0.425	54
0.3	51
0.15	42
0.063	32
0.037	26
0.027	24
0.017	21
0.010	19
0.007	16
0.005	14
0.002	10



IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

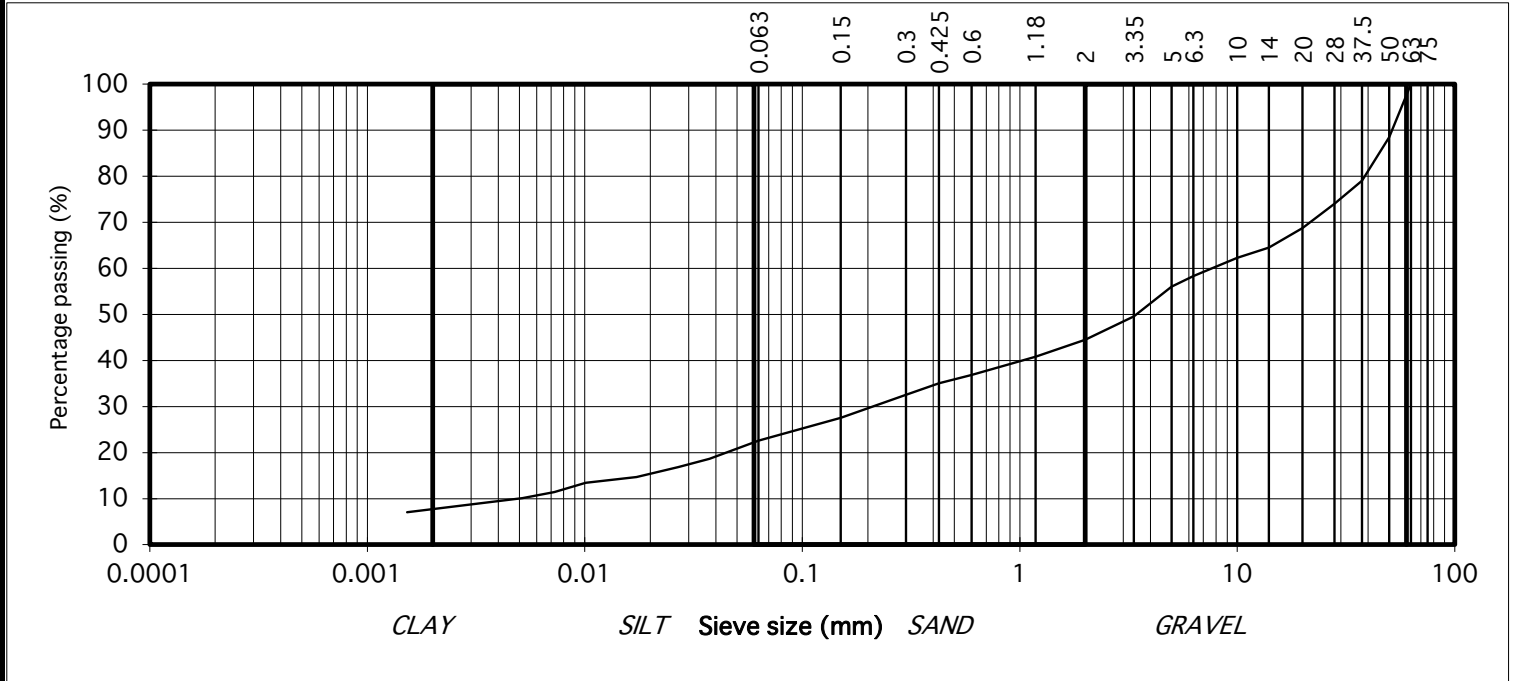
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167008	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.			
			Contract Name :	Cooloo WF						
			BH/TP No.	TP04						
			Sample No.*	AA233323	Lab. Sample No.	A25/0583				
			Sample Type:	B						
			Depth* (m)	0.90	Customer:	Venterra				
			Date Received	25/02/2025	Date Testing started	26/02/2025				
			Description:	Brown slightly sandy, gravelly, SILT						
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377						
63	100									
50	88									
37.5	79									
28	74									
20	69	GRAVEL								
14	65									
10	62									
6.3	58									
5	56									
3.35	50	SAND								
2	45									
1.18	41									
0.6	37									
0.425	35									
0.3	33	SILT/CLAY								
0.15	28									
0.063	23									
0.037	19									
0.027	17									
0.017	15									
0.010	13									
0.007	11									
0.005	10									
0.002	7									

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
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TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



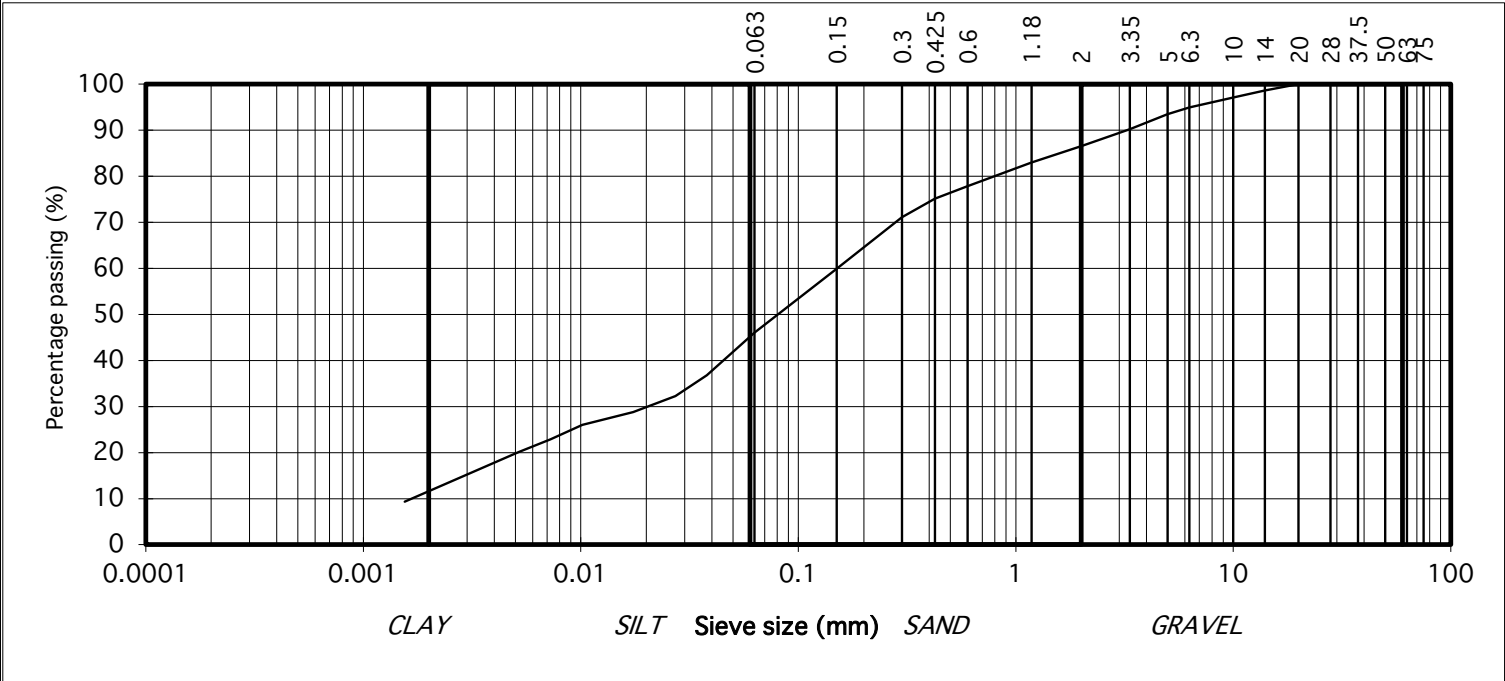
particle size	% passing		Contract No.	25860	Report No.	R167009						
			Contract Name :	Cooloo WF								
			BH/TP No.	TP05								
			Sample No.*	AA233321	Lab. Sample No.	A25/0584						
			Sample Type:	B								
			Depth* (m)	0.50	Customer:	Venterra						
			Date Received	25/02/2025	Date Testing started	26/02/2025						
			Description:	Brown sandy, slightly gravelly, SILT								
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377								
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.									
63	100											
50	100											
37.5	100											
28	100											
20	100											
14	99											
10	97	GRAVEL										
6.3	95											
5	93											
3.35	90											
2	87											
1.18	83											
0.6	78											
0.425	75	SAND										
0.3	71											
0.15	60											
0.063	46											
0.038	37											
0.027	32											
0.017	29											
0.010	26	SILT/CLAY										
0.007	23											
0.005	20											
0.002	9											

Percentage passing (%)

Sieve size (mm)

CLAY SILT SAND GRAVEL

Sieve Size (mm)	Percentage Passing (%)
0.075	10
0.15	20
0.3	30
0.6	40
1.18	50
2.5	60
5.0	70
10.0	80
20.0	90
40.0	95
75.0	100



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TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167010 <th rowspan="10"> Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. </th>	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.																																								
			Contract Name :	Cooloo WF																																											
			BH/TP No.	TP05																																											
			Sample No.*	AA233322	Lab. Sample No.	A25/0585																																									
			Sample Type:	B																																											
			Depth* (m)	0.70	Customer:	Venterra																																									
			Date Received	25/02/2025	Date Testing started	25/02/2025																																									
			Description:	Brown clayey/silty, very sandy, GRAVEL																																											
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4																																											
75	100	COBBLES	<table><thead><tr><th>Sieve size (mm)</th><th>Percentage passing (%)</th></tr></thead><tbody><tr><td>0.063</td><td>100</td></tr><tr><td>0.15</td><td>99</td></tr><tr><td>0.3</td><td>98</td></tr><tr><td>0.425</td><td>97</td></tr><tr><td>0.6</td><td>96</td></tr><tr><td>1.18</td><td>95</td></tr><tr><td>2</td><td>94</td></tr><tr><td>3.35</td><td>93</td></tr><tr><td>5</td><td>92</td></tr><tr><td>6.3</td><td>91</td></tr><tr><td>10</td><td>90</td></tr><tr><td>14</td><td>89</td></tr><tr><td>20</td><td>88</td></tr><tr><td>28</td><td>87</td></tr><tr><td>37.5</td><td>86</td></tr><tr><td>50</td><td>85</td></tr><tr><td>63</td><td>84</td></tr><tr><td>75</td><td>83</td></tr><tr><td>100</td><td>82</td></tr></tbody></table>					Sieve size (mm)	Percentage passing (%)	0.063	100	0.15	99	0.3	98	0.425	97	0.6	96	1.18	95	2	94	3.35	93	5	92	6.3	91	10	90	14	89	20	88	28	87	37.5	86	50	85	63	84	75	83	100	82
Sieve size (mm)	Percentage passing (%)																																														
0.063	100																																														
0.15	99																																														
0.3	98																																														
0.425	97																																														
0.6	96																																														
1.18	95																																														
2	94																																														
3.35	93																																														
5	92																																														
6.3	91																																														
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20	88																																														
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50	85																																														
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1.18	36																																														
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0.063	11																																														
		SAND																																													
		SILT/CLAY																																													

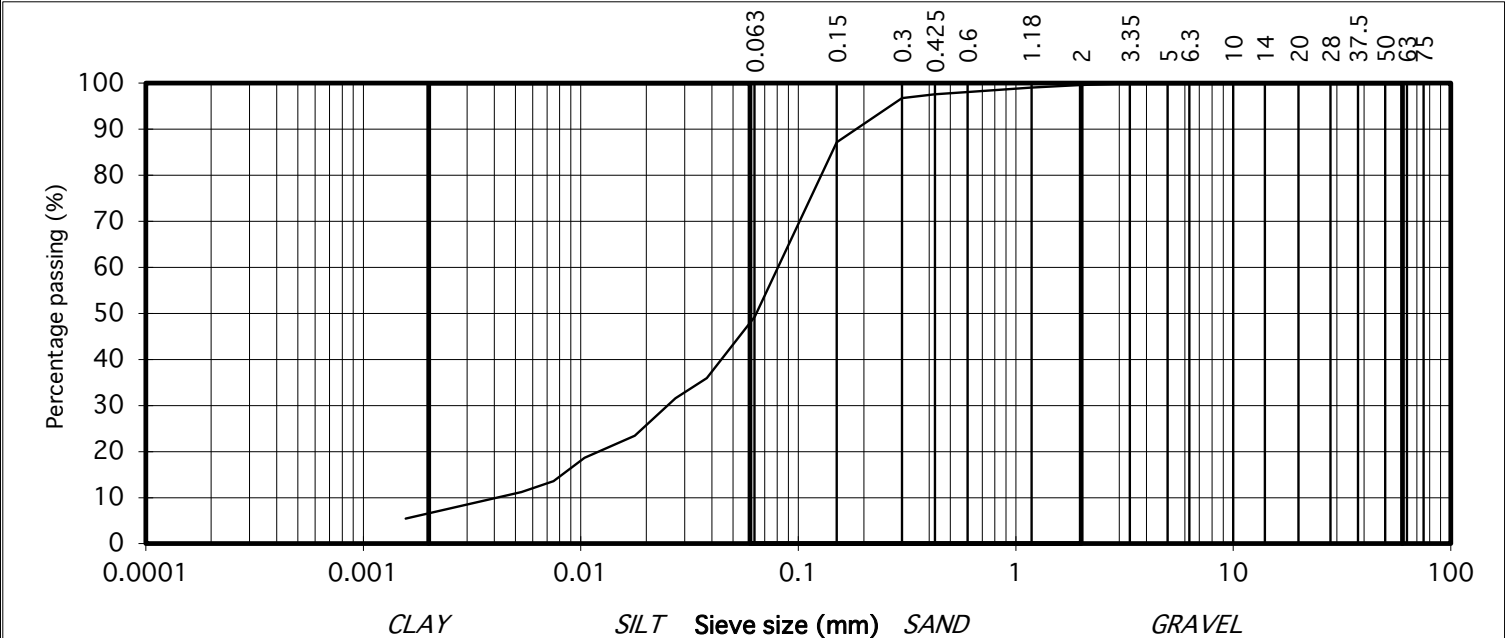
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)			

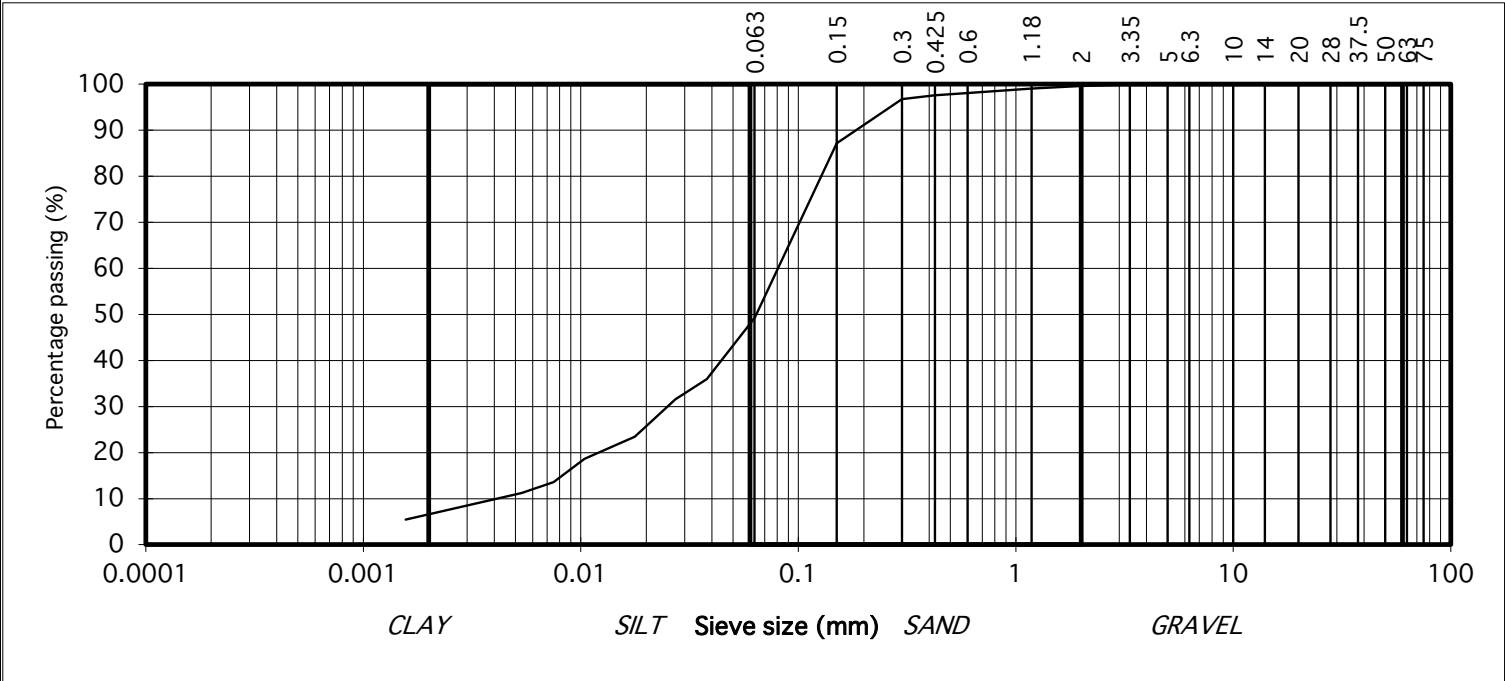
TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167011 <th></th>		
			Contract Name :	Cooloo WF			Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.	
			BH/TP No.	TP06				
			Sample No.*	AA233302	Lab. Sample No.	A25/0587		
			Sample Type:	B				
			Depth* (m)	3.10	Customer:	Venterra		
			Date Received	25/02/2025	Date Testing started	25/02/2025		
			Description:	Grey sandy, SILT				
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4				
								
75	100	COBBLES						
63	100							
50	100							
37.5	100							
28	100							
20	100							
14	100							
10	100							
6.3	100	GRAVEL						
5	100							
3.35	100							
2	100							
1.18	99							
0.6	98							
0.425	98							
0.3	97							
0.15	87	SAND						
0.063	49							
0.038	36							
0.027	32							
0.018	23							
0.010	19							
0.007	14							
0.005	11							
0.002	5	SILT/CLAY						



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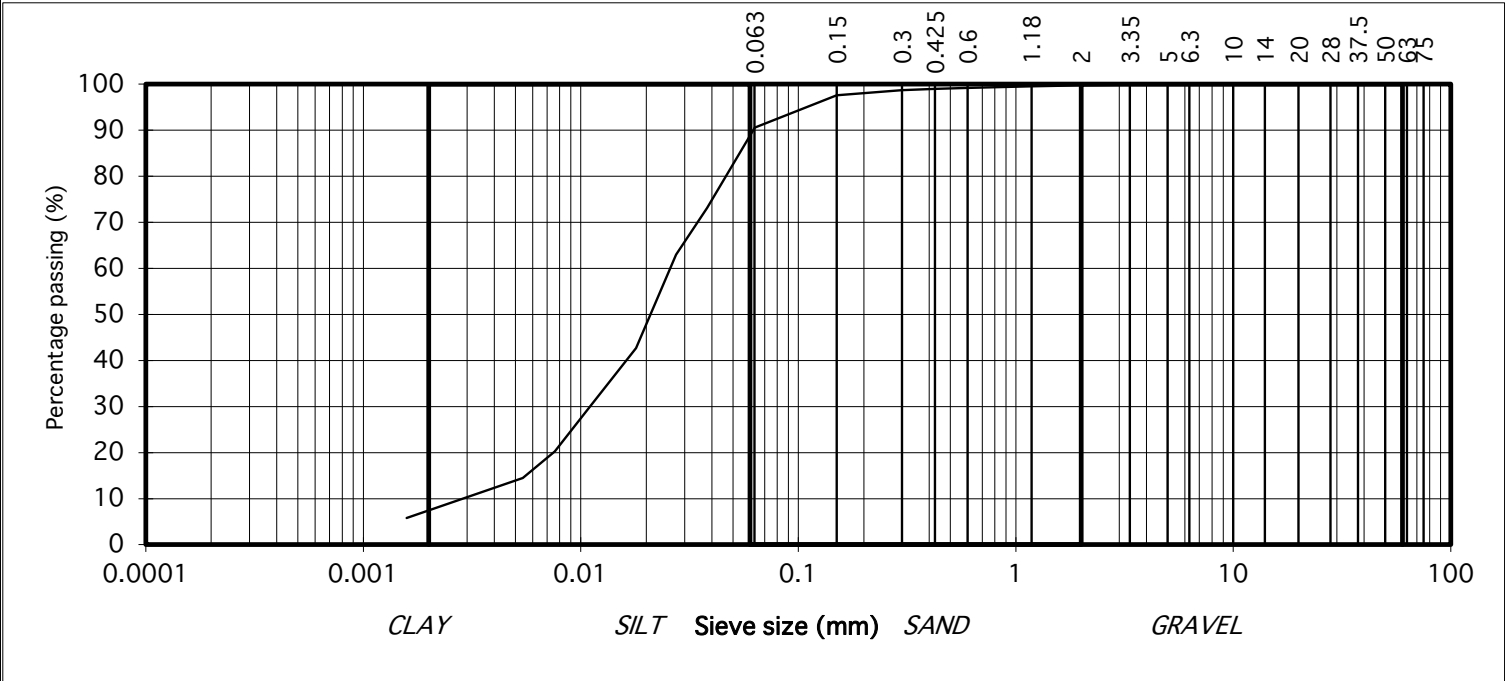
TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167012	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Cooloo WF			
			BH/TP No.	TP07			
			Sample No.*	AA233316	Lab. Sample No.	A25/0589	
			Sample Type:	B			
			Depth* (m)	3.50	Customer:	Venterra	
			Date Received	25/02/2025	Date Testing started	25/02/2025	
			Description:	White slightly sandy, SILT			
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4			
75	100	COBBLES					
63	100						
50	100						
37.5	100						
28	100						
20	100						
14	100						
10	100						
6.3	100	GRAVEL					
5	100						
3.35	100						
2	100						
1.18	100						
0.6	99						
0.425	99						
0.3	99						
0.15	98	SAND					
0.063	91						
0.038	73						
0.027	63						
0.018	43						
0.011	29						
0.008	20						
0.005	14						
0.002	6	SILT/CLAY					



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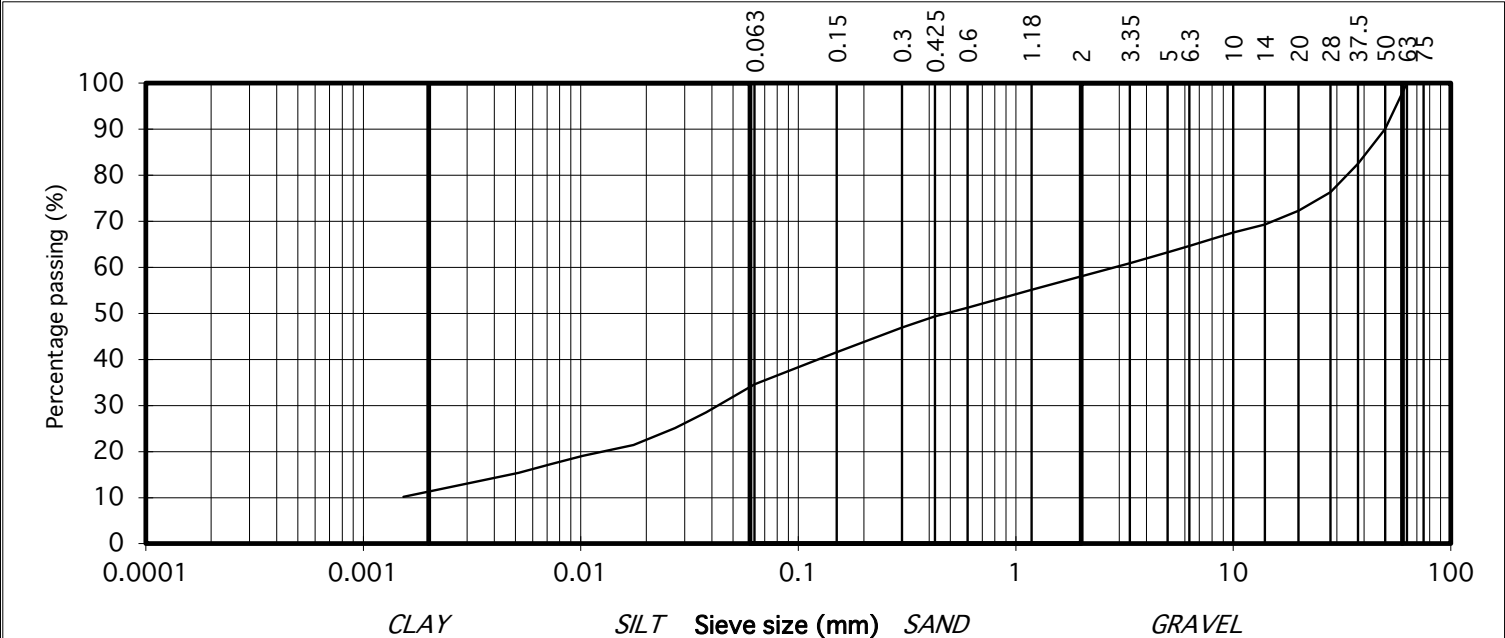
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

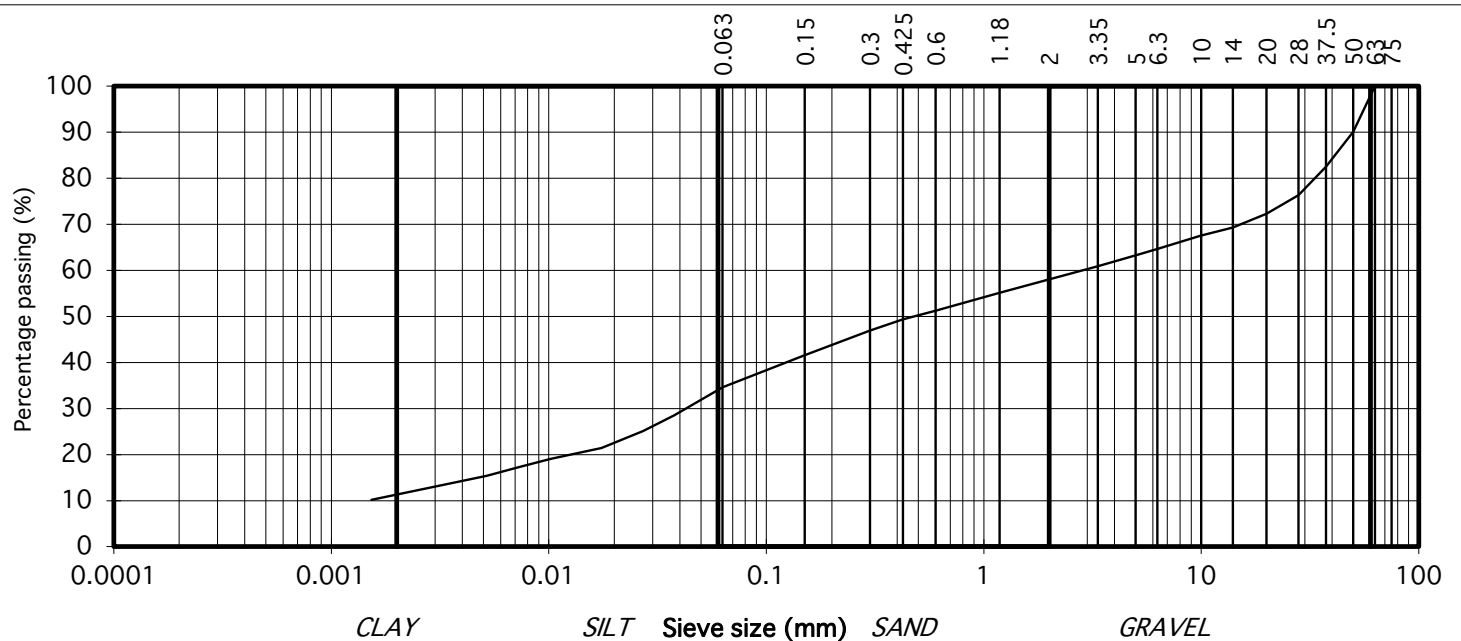
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167013	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Cooloo WF			
			BH/TP No.	TP08			
			Sample No.*	AA233305	Lab. Sample No.	A25/0590	
			Sample Type:	B			
			Depth* (m)	1.00	Customer:	Venterra	
			Date Received	25/02/2025	Date Testing started	26/02/2025	
			Description:	Brown slightly sandy, gravelly, CLAY			
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4			
75	100	COBBLES					
63	100						
50	90						
37.5	83						
28	76						
20	72	GRAVEL					
14	69						
10	68						
6.3	65						
5	63						
3.35	61	SAND					
2	58						
1.18	55						
0.6	51						
0.425	49						
0.3	47	SILT/CLAY					
0.15	42						
0.063	35						
0.038	28						
0.027	25						
0.017	21						
0.010	19						
0.007	17						
0.005	15						
0.002	10						

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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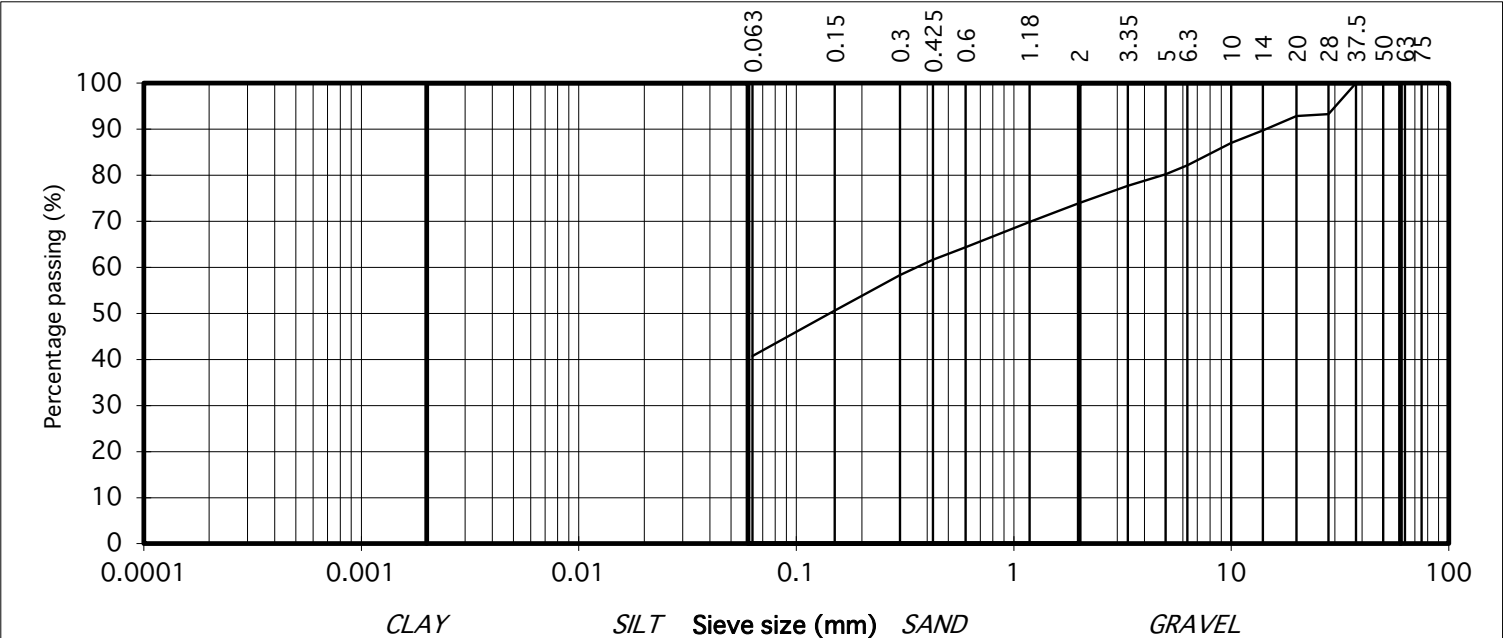
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167014	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Cooloo WF			
			BH/TP No.	TP08			
			Sample No.*	AA233306	Lab. Sample No.	A25/0591	
			Sample Type:	B			
			Depth* (m)	2.20	Customer:	Venterra	
			Date Received	25/02/2025	Date Testing started	25/02/2025	
			Description:	Brown slightly sandy, slightly gravelly, SILT			
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4			
75	100	COBBLES					
63	100						
50	100						
37.5	100						
28	93						
20	93	GRAVEL					
14	90						
10	87						
6.3	82						
5	80						
3.35	78	SAND					
2	74						
1.18	70						
0.6	64						
0.425	62						
0.3	58	SILT/CLAY					
0.15	51						
0.063	41						

IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
		20/03/25	1 of 1
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)			

TEST REPORT

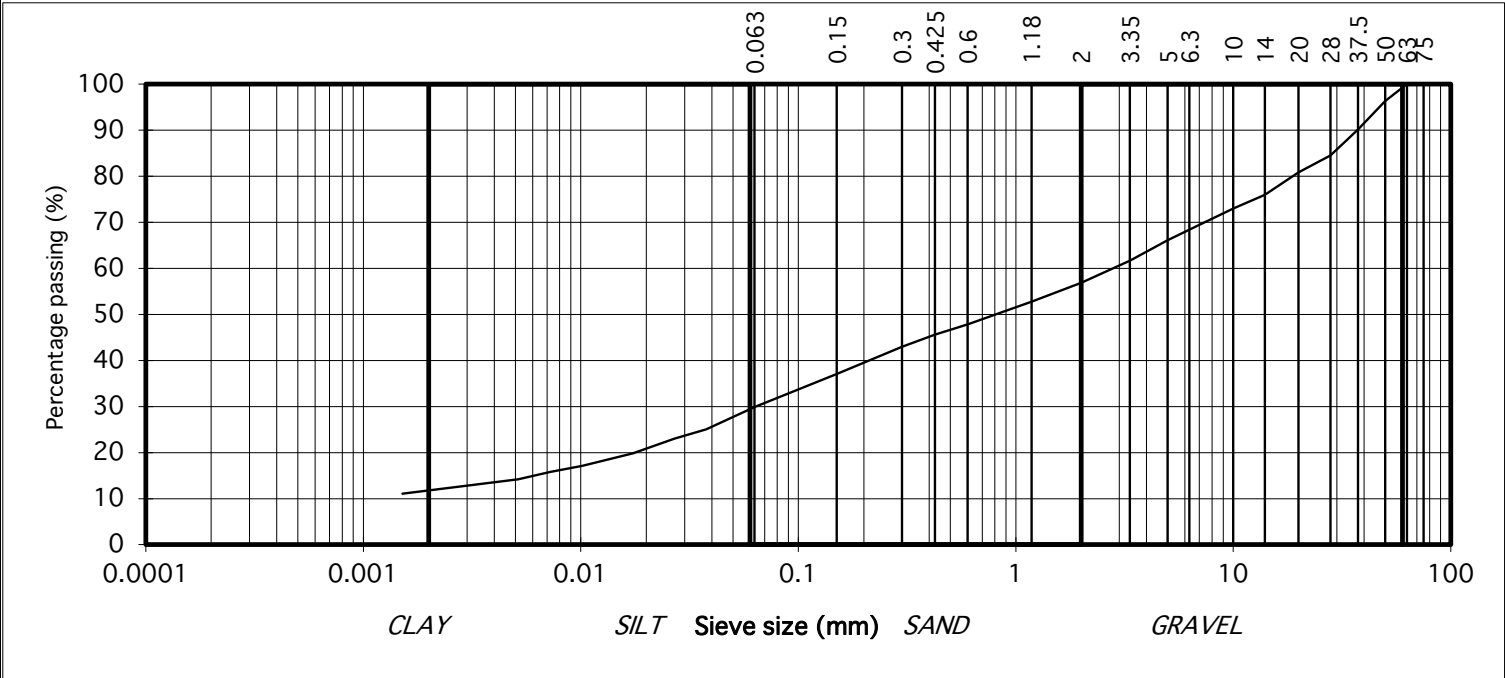
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167015						
			Contract Name :	Cooloo WF								
			BH/TP No.	TP09								
			Sample No.*	AA233325	Lab. Sample No.	A25/0592						
			Sample Type:	B								
			Depth* (m)	0.50	Customer:	Venterra						
			Date Received	25/02/2025	Date Testing started	25/02/2025						
			Description:	Brown slightly sandy, gravelly, CLAY								
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4								
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.									
63	100											
50	96											
37.5	90											
28	85											
20	81											
14	76											
10	73	GRAVEL										
6.3	68											
5	66											
3.35	62											
2	57											
1.18	53											
0.6	48											
0.425	46	SAND										
0.3	43											
0.15	37											
0.063	30											
0.038	25											
0.027	23											
0.017	20											
0.010	17	SILT/CLAY										
0.007	16											
0.005	14											
0.002	11											

Sieve size (mm)	Percentage passing (%)
0.075	11
0.15	16
0.3	20
0.6	23
1.18	25
2.5	27
5.0	30
10	37
20	43
40	48
75	53
150	57
300	62
600	66
1250	68
2500	73
5000	76
10000	81
20000	85
40000	90
75000	96
150000	100



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167016						
			Contract Name :	Cooloo WF								
			BH/TP No.	TP09								
			Sample No.*	AA233326	Lab. Sample No.	A25/0593						
			Sample Type:	B								
			Depth* (m)	1.50	Customer:	Venterra						
			Date Received	25/02/2025	Date Testing started	25/02/2025						
			Description:	Brown sandy, slightly gravelly, CLAY								
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4								
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.									
63	100											
50	100											
37.5	100											
28	100											
20	100											
14	99	GRAVEL										
10	97											
6.3	93											
5	91											
3.35	88											
2	85											
1.18	81	SAND										
0.6	77											
0.425	74											
0.3	70											
0.15	60											
0.063	47											
		SILT/CLAY										

100	0.063	0.15	0.3	0.425	0.6	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63
Percentage passing (%)																	
90																	
80																	
70																	
60																	
50																	
40																	
30																	
20																	
10																	
0																	
0.0001	0.001	0.01	0.1	1	10	100											
CLAY			SILT		Sieve size (mm)		SAND		GRAVEL								



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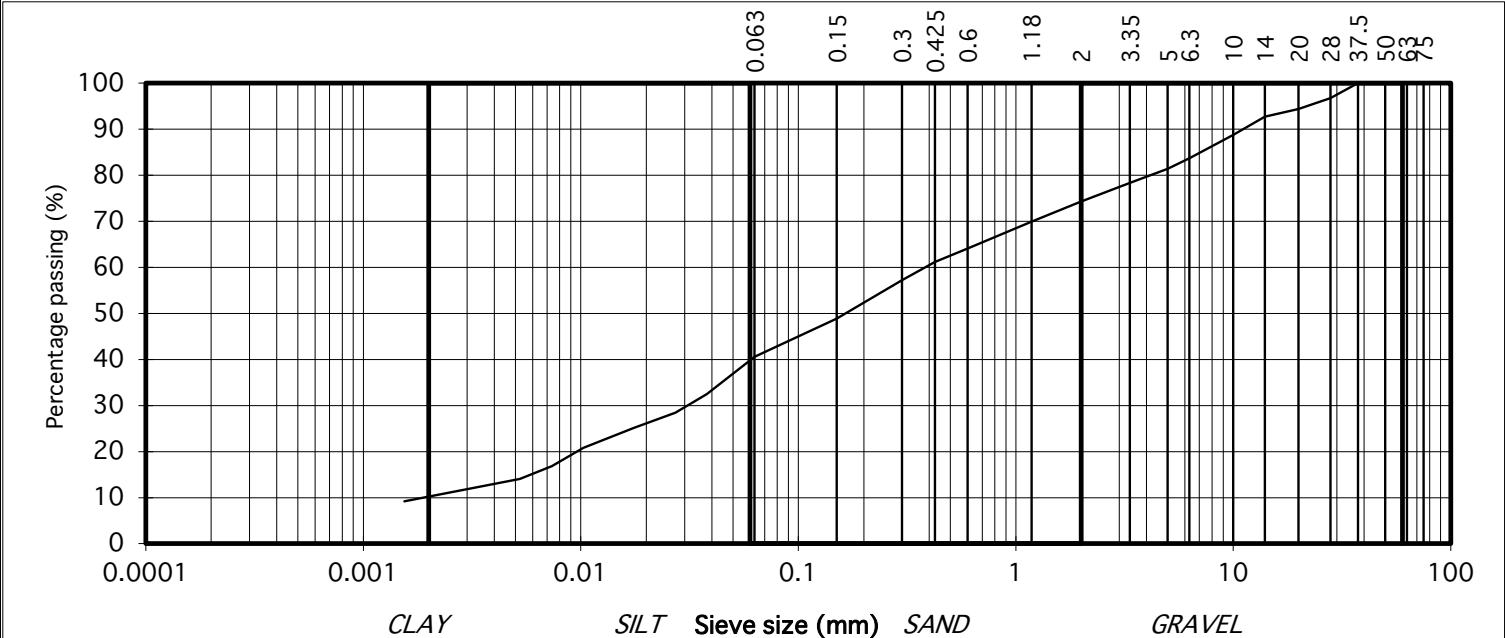
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

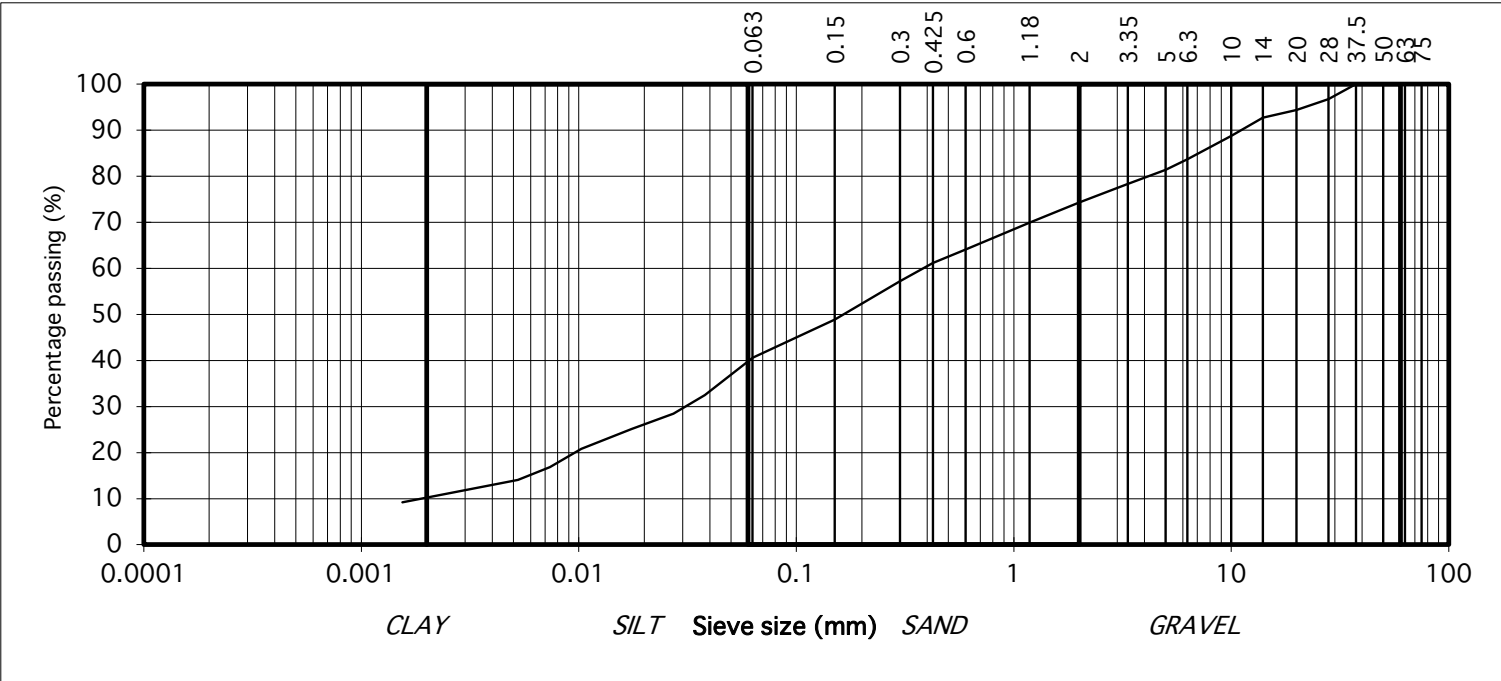
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167017	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Cooloo WF			
			BH/TP No.	TP10			
			Sample No.*	AA233313	Lab. Sample No.	A25/0594	
			Sample Type:	B			
			Depth* (m)	0.40	Customer:	Venterra	
			Date Received	25/02/2025	Date Testing started	25/02/2025	
			Description:	Brown slightly sandy, slightly gravelly, SILT			
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4			
75	100	COBBLES					
63	100						
50	100						
37.5	100						
28	97						
20	94	GRAVEL					
14	93						
10	89						
6.3	84						
5	81						
3.35	78	SAND					
2	74						
1.18	70						
0.6	64						
0.425	61						
0.3	57	SILT/CLAY					
0.15	49						
0.063	41						
0.038	32						
0.027	28						
0.017	25						
0.010	21						
0.007	17						
0.005	14						
0.002	9						

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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TEST REPORT

Determination of Particle Size Distribution

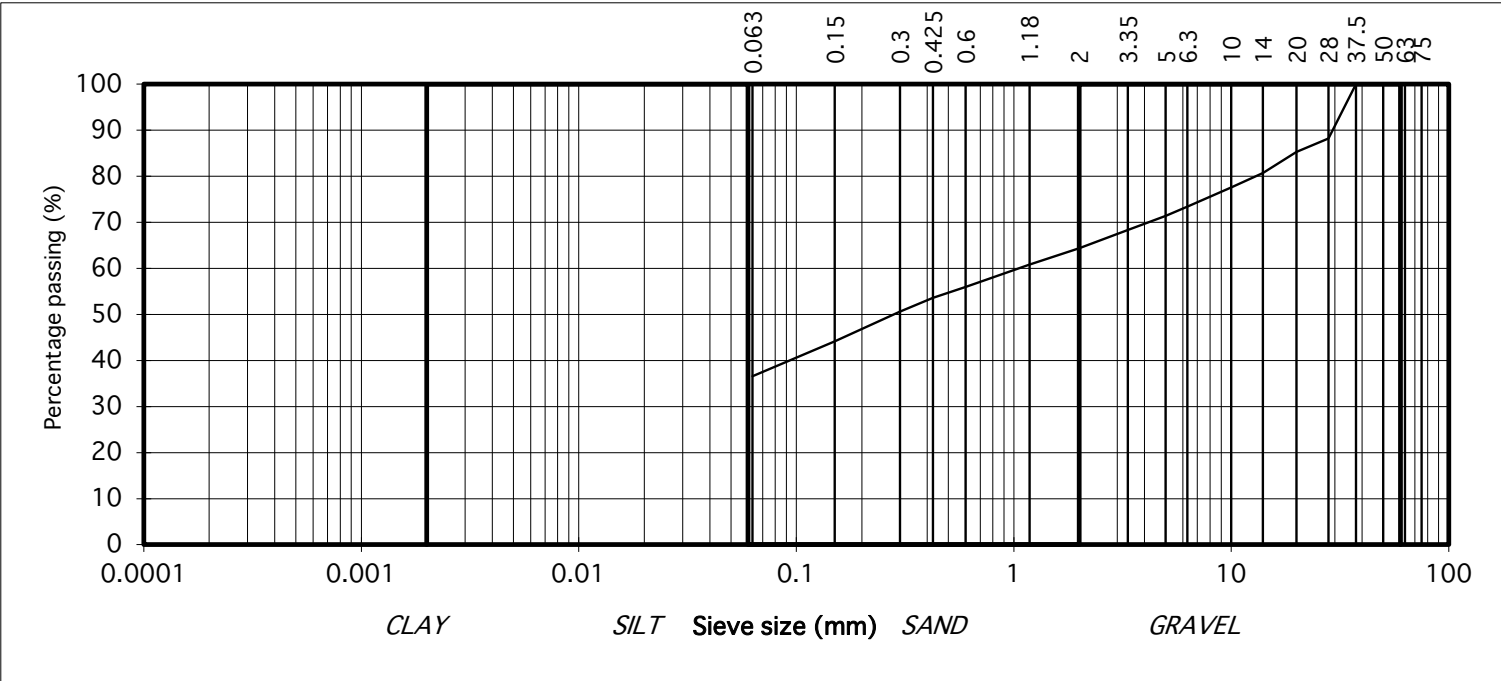
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167018	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.			
			Contract Name :	Cooloo WF						
			BH/TP No.	TP10						
			Sample No.*	AA233314	Lab. Sample No.	A25/0595				
			Sample Type:	B						
			Depth* (m)	2.00	Customer:	Venterra				
			Date Received	25/02/2025	Date Testing started	25/02/2025				
			Description:	Brown slightly sandy, gravelly, CLAY						
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Sample size did not meet the requirements of BS1377						
63	100									
50	100									
37.5	100									
28	88									
20	85	GRAVEL								
14	81									
10	78									
6.3	73									
5	71									
3.35	68	SAND								
2	64									
1.18	61									
0.6	56									
0.425	54									
0.3	51	SILT/CLAY								
0.15	44									
0.063	37									

Sieve size (mm)	Percentage passing (%)
0.063	37
0.15	44
0.3	51
0.425	54
0.6	56
1.18	61
2	64
3.35	68
5	71
6.3	73
10	78
14	81
20	85
28	88
37.5	100
50	100
75	100

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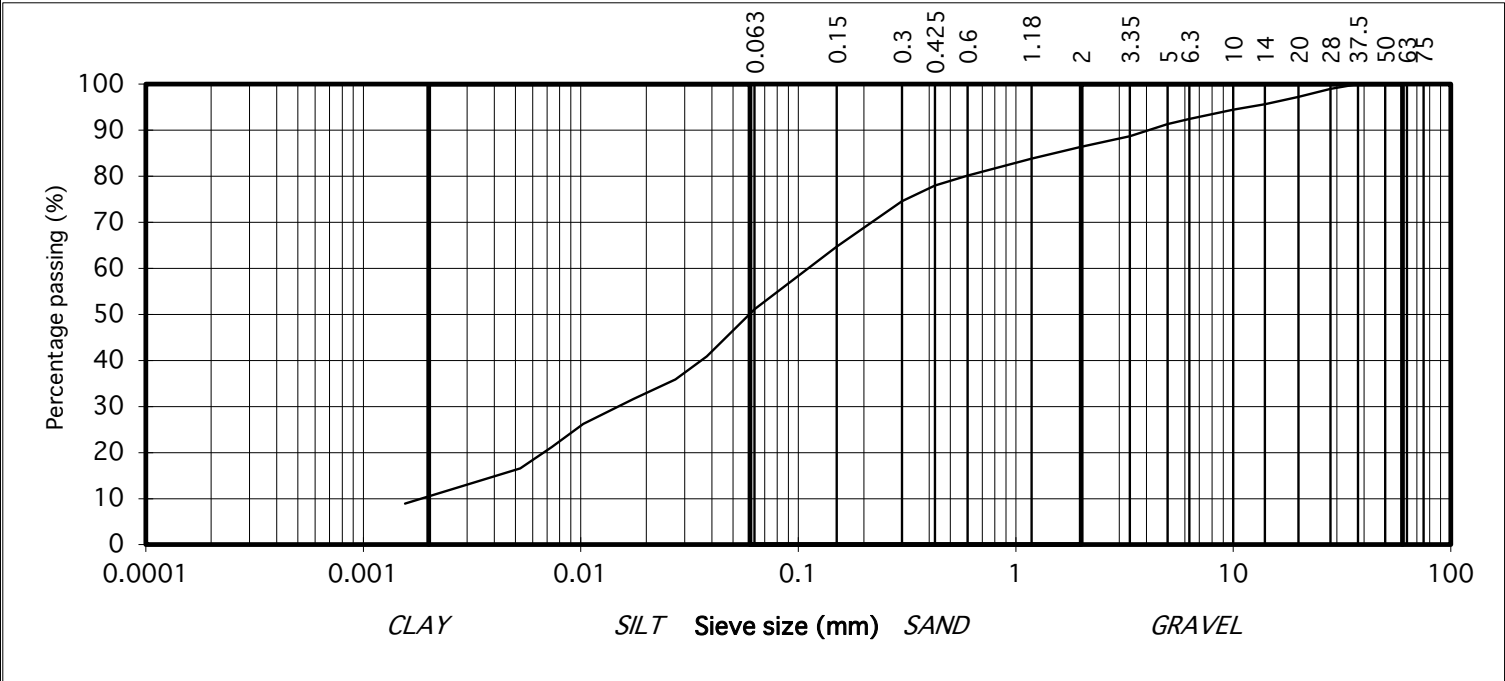
TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167019		
			Contract Name :	Cooloo WF				
			BH/TP No.	TP11				
			Sample No.*	AA233307	Lab. Sample No.	A25/0596		
			Sample Type:	B				
			Depth* (m)	0.80	Customer:	Venterra		
			Date Received	25/02/2025	Date Testing started	25/02/2025		
			Description:	Brown sandy, slightly gravelly, SILT				
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4				
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.					
63	100							
50	100							
37.5	100							
28	99							
20	97							
14	96							
10	94	GRAVEL						
6.3	92							
5	91							
3.35	89							
2	86							
1.18	84							
0.6	80							
0.425	78	SAND						
0.3	75							
0.15	65							
0.063	51							
0.038	41							
0.027	36							
0.017	32							
0.010	26	SILT/CLAY						
0.007	21							
0.005	17							
0.002	9							



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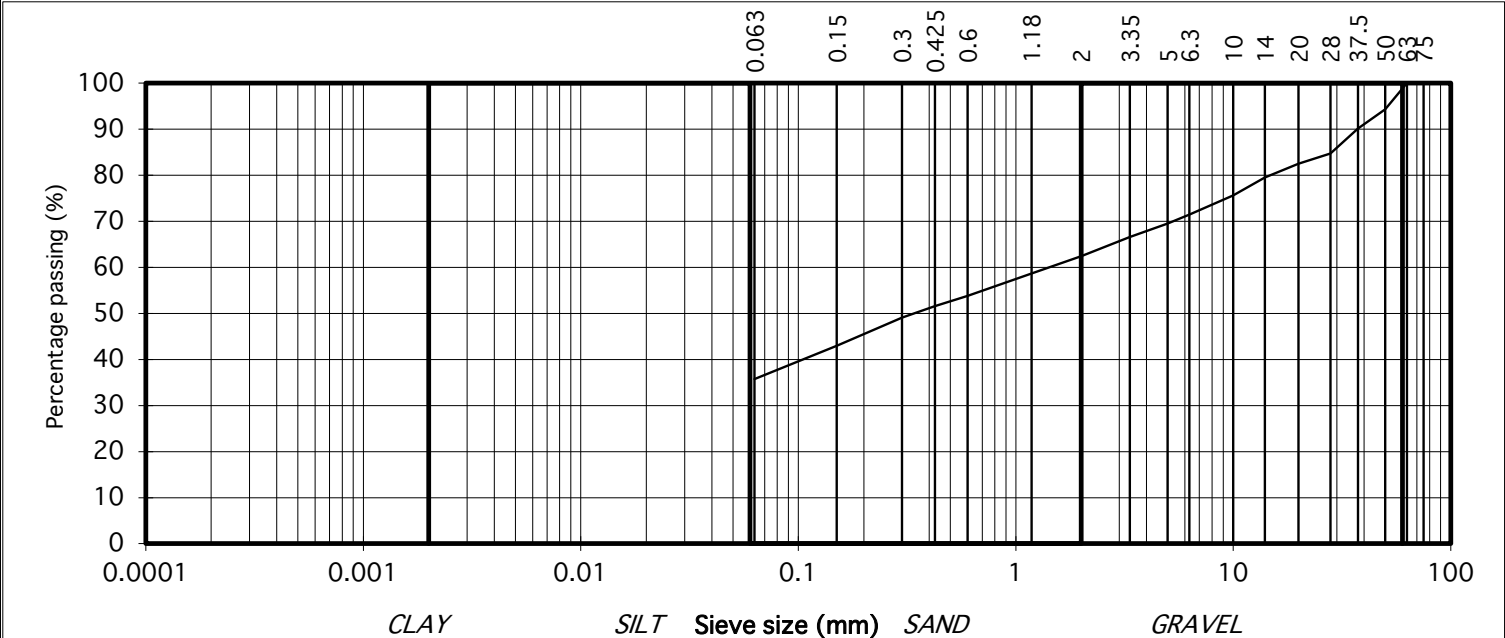
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167020	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Cooloo WF			
			BH/TP No.	TP11			
			Sample No.*	AA233308	Lab. Sample No.	A25/0597	
			Sample Type:	B			
			Depth* (m)	2.00	Customer:	Venterra	
			Date Received	25/02/2025	Date Testing started	25/02/2025	
			Description:	Grey slightly sandy, gravelly, CLAY			
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4			
63	100						
50	94						
37.5	90						
28	85						
20	83						
14	79						
10	76						
6.3	71	GRAVEL					
5	70						
3.35	67						
2	62						
1.18	59						
0.6	54						
0.425	52						
0.3	49						
0.15	43	SAND					
0.063	36						
		SILT/CLAY					

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

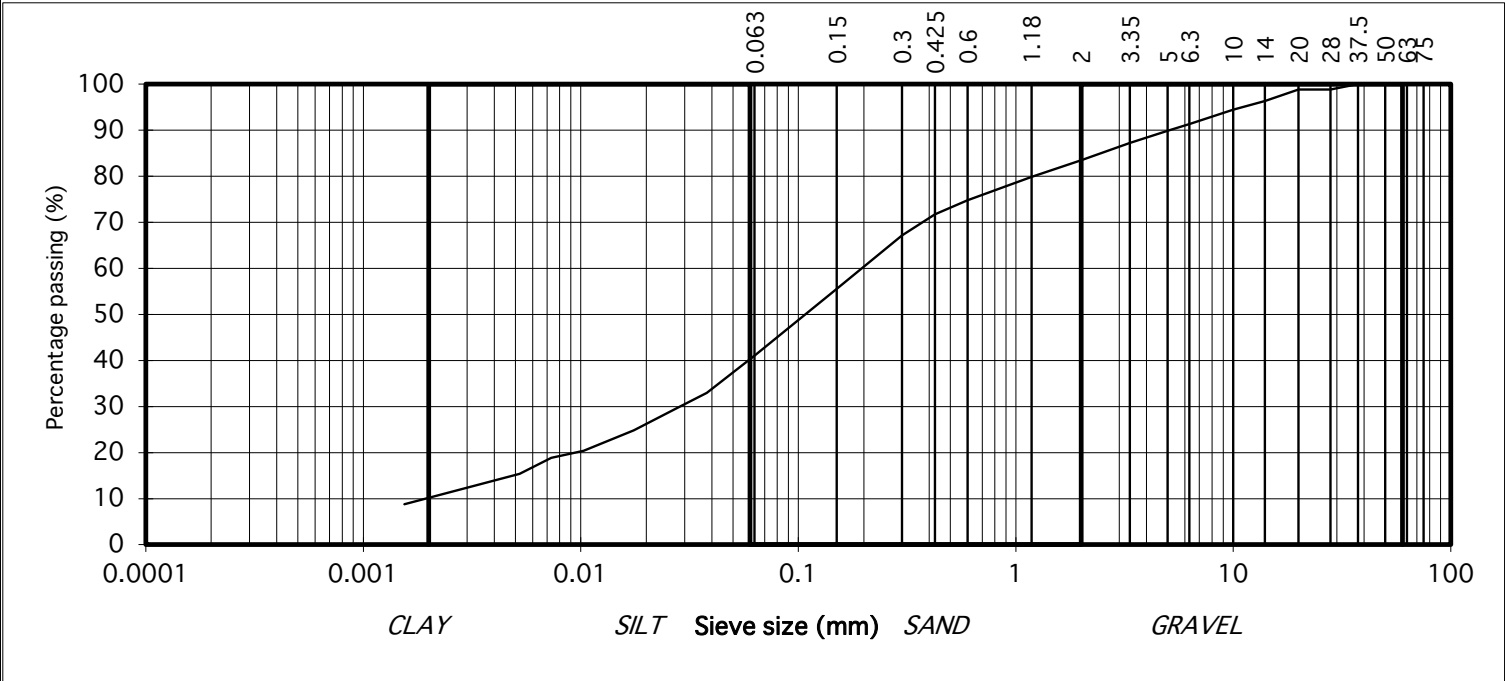
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167021		
			Contract Name :	Cooloo WF				
			BH/TP No.	TP12				
			Sample No.*	AA233311	Lab. Sample No.	A25/0598		
			Sample Type:	B				
			Depth* (m)	0.80	Customer:	Venterra		
			Date Received	25/02/2025	Date Testing started	25/02/2025		
			Description:	Brown sandy, slightly gravelly, SILT				
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4				
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.					
63	100							
50	100							
37.5	100							
28	99							
20	99							
14	96							
10	94	GRAVEL						
6.3	91							
5	90							
3.35	87							
2	84							
1.18	80							
0.6	75							SAND
0.425	72							
0.3	67							
0.15	56							
0.063	41							
0.038	33							
0.027	30	SILT/CLAY						
0.018	25							
0.010	20							
0.007	19							
0.005	15							
0.002	9							

Sieve size (mm)	Percentage passing (%)
0.075	8
0.15	20
0.3	30
0.425	40
0.6	60
1.18	75
2	85
3.35	90
5	95
10	100
20	100
40	100
60	100
75	100



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167022 <th></th>																																							
			Contract Name :	Cooloo WF																																									
			BH/TP No.	TP12																																									
			Sample No.*	AA233312	Lab. Sample No.	A25/0599																																							
			Sample Type:	B																																									
			Depth* (m)	2.40	Customer:	Venterra																																							
			Date Received	25/02/2025	Date Testing started	25/02/2025																																							
			Description:	Brown slightly sandy, slightly gravelly, SILT																																									
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4																																									
75	100	COBBLES	<table><tr><th>Sieve size (mm)</th><th>Percentage passing (%)</th></tr><tr><td>75</td><td>100</td></tr><tr><td>63</td><td>100</td></tr><tr><td>50</td><td>100</td></tr><tr><td>37.5</td><td>97</td></tr><tr><td>28</td><td>95</td></tr><tr><td>20</td><td>92</td></tr><tr><td>14</td><td>86</td></tr><tr><td>10</td><td>81</td></tr><tr><td>6.3</td><td>76</td></tr><tr><td>5</td><td>74</td></tr><tr><td>3.35</td><td>71</td></tr><tr><td>2</td><td>67</td></tr><tr><td>1.18</td><td>63</td></tr><tr><td>0.6</td><td>58</td></tr><tr><td>0.425</td><td>56</td></tr><tr><td>0.3</td><td>53</td></tr><tr><td>0.15</td><td>46</td></tr><tr><td>0.063</td><td>37</td></tr></table>					Sieve size (mm)	Percentage passing (%)	75	100	63	100	50	100	37.5	97	28	95	20	92	14	86	10	81	6.3	76	5	74	3.35	71	2	67	1.18	63	0.6	58	0.425	56	0.3	53	0.15	46	0.063	37
Sieve size (mm)	Percentage passing (%)																																												
75	100																																												
63	100																																												
50	100																																												
37.5	97																																												
28	95																																												
20	92																																												
14	86																																												
10	81																																												
6.3	76																																												
5	74																																												
3.35	71																																												
2	67																																												
1.18	63																																												
0.6	58																																												
0.425	56																																												
0.3	53																																												
0.15	46																																												
0.063	37																																												
63	100																																												
50	100																																												
37.5	97																																												
28	95																																												
20	92																																												
14	86																																												
10	81																																												
6.3	76																																												
5	74																																												
3.35	71																																												
2	67																																												
1.18	63																																												
0.6	58																																												
0.425	56																																												
0.3	53																																												
0.15	46																																												
0.063	37																																												
		SAND																																											
		SILT/CLAY																																											

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

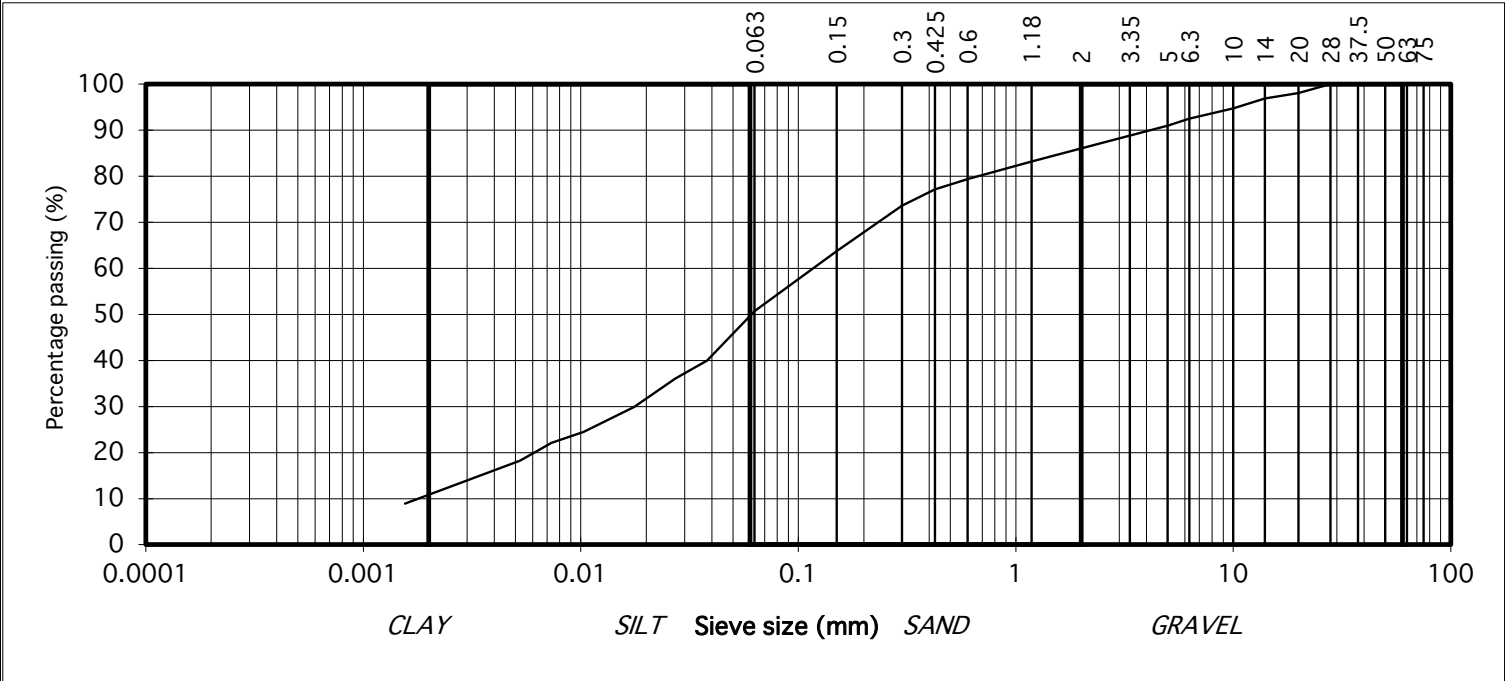
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167023						
			Contract Name :	Cooloo WF								
			BH/TP No.	TP13								
			Sample No.*	AA233329	Lab. Sample No.	A25/0600						
			Sample Type:	B								
			Depth* (m)	0.40	Customer:	Venterra						
			Date Received	25/02/2025	Date Testing started	26/02/2025						
			Description:	Brown sandy, slightly gravelly, SILT								
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4								
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.									
63	100											
50	100											
37.5	100											
28	100											
20	98											
14	97											
10	95	GRAVEL										
6.3	93											
5	91											
3.35	89											
2	86											
1.18	83											
0.6	79											
0.425	77	SAND										
0.3	74											
0.15	64											
0.063	51											
0.038	40											
0.027	36											
0.018	30											
0.010	24	SILT/CLAY										
0.007	22											
0.005	18											
0.002	9											

Sieve Size (mm)	Percentage Passing (%)
75	100
63	100
50	100
37.5	100
28	100
20	98
14	97
10	95
6.3	93
5	91
3.35	89
2	86
1.18	83
0.6	79
0.425	77
0.3	74
0.15	64
0.063	51
0.038	40
0.027	36
0.018	30
0.010	24
0.007	22
0.005	18
0.002	9



IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
		20/03/25	1 of 1

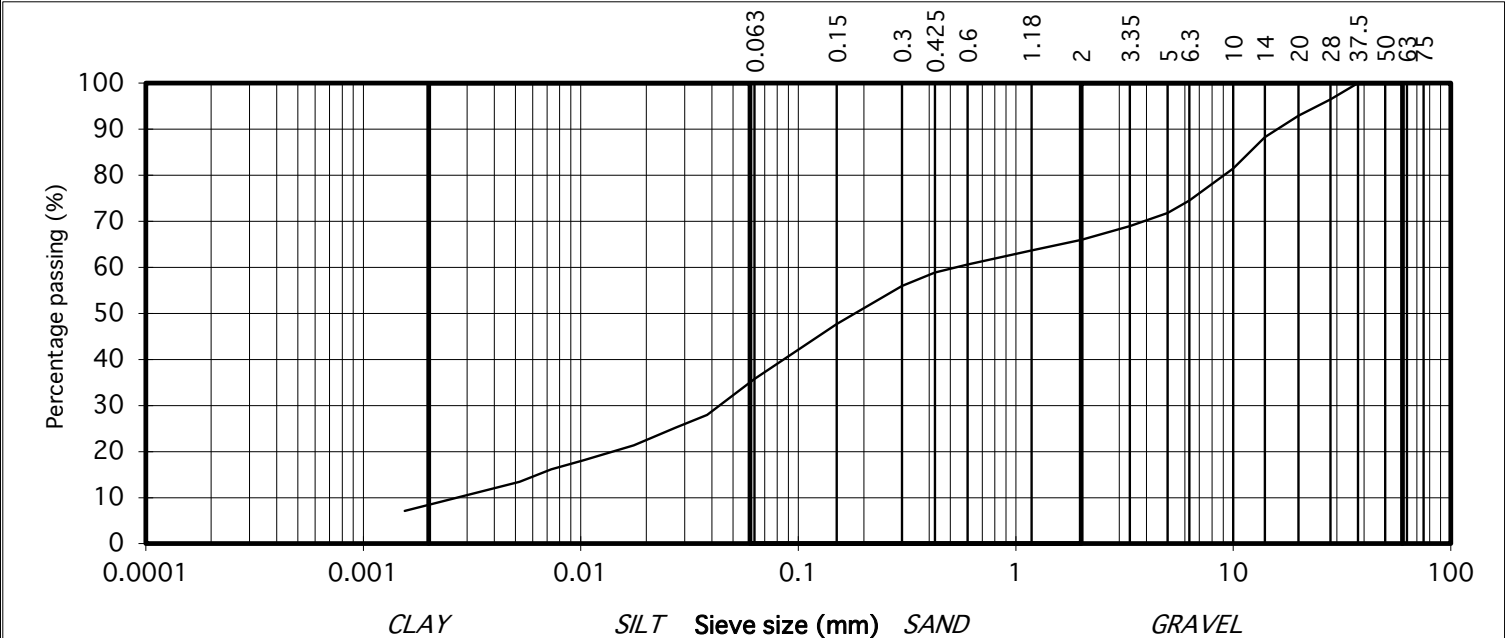
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167025	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Cooloo WF			
			BH/TP No.	TP14			
			Sample No.*	AA233319	Lab. Sample No.	A25/0602	
			Sample Type:	B			
			Depth* (m)	0.50	Customer:	Venterra	
			Date Received	25/02/2025	Date Testing started	26/02/2025	
			Description:	Grey slightly sandy, slightly gravelly, SILT			
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4			
75	100	COBBLES					
63	100						
50	100						
37.5	100						
28	96						
20	93						
14	88	GRAVEL					
10	81						
6.3	75						
5	72						
3.35	69						
2	66						
1.18	64	SAND					
0.6	61						
0.425	59						
0.3	56						
0.15	48						
0.063	36						
0.038	28	SILT/CLAY					
0.027	25						
0.018	21						
0.010	18						
0.007	16						
0.005	13						
0.002	7						

IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
		20/03/25	1 of 1
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)			

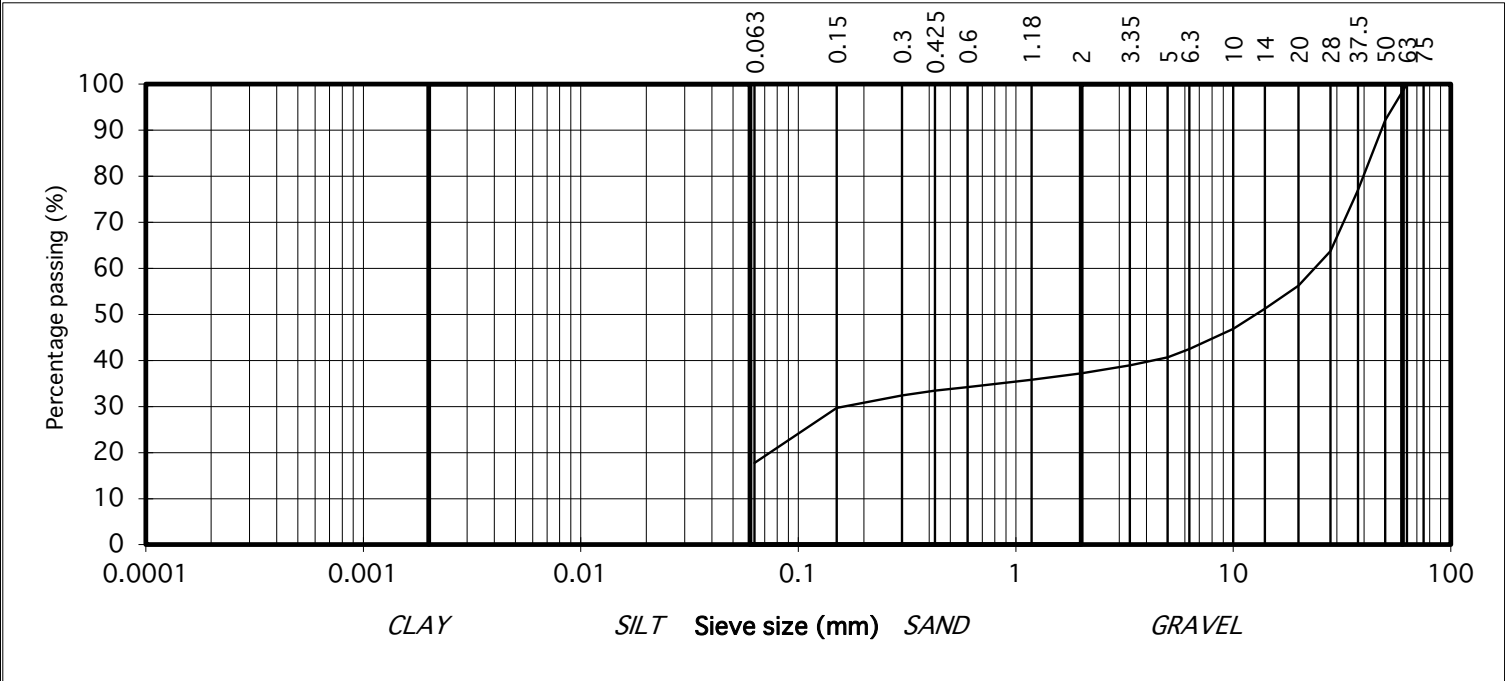
TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167026	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Cooloo WF			
			BH/TP No.	TP14			
			Sample No.*	AA233320	Lab. Sample No.	A25/0603	
			Sample Type:	B			
			Depth* (m)	0.70	Customer:	Venterra	
			Date Received	25/02/2025	Date Testing started	26/02/2025	
			Description:	Brown silty, sandy, GRAVEL			
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4			
75	100	COBBLES					
63	100						
50	92						
37.5	77						
28	64						
20	56	GRAVEL					
14	51						
10	47						
6.3	43						
5	41						
3.35	39	SAND					
2	37						
1.18	36						
0.6	34						
0.425	33						
0.3	32	SILT/CLAY					
0.15	30						
0.063	18						



IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
		20/03/25	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	25860	Report No.	R167027						
			Contract Name :	Cooloo WF								
			BH/TP No.	TP15								
			Sample No.*	AA233303	Lab. Sample No.	A25/0604						
			Sample Type:	B								
			Depth* (m)	1.00	Customer:	Venterra						
			Date Received	25/02/2025	Date Testing started	26/02/2025						
			Description:	Brown slightly clayey/silty, very gravelly, SAND								
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4 Part in Sample								
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.									
63	100											
50	100											
37.5	100											
28	100											
20	100											
14	100											
10	100											
6.3	100	GRAVEL										
5	100											
3.35	85											
2	59											
1.18	41											
0.6	25											
0.425	19											
0.3	14											
0.15	7	SAND										
0.063	1											
		SILT/CLAY										

Percentage passing (%)

Sieve size (mm)

CLAY SILT SAND GRAVEL

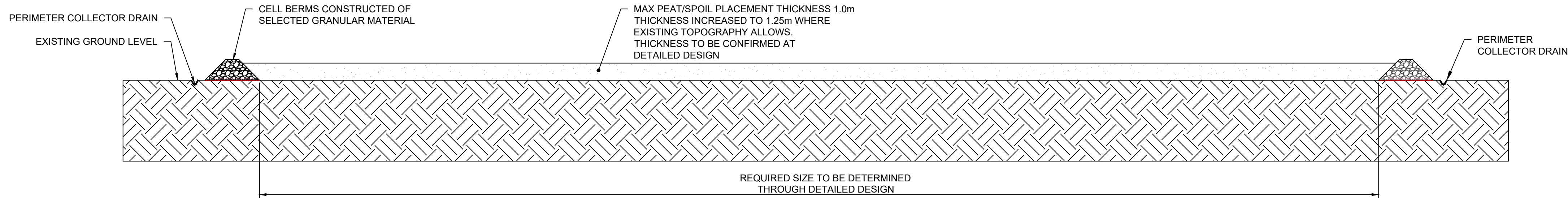
Sieve Size (mm)	Percentage Passing (%)
0.063	0
0.15	5
0.3	14
0.425	19
0.6	25
1.18	41
2	59
3.35	85
75	100



IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
		20/03/25	1 of 1

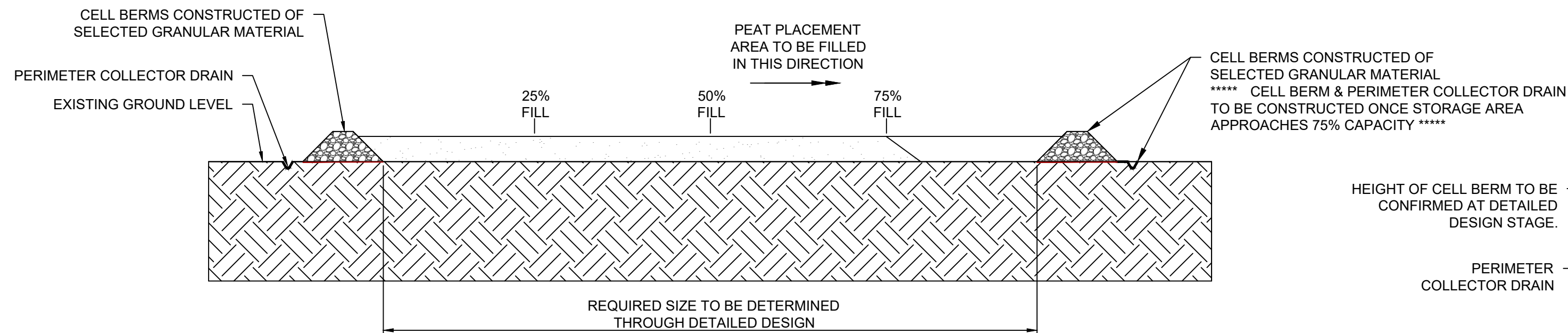
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

APPENDIX B PEAT AND SPOIL REPOSITORY DETAILS



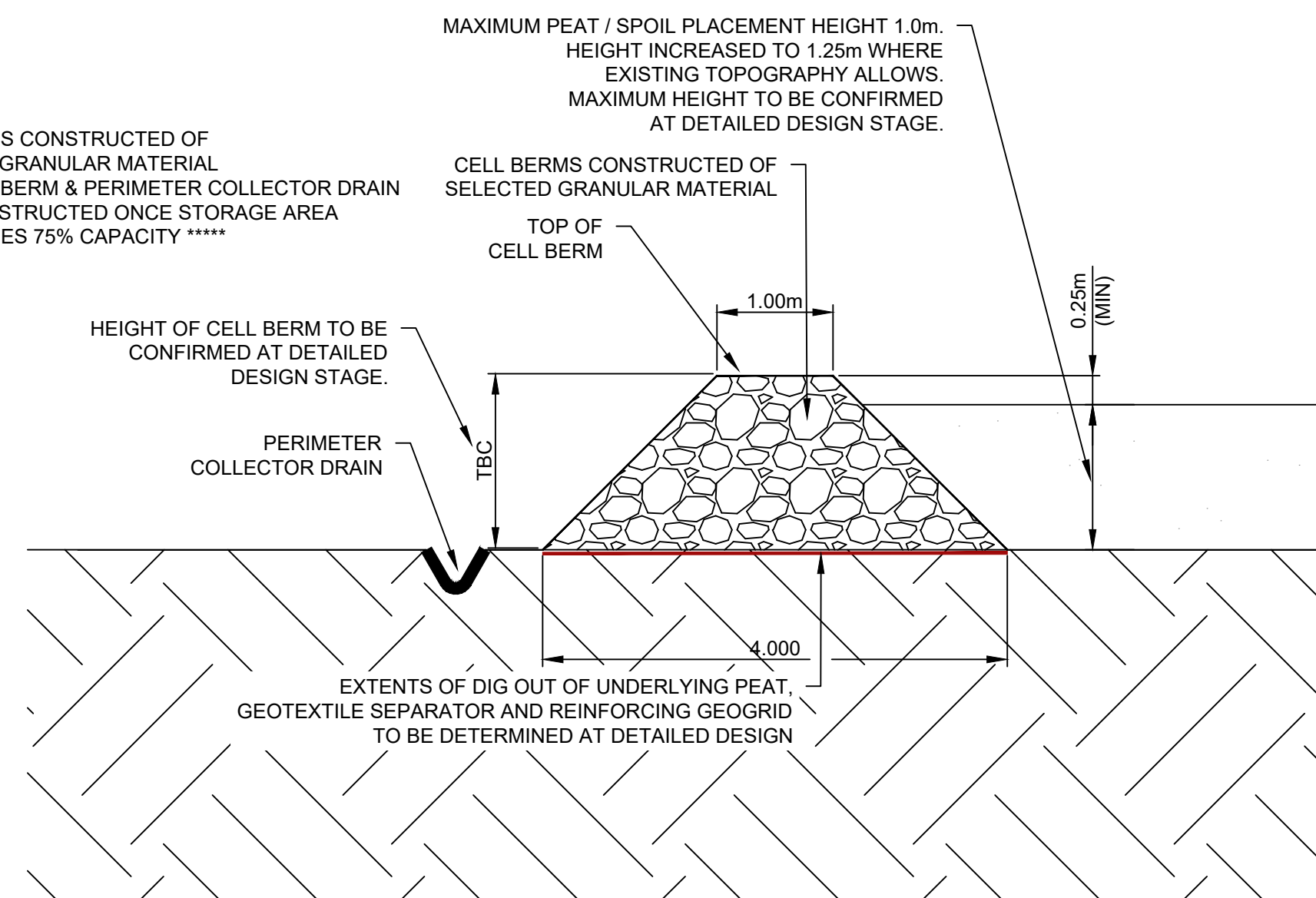
PEAT/SPOIL REPOSITORY AREA - TYPICAL SECTION A-A

SCALE 1:200



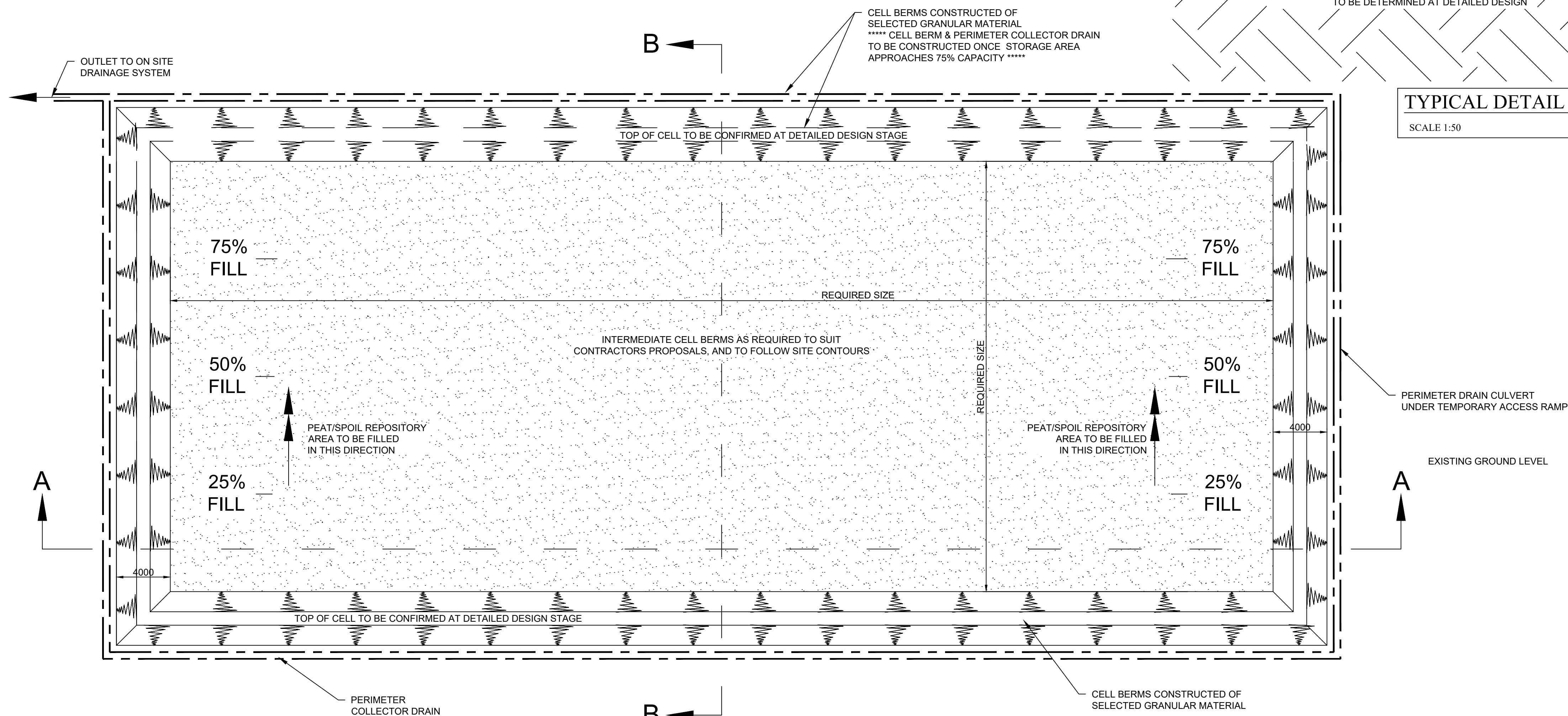
PEAT/SPOIL REPOSITORY AREA - TYPICAL SECTION B-B

SCALE 1:200



TYPICAL DETAIL - CELL BERM

SCALE 1:50



PEAT/ SPOIL REPOSITORY AREA

SCALE 1:200

NOTES:

1. THIS DRAWING IS FOR PLANNING AND ENVIRONMENTAL IMPACT ASSESSMENT PURPOSES AND SHOULD NOT BE USED AS DETAILED DESIGN OR FOR CONSTRUCTION.
2. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE STATED.
3. DO NOT SCALE FROM THIS DRAWING.
4. ALL PLACED MATERIAL WILL BE ALLOWED TO REVEGETATE NATURALLY FROM THE EXTENSIVE SEED SOURCE OF THE PLANTS THAT HAVE ALREADY COLONISED IN THE AREA. ALTERNATIVELY AND POSSIBLY IN ADDITION, SEEDING OF THE PLACED SPOIL COULD BE CARRIED OUT WHICH WOULD AID IN STABILISING THE PLACED SPOIL IN THE LONG TERM.
5. WHERE POSSIBLE, THE AGROTELM SHALL BE STORED WITH THE VEGETATED PART OF THE SOD FACING THE RIGHT WAY UP TO ENCOURAGE GROWTH OF PLANTS AND VEGETATION AT THE SURFACE OF THE STORED PEAT WITHIN THE PEAT STORAGE AREAS.
6. BOG MATS TO BE PLACED PEAT WHERE NECESSARY TO FACILITATE PLANT & MACHINERY ACCESS OVER SOFT GROUND.

REV: S2-P01 DATE: 24/06/25 DRAWN BY: RR CHECKED BY: CE

DESCRIPTION: ISSUED FOR INFORMATION

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ISSUED AS: FOR INFORMATION

CLIENT:
MKO

PROJECT TITLE:
COOLOO
WIND FARM

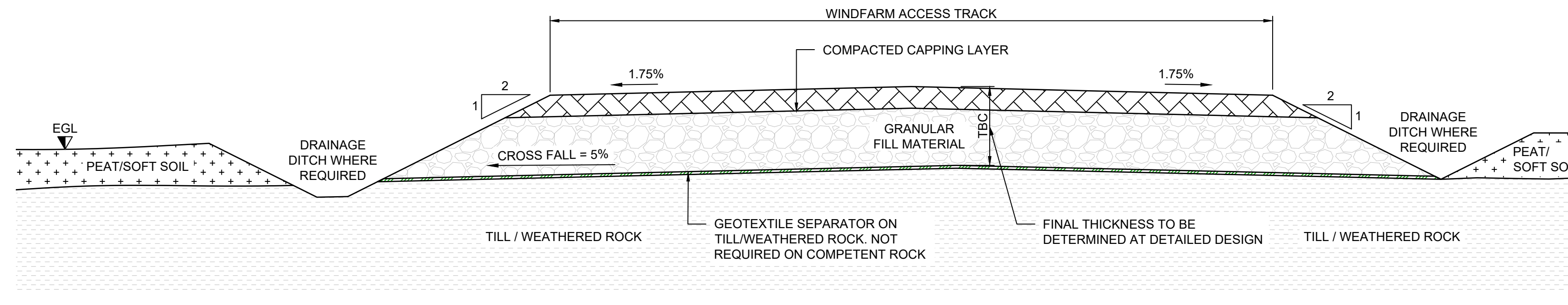
DRAWING No: 22098-GDG-ZZ-XX-DR-C-0101

Revision: -S2-P01

DRAWING TITLE:
PEAT AND SPOIL
REPOSITORY AREA
TYPICAL DETAILS

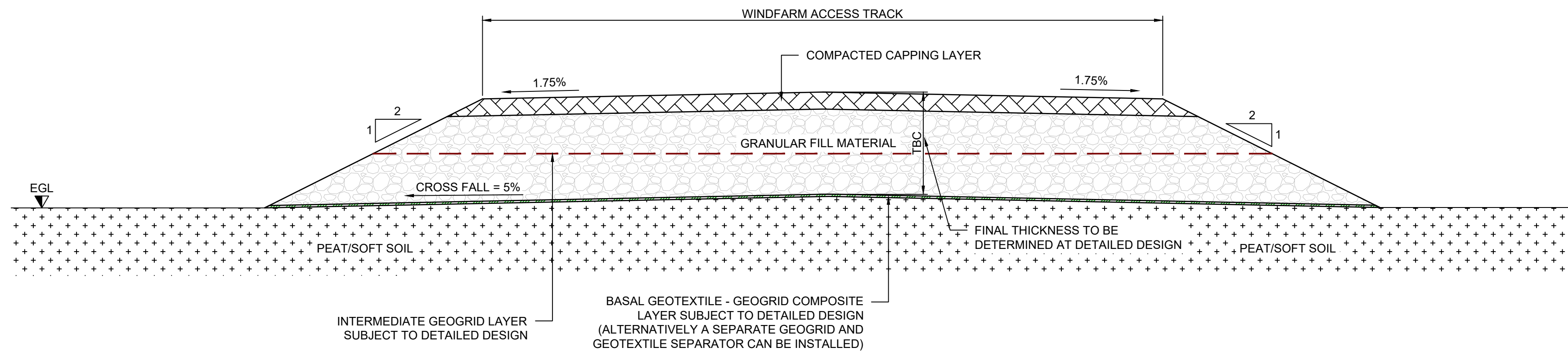
SCALE: N.T.S. SHEET SIZE: A1 DATE: 24/06/2025
DRAWN BY: RR CHECKED BY: CE APPROVED BY: AL

APPENDIX C ACCESS TRACK CONSTRUCTION DETAILS



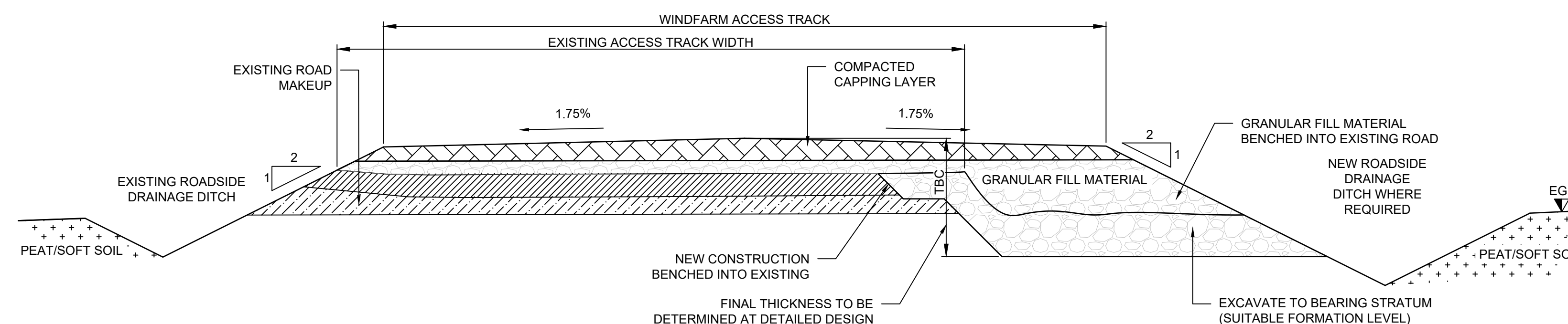
SECTION THROUGH ACCESS TRACK NEW CONSTRUCTION: FOUNDED - DETAIL 01

SCALE: 1:25



SECTION THROUGH ACCESS TRACK NEW CONSTRUCTION: FLOATED - DETAIL 02

SCALE: 1:25



SECTION THROUGH WIDENING OF EXISTING ACCESS TRACK: FOUNDED - DETAIL 03

SCALE: 1:25

NOTES:

1. THIS DRAWING IS FOR PLANNING AND ENVIRONMENTAL IMPACT ASSESSMENT PURPOSES AND SHOULD NOT BE USED AS DETAILED DESIGN OR FOR CONSTRUCTION.
2. DO NOT SCALE FROM DRAWINGS.
3. THE STRENGTH OF THE SUBFORMATION SOILS TO BE ASSESSED BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION / PLACEMENT OF FILL.
4. DRAINAGE TO BE PROVIDED TO PREVENT WATER DEGRADATION OF THE SUBFORMATION SOILS IN-LINE WITH DRAINAGE STRATEGY.

HEALTH & SAFETY:

1. NO OPERATIVES TO ACCESS ANY UNSUPPORTED TRENCHES. TRENCHES TO BE ADEQUATELY BATTERED BACK OR SUPPORTED WHERE NECESSARY. SAFE TEMPORARY BATTER ANGLES TO BE ASSESSED IN ACCORDANCE WITH CIRIA REPORT 97 "TRENCHING PRACTICE".

REV: S2-P01	DATE: 29/08/25	DRAWN BY: PF	CHECKED BY: DM
DESCRIPTION:	ISSUED FOR INFORMATION		

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GAVIN & DOHERTY
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ISSUED AS:	FOR INFORMATION
CLIENT:	



PROJECT TITLE:	COOLOO WIND FARM
DRAWING No:	22098-GDG-ZZ-XX-DR-C-0100
Revision:	-S2-P01

DRAWING TITLE:	ACCESS ROAD AND CABLE TRENCH STANDARD DETAILS
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SCALE: 1:25	SHEET SIZE: A1	DATE: 29/08/2025
DRAWN BY: PF	CHECKED BY: DM	APPROVED BY: TO'S

GLOBAL PROJECT REACH



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