Foel Fach Wind Farm Limited.

Foel Fach Energy Wind Farm - Environmental Statement Volume III

Appendix 2.1: Outline Construction Environmental Management Plan

Project Reference: 664094

DECEMBER 2025

Energy for generations

Coriolis Energy

RSK GENERAL NOTES

Project No.: 664094

Title: Foel Fach Wind Farm – Outline Construction Environmental Management Plan

Client: Foel Fach Wind Fram Limited.

Date: December 2025

Office: Bristol

Status: Version 2.0

CONTENTS

TABLES

1 INTRODUCTION

1.1.1 Foel Fach Wind Farm Ltd. (hereafter referred to as 'the Applicant'), a project company co-owned by development partners Coriolis Energy and ESB Asset Developments, is seeking to obtain full planning permission for the construction, operation and decommissioning of the Foel Fach Wind Farm (hereafter referred to as the 'Proposed Development'), located approximately 3 km north of the town of Bala, Gwynedd. Gwynedd.

1.1.2 This Outline Construction Environmental Management Plan (OCEMP) has been prepared to inform the preparation of a full CEMP by the appointed construction contractor in the preconstruction phase. The OCEMP is a live document and is subject to change throughout the project. Where necessary, agreement to the changes will be sought from the Applicant and statutory consultees.

1.2 Aim

1.2.1 The aim of this CEMP is to provide environmental management guidelines so the construction works outlined in this document do not result in unacceptable environmental impacts. In particular, the CEMP shall:

- Provide a mechanism for the implementation of committed mitigation against potentially adverse environmental impacts;
- Provide assurance to third parties that their requirements with respect to environmental performance will be met; and
- Provide a framework for compliance auditing and inspection to enable the project to be assured that its aims with respect to environmental performance are being met.

1.2.2 Subject to receiving planning approval by the Welsh Ministers via the Developments of National Significance (DNS) regime the appointed Principal Contractor will use this CEMP to guide the development of a detailed site-specific (full) CEMP. It is anticipated that the development of a full CEMP would be secured by a condition of the planning permission, should it be granted. Preparation by the Principal Contractor of the full CEMP and its approval by Gwynedd Council would be required to discharge the planning condition.

1.3 Regulatory Requirements

1.3.1 All site works shall be undertaken in compliance with this OCEMP and with all applicable legal and regulatory requirements. It is the full responsibility of the Principal Contractor to ensure their works do not contravene legal requirements, and adherence to this OCEMP alone cannot be a full defence regarding legal action against the Principal Contractor.

1.3.2 The Principal Contractor shall comply as necessary with the Construction (Design and Management) Regulations 2015 (CDM) and shall comply with all applicable

pollution control regulations in which case the Principal Contractor shall obtain and keep current any necessary consent, authorisation, approval or permission.

1.3.3 The Principal Contractor shall, where relevant, undertake construction works in accordance with current good practice guidance, including:

- Planning Policy Wales, Edition 12 (Welsh Government, 2024);
- Technical Advice Notes;
- Gwynedd Council (GC) requirements;
- Environmental Good Practice on Site Guidance (C811, fifth edition, Ciria, 2023);
- Control of Dust from Construction Sites (BRE DTi Feb 2003);
- British Standards 5228-1:2009+A1:2014: 'Code of Practice for noise and vibration control on construction and open sites – Noise';
- Institute of Lighting Professionals. Guidance Notes for the Reduction of Obtrusive Light. ILP GN01/21; and
- Pollution prevention guidance set out at: https://www.gov.uk/guidance/pollution-prevention-for-businesses.

1.4 Additional Information

1.4.1 The following project specific information has been used to develop this OCEMP:

- Foel Fach Wind Farm Environmental Statement (ES) (RSK Environment Ltd, 2025); and
- Planning Policy Wales, Edition 12 (Welsh Government, 2024).

1.5 Associated Plans

1.5.1 The following management plans associated with this OCEMP will be prepared and implemented prior to construction works:

- Waste Management Plan
- Pollution Prevention Plan
- Dust Management Plan
- Soil Management Plan (an Outline Soil Management Plan is provided in **ES Volume III, Appendix 7.9: Outline Soil Management Plan**)
- Surface Water Management Plan
- Access Management Plan (an Outline Access Management Plan is provided in **ES Volume III, Appendix 11.1: Transport Assessment**)
- Species and Habitat Protection Plan
- Emergency Preparedness and Response
- Breeding Bird Protection Plan
- Peat Management Plan (an outline Peat Management Plan is provided in **ES Volume III, Appendix 7.4: Peat Management Plan**), and
- A Construction Traffic Management Plan (CTMP).

2 THE PROJECT

2.1.1 The Applicant shall have ultimate responsibility for the construction works. They will employ a Principal Contractor and (directly or indirectly as required) certain sub-contractors to carry out the works onsite.

2.1.2 The main details of the project are summarised in this section. This project description is limited to an overview of the Proposed Development and key construction methodology, and the Site location and general arrangements are described. A full project description is provided in **ES Volume II, Chapter 2: Project Description.**

2.2 Project Description

2.2.1 The Proposed Development will consist of the following components:

- 10 no. three bladed horizontal axis wind turbines, up to 200 or 220 metres in height to the blade tip (where specified)
- wind turbine foundations and hardstanding areas which will include crane pad hardstanding areas and laydown/storage areas
- onsite substation
- battery energy storage system (BESS)
- permanent wind monitoring equipment (LiDAR)
- site access improvements, through the upgrading of the existing junction off the B4501
- onsite access tracks (new roads and upgraded existing roads/tracks), passing places and vehicle turning heads
- underground power cables linking the wind turbines to the substation
- watercourse crossings and associated infrastructure
- drainage systems
- micrositing up to 50 m
- onsite signage, and
- biodiversity enhancements proposals.

2.2.2 In addition to the above, the following temporary components of the Proposed Development are proposed during the construction phase:

- temporary construction and storage compound, located along the Site access track
- temporary working area north of the tracks leading to T09 and T10
- temporary concrete batching compound
- up to five temporary materials/ soil storage areas (if required)
- temporary peat storage area, and
- temporary borrow pit for the extraction of stone.

2.3 Site Location and Description

2.3.1 The Site comprises an area of approximately 659 hectares (ha) and the Site boundary is located approximately 3.1 km north-east of the town of Bala, Gwynedd, as shown in **ES Volume IV, Figure 1.1: Site Location** and **ES Volume IV, Figure 1.2: Development Layout**. A copy of the Development Layout Plan is provided in **Annex 1** of this document. The Site extends northwards across the Rhiwlas estate from the A494/A212 towards Llangwm, east and south of the B4501 to approximately c.6 km south of Cerrigdrudion. The Proposed Development will be accessed via an existing agricultural track that runs west to east from the B4501 at Glan-yr-Afon.

2.3.2 The Site currently comprises mainly of open moorland predominantly used for cattle and sheep grazing. There are areas of common land within and in proximity to the Site. There are two parcels of common land within the east of the Site on the western slope of Moel Darren and a third area of common land immediately north of the Site boundary and south of Garnedd Fawr.

2.4 General Site Arrangements

Site Set Up and Compound

2.4.1 One construction compound is proposed. The construction compound will be located towards the Site entrance and measure up to 12,000 m^2 and includes space for:

- Concrete Truck washing area
- Temporary modular building(s) to be used as a site office
- Welfare facilities
- Parking for construction staff and visitors
- Reception area
- Fuelling point or mobile fuel bowser
- Secure storage areas for tools, materials and plant.

2.4.2 The second temporary works area will be located east of T08, and will measure approximately 3,863 m^2, including space for equipment set-up and temporary material/ crane storage.

2.4.3 Up to five temporary materials storage areas as illustrated on **ES Volume IV, Figure 2.19: Construction Layout** have been identified for the purpose of the EIA. These areas (if required) would be up to 150 m by 150 m in area, up to 5 m in height no more than 50,000 m^3 volume with slope gradients no greater than 1 in 2. The temporary materials storage areas will be restored to the pre-construction condition prior to the completion of the construction phase.

2.4.4 All temporary construction compounds and laydown areas will be removed and the ground restored to its original condition once construction is complete, and the turbines are operational.

Fencing and Site Security

2.4.5 The temporary construction compound will have palisade security fencing installed around the perimeter.

2.4.6 Closed circuit television (CCTV) will be installed within the construction compound as required and the perimeter secured by a temporary security fence.

Working Hours

2.4.7 The core hours of working (including access and egress) on any part of the development during the construction period will be:

- 08:00 to 18:00 hours Mondays to Fridays;
- 08:30 to 13:00 hours on Saturdays.

2.4.8 The following controls will also apply to the works:

- No works, including site deliveries and collections, will take place on Sundays or Public Holidays.

2.4.9 To maximise productivity within these working hours, a period of up to one hour before and up to one hour after core working hours will be used for the start-up and close-down of activities. It will not include the operation of any plant or machinery likely to cause disturbance to local residents or businesses. These periods will not be considered an extension of the working hours.

Additional Hours

2.4.10 Except in the case of an emergency, any work required to be undertaken outside core hours (not including non-intrusive surveys, repairs or maintenance) will be agreed in advance with Gwynedd Council. Details of these will be provided in the full CEMP.

2.4.11 Gwynedd Council would be notified of any exceptions to the proposed working hours for activities such as for foundation pours and turbine erection. Concrete pouring for an individual turbine must take place continuously and so activity will only cease when the pour has been completed. Safe turbine erection can only occur during periods of low wind speeds and so lifting operation may need to be scheduled outside of the above hours. In addition, it may be necessary to complete a particular lifting operation to ensure the structure is left safe.

2.5 Indicative Construction Programme

Table 2.1 Indicative Construction Programme

Activity	Month																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Site Establishment (Including temporary compound and the concrete batching plant)																					
Construction of New Access Tracks and Crane Hardstanding (Including drainage infrastructure)																					
Turbine Foundation, watercourse crossings and bridge construction																					
Substation, Energy Storage, LiDAR installation and Electrical Works																					
Cable Trenching and Installation																					
Crane Delivery and Demobilisation																					
Turbine Delivery, Erection and Commissioning																					
Site Reinstatement and Demobilisation																					

3 ENVIRONMENTAL CONTEXT

3.1.1 This section summarises the key environmental receptors which may be impacted by the development. Further details provided in **ES Volume II, Chapter 3: Environmental context and reasonable alternatives considered**, with further factor specific information provided in the relevant corresponding ES technical chapter. The location of some of the key environmental receptors are illustrated in **ES Volume IV, Figure 3.1: Environmental Constraints**, a copy of which is provided in **Annex 1** of this document.

3.2 Residents and Local Community

3.2.1 The Site is located in a predominantly undeveloped upland area. There are 59 residential properties located within 0.5 km of the Site boundary.

The following environmental issues could be of concern if not appropriately managed:

- Nuisance including:
  - Mud on roads spread by construction traffic;
  - Excessive or poorly directed light; and
  - Litter.
- Dust and fumes from transport and construction activity
- Noise and vibration from transport and construction activity
- Traffic and transport disruption
- Exhaust emissions from site plant, equipment and vehicles, and
- Fugitive dust emissions from site activities.

3.2.2 Given the location and nature of the Proposed Development, the construction process is considered to have limited effect upon the nearest residential properties due to distance.

Air Quality

3.2.3 There are no Air Quality Management Areas (AQMAs) within 2 km of the Site boundary. The Proposed Development will not have a significant adverse effect on human receptors or designated habitats in the vicinity of the construction routes.

3.2.4 Atmospheric emissions from construction activities will depend on a combination of the potential for emissions (the type of activity and prevailing conditions) and the effectiveness of control measures. In general terms, there are two sources of emissions that will need to be controlled to minimise the potential for adverse environmental effects.

- Exhaust emissions from site plant, equipment and vehicles, and
- Fugitive dust emissions from site activities.

Noise and Vibration

3.2.5 Construction phase noise impacts arising from equipment, vehicular movements and activities related to the construction of the Proposed Development have the potential for a temporary, and short-term impact on nearby sensitive receptors.

3.2.6 Nearby sensitive receptors include scattered residential properties located within the Site boundary as well as properties located around the Site boundary. Due to the distance between the surrounding noise sensitive receptors and the location of construction activities, predicted noise levels for all proposed construction activities (construction of the new access road and concrete pouring for the substation compound) are below the BS 5228 ABC threshold.

Site Lighting

3.2.7 Artificial lighting will be required during the construction phase to promote safe working conditions and security, during periods of limited natural light. Examples include vehicle and plant headlights, construction compound lighting, floodlights and mobile lighting units, to be used around specific construction activities. It is intended that the type of lighting would be non-intrusive (e.g. directed down and towards works activity and away from the Site boundary), to minimise impact on local properties and any other environmental considerations.

Traffic, Transport and Public Rights of Way

3.2.8 The Proposed Development will be accessed directly from the B4501. The access junction will provide the sole access to the Site for abnormal loads associated with the turbine equipment, as well as access for construction materials and ongoing operational traffic. Heavy Goods Vehicles (HGV) traffic will be limited to using the designated route only.

3.2.9 During the construction period, the following traffic will require access to the Site:

- Staff transport
- Construction equipment and materials, deliveries of machinery and supplies such as crushed rock, and
- Abnormal loads comprising wind turbine components, grid infrastructure and also heavy lift crane(s).

3.2.10 The predicted increase in construction traffic will be short-term and temporary. The maximum traffic movements associated with the construction phase are predicted to occur in month eight, with average daily movements peaking at 217 two-way HGVs. It is estimated that there will be a further 52 car and light van two-way movements per day to transport construction workers to and from the Site.

3.2.11 The majority of the Site is Countryside and Right of Way (CRoW) Act access land, and there are two adjoining parcels of registered Common Land within the Site

boundary. here are eleven Public Rights of Way (PRoW) within and in the vicinity of the Site:

- Llandderfel No 175
- Llandderfel No 176
- Llandderfel No 177
- Llandderfel No 182
- Llandderfel No 128
- Llandderfel No 124
- Llandderfel No 131
- Llandderfel No 116
- Llandderfel No 120
- Llandderfel No 113, and
- Llandderfel No 114.

3.2.12 There are no Bridleways within the Site. There are no National Cycle Network (NCN) routes within 20 km of the Site.

3.2.13 It is recognised that it will be necessary to divert PRoWs, either temporarily or permanently, for both the construction and operational phases of the Proposed Development. For the duration of the construction phase, it will be necessary to temporarily remove open access rights within a designated Public Access Management Area to ensure health and safety of Common and Open Access Land users. Notifications of this temporary suspension will be prominently displayed on notices surrounding the Proposed Development Site, and on the Natural Resources Wales (NRW) and the Proposed Development websites. Permissive rights for cyclists and horse riders will be temporarily withdrawn by NRW during construction and reinstated upon completion.

3.2.14 Further details are included in Annex 3: Outline Access Management Plan in **ES Volume III, Appendix 11.1: Transport Assessment**.

3.3 Ecology

Designated Sites

3.3.1 There are six statutory nature conservation designations of national or local importance within 5 km of the Site, and three non-statutory sites within 2 km. Further details on designated sites can be found in **Annex 2** – DESIGNATED SITES. The closest statutory designated sites, Afon Dyfrdwy (River Dee) Sites of Special Scientific Interest (SSSI) and River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid Special Area of Conservation (SAC) lie adjacent to the west boundary of the B4501 (watercourse called Afon Mynach).

3.3.2 The SAC is designated for fish species (including Atlantic salmon, bullhead and lamprey species), otter, floating water-plantain and for being a watercourse of plain to montane levels with *Callitricho-Batrachion* vegetation. Although no direct impacts are anticipated due to its location outside of the Site boundary, a number of watercourses flow through the Site and tribute into the River Dee and Bala Lake SAC.

Habitats

3.3.3 A Preliminary Ecological Appraisal (PEA), UK Habitats Classification survey and National Vegetation Classification (NVC) Survey were undertaken in August 2022 and October 2024. Habitats identified include woodland, scrub, grasslands, bracken, scrub, heath, bog, standing and open water, hedgerows and trees.

Protected and Notable Species

3.3.4 A programme of baseline ecological surveys were completed between 2022 and 2025, and the following species were recorded onsite:

- **Bats:** A limited number of suitable habitat features used by foraging/ commuting bats.
- **Otter:** Evidence of otter were identified on the Afon Mynach west of the Site and the B4501. Several watercourses could be suitable otter habitat.
- **Birds:** notable species include breeding Barn Owls, Goshawks and Red Kites.

Invasive Non-native Species (INNS)

3.3.5 The ecological survey work to date has identified rhododendron in two separate locations in wooded areas south of Llyn Maen Bras. A desk top survey has noted further records of INNS including Canadian waterweed, giant knotweed, Himalayan balsam, cotoneaster, Japanese knotweed, montbretia, and rhododendron. The invasive species could be disturbed and potentially spread across the construction site causing incidental damage to the habitats when site clearance works commence, in particular the removal of vegetation and topsoil. Further details pertaining to the Site ecology can be found in **ES Volume III, Appendix 5.1: Habitats and Vegetation.** Details relating to management mitigation and enhancement strategies can be found in **ES Volume III, Appendix 5.4: Outline Habitat Management Plan**.

3.4 Cultural Heritage

3.4.1 There are no designated historic receptors within the Site boundary. The Proposed Development would have a direct impact on linear feature (HA001) during the construction phase, by removing a c. 37 metre section of the c. 128 metre linear receptor for site clearance during the construction of the hardstanding for turbine 10. Post-determination archaeological monitoring or excavation would preserve this through record.

3.4.2 There are 26 non-designated historic assets located within the Site.

3.4.3 There is the potential for previously unrecorded buried archaeological remains to be present within the construction footprint of the Proposed Development. The potential for the presence of previously unrecorded buried archaeological remains within the footprint of hard infrastructure has been assessed as medium risk. Based on other non-designated historic assets within the Site, if any unknown receptors were identified they would probably be of low local importance.

3.4.4 Direct physical effects from construction activities will only occur within the extent of the receptor. The layout has been designed to reduce the level of direct impacts to non-designated historical receptors recorded within the Site.

3.4.5 Further information can be found in **ES Volume II, Chapter 8: Cultural Heritage**.

3.5 Natural Hazards

Flood Risk

3.5.1 NRW's online Flood Map for Planning (NRW, 2025a) shows that the Site lies within Flood Zone A, with a small area of Zone C2 along the western edge of the application boundary. Flood Zone A indicates the area is considered to be at little or no risk of fluvial or coastal/tidal flooding. Zone C2 indicates that the area is without significant flood defence infrastructure, and has a likelihood of flooding from surface water, small watercourses and rivers of 0.1% (1 in 1,000) in any given year.

3.5.2 The Flood Risk Assessment Map Wales indicates there is a medium risk of flooding from rivers within the Site, with areas of flood risk confined to the main watercourse channels.

3.5.3 There is a high risk of flooding downstream, to the south of the Site towards Bala, the Afon Tryweryn at the confluence to the River Dee (Dee to Mynach), as well as to the north of the Site at the confluence of the Afon Medrad and Afon Ceirw within the periphery of, and confined to, the watercourse channel.

3.5.4 An Outline Drainage Strategy is provided in **ES Volume III, Appendix 7.1: Flood Consequence Assessment**, which will be implemented to manage onsite water runoff and reduce the flood risk to areas downstream.

Peat Slide Risk

3.5.5 A detailed assessment of peat slide risk has been undertaken, confirming that the majority of the Site has a Negligible to Low risk of peat landslide. Good construction methods and appropriate micrositing would be effective at controlling peat landslide risk for lower risk locations at the Site.

3.5.6 Further details are provided in **ES Volume III, Appendix 7.5: Peat Slide Risk Assessment.**

3.6 Natural Resources

Geology & Soils

3.6.1 The Site is underlain by bedrock from four formations Nant Ffrancon Subgroup, Glyn Gower Siltstones, Ceiswyn Formation and the Moelfryn Mudstones Formation. Superficial geological deposits underlying the Site primarily of diamicton till, with a small pocket of peat soil to the north of the Site.

3.6.2 The Site is primarily underlain by soils described as very acidic loamy upland soils with a wet peaty surface. The south-west is underlain by freely draining acidic loamy soils over rock, while the west is underlain by slowly permeable seasonally wet acidic loamy and clayey soils. Within the central region of the Site, to the north, there is a small area of soils described as slowly permeable wet very acidic upland soils with a peaty surface.

3.6.3 Phase 1 and 2 peat surveys have identified areas of peat soil within parts of the Site, with recorded depths of up to 1.92 m. Most of the Site (approximately 78%) has soils or peaty soils under 0.3 m in thickness. Areas of peat soil are restricted to pockets of boggy ground, with a higher concentration in the north-eastern part of the Site.

3.6.4 Works within areas of peat soil have been avoided by careful design. Should additional areas of peat soil be identified during ground investigation, micro siting would be employed to avoid or minimise works in areas of peat soil.

3.6.5 A Peat Management Plan is provided in **Appendix 7.4** and will be implemented to ensure that excavation, handling, stockpiling and reuse of peat soils are undertaken in accordance with best practice, in order to ensure that peat soils are retained in as good a condition as possible.

Water

3.6.6 The Proposed Development is situated within five catchment areas: Medrad to the north, Meloch to the east, Dee-Alwen to Llyn Tegid to the south, Tryweryn-Dee to Mynach to the south-west, and Mynach to the north-west.

3.6.7 Regional groundwater flow will tend to mimic the natural topography. Within the northern and western areas of the Site, groundwater is likely to flow west towards the Afon Mynach valley, along the western Site boundary. Within the southern part of the Site groundwater is likely to flow south into Llyn Maen Bras and the River Dee. For groundwater within the eastern part of the Site, flow would be towards the Nant Cefn-coch.

3.6.8 There are nine Private Water Supplies located in and within 5 km of the Site, with a potential linkage to the Proposed Development.

3.6.9 Further details are provided in **ES Volume II, Chapter 7: Land Soils and Water.**

4 ENVIRONMENTAL MANAGEMENT PROCEDURES

4.1 Site specific control measures

4.1.1 This section of the CEMP outlines the Site-specific control measures currently identified at this stage of the development. Environmental management measures have been developed to prevent, or where that is not possible, minimise the environmental impacts associated with the construction works.

4.1.2 These measures will be implemented by the Principal Contractor. **Annex 3** includes all the mitigation and control measures, in an environmental management matrix, that illustrates the association between construction activities, environmental aspects and impacts and the environmental management measures. The matrix defines responsibilities and frequency of actions.

4.1.3 Environmental mitigation shall be included in relevant Risk Assessment and Method Statement (RAMS) prepared by the Principal Contractor, and all RAMS shall be communicated to the workforce.

4.1.4 **Table 4.1** identifies key environmental risks associated with the project.

Table 4.1 Table Highlighting the Potential Environmental Risks, Consequences and Controls Associated with the Project

Risk Receptor: Protected species including but not limited to bats and birds.	**Risk Receptor:** River Dee and Bala Lake Special Area of Conservation.	**Risk Receptor:** Peat Soils.	**Risk Receptor**: Notable habitats (Annex 1 and Section 7 habitats)
Consequences: Removal of hedgerows and vegetation during construction activities. Lighting, noise and works near watercourses could disturb protected species.	**Consequences:** Pollution, damage to habitats or changes to surface water flow.	**Consequences:** Plant and vehicle movements, soil stripping, stockpiling can affect the nature of peat soils.	**Consequences:** Pollution, disturbance, direct habitat loss, indirect effects such as potential changes in habitat vegetation structure due to drying effects.
Controls: ECoW to undertake checks and pre-construction surveys prior to vegetation clearance. Follow pre-cautionary measures set	**Controls:** Monitor the implementation of pollution and siltation	**Controls:** Follow the measures set out in the Peat	**Controls:** Follow measures set out in the Species and Habitat Protection Plans. Follow and

out in method statements and the Species and Habitat Protection Plans.	protection measures and follow emergency incident response plans. Having a presence of an ECoW	Management Plan.	monitor the effectiveness of pollution prevention measures, sediment management and dust suppression measures. Adopt good practice habitat reinstatement measures.

4.2 Traffic and Pedestrian Management

4.2.1 Traffic movements on local roads will be managed effectively to minimise the impact to local traffic journeys. A Construction Traffic Management Plan (CTMP) would be in place during the construction period, as agreed with Gwynedd Council. An Abnormal Load Transport Management Plan (TMP) has been prepared as part of the Planning Application and is provided in **Appendix 11.1** this will be worked into a detailed CTMP, secured through a planning condition and delivered upon appointment of the Contractor.

4.2.2 The Abnormal Load TMP provided in Annex 1 **Appendix 11.1** considers the route for all Abnormal Indivisible Load movements to and from the Site.

4.2.3 For CRoW land, PRoW and pedestrian routes, an Access Management Plan (AMP) will be prepared in advance of any construction activities. An outline AMP has been included in Annex 3 of **Appendix 11.1** and measures include the following:

- Users of the PRoW would be separated from construction traffic through the use of barriers;
- If required creating new temporary path diversions to ensure safe and efficient connections. The diversion and closure of footpaths will be signed and publicised on relevant project and local authority websites;
- The appointed Principal Contractor would ensure that speed limits are always adhered to by their drivers and associated subcontractors, where PRoW users will have priority;
- Signage would be installed at site exits that makes drivers aware of local speed limits and reminding drivers of the potential presence of vulnerable road users; and
- Training would be provided for all HGV staff on actions recommended by the British Horse Society.

4.3 Materials Management

4.3.1 The Site will operate in full compliance with the Environmental Protection Act 1990, the Environmental Protection (duty of care) Regulations 1991, Environmental Permitting (England and Wales) Regulations 2016 and all other relevant legislative requirements.

4.3.2 Construction of the Proposed Development will require a range of materials, details of which are provided in this chapter. Materials will only be stockpiled within the borrow pit or temporary construction compound and these stockpiles will be kept to the minimum required to manage the construction activities. Excavated material from the turbine foundations and access tracks would be re-used where practical onsite for creating the required levels for the infrastructure and restoration/reinstatement of temporary works.

4.3.3 Excavated materials will be retained and re-used within the Site for landscaping, reinstating access tracks, or building up platform areas. This reduces the need to import virgin aggregates or soils, which conserves finite primary resources and cuts embodied carbon from quarrying and transport. At the same time, it prevents excavated arisings from becoming a waste stream requiring offsite management or disposal, reducing pressure on regional landfill void and the costs/impacts of haulage.

4.3.4 Temporary stockpiles are restricted to designated storage/ laydown areas or borrow pits and are subject to careful segregation (e.g. soils kept separate from rock or peat). This approach maintains the quality of arisings so they remain suitable for beneficial reuse, preventing cross-contamination that would otherwise downgrade them to waste. Stockpiling in controlled conditions also reduces environmental risks such as dust, sediment runoff, and compaction, which could indirectly increase waste if materials are lost or degraded. Temporary material storage areas are preferably situated on flat or nearly flat ground with a confirmed absence of peaty soils. These areas should be at least 50 m away from watercourses and located 250 m away from private water supply intake.

4.3.5 By batching concrete onsite, the project reduces the volume of deliveries, packaging, and residual washout waste associated with transporting ready-mix from remote plants. This embedded design choice decreases transport-related carbon emissions and local traffic impacts while minimising spillage and surplus wastage from over-ordering. Consolidated handling also makes it easier to manage cementitious materials responsibly (e.g. capturing washout water and reusing fines). As a result, the measure reduces both raw material demand and unnecessary waste generation.

4.3.6 Construction material storage will be planned to be kept to a minimum through strategic ordering of quantity and timing of material deliveries.

4.3.7 A Materials Management Plan (MMP) will be developed by the Principal Contractor for implementation during construction. This would outline details of the requirements for materials and waste management during construction. All materials will be identified, classified, quantified and, where practicable, appropriately segregated. The MMP, aligned with CL:AIRE's Definition of Waste: Code of Practice, ensures

excavated soils are treated as “non-waste” where legitimate reuse is demonstrated with certainty of use, no harm to human health/environment, and clear tracking.

4.3.8 Materials onsite will be ordered and managed in such a way to minimise waste where possible, and where possible waste materials will be recycled. The most preferred options and in line with the Waste Hierarchy would be reuse and recycling of the Site materials and waste. Any material that cannot be reused will be disposed of accordingly. Waste will be transferred using a registered waste carrier to a licensed waste disposal site or recycling centre.

4.3.9 Where materials cannot be re-used onsite, surplus soils and stone may be transferred to other projects under the CL:AIRE (Contaminated Land: Applications in Real Environments) DoWCoP (Definition of Waste: Code of Practice) or treated to meet WRAP Aggregate Quality Protocol standards. This allows arisings to retain their “non-waste” status, ensuring lawful recovery and preventing them from entering the waste stream.

4.3.10 A Soil Management Plan will be developed detailing procedures for soil handling, storage and transfer (aligned to CIRIA Guidance: Sustainable management of waste soils and aggregates (RP1124)). This will be secured by condition prior to construction.

4.4 Waste Management

4.4.1 A Site Waste Management Plan (SWMP) will be developed by the Principal Contractor for implementation during construction. The SWMP sets out how each waste stream will be segregated, stored, tracked, and sent for recycling, recovery, or disposal, in line with legal Duty of Care requirements.

4.4.2 An accurate record will be maintained which details all waste disposal from Site such as waste types, quantity of disposal route. The Site will be maintained in a tidy, litter-free condition throughout the works. Measures will be put in place to control pests or scavengers should they be noted during site inspections.

4.4.3 Wastewater from welfare facilities would be held in a suitably sized containment tank and would be removed from site by tanker for treatment and disposal at a licensed facility.

4.4.4 Municipal waste from within offices or welfare will be disposed of within closed skips, located within the temporary construction compound, removed on a regular basis by an approved and certified licence carrier. Clearly marked storage bays, skips or silos for different waste streams (soils, metals, timber, plastic, hazardous fractions) will prevent waste contamination and ensure compliance for segregated collection.

4.5 Water Quality Monitoring

4.5.1 A water quality monitoring programme would be established at key locations around the Site (**Table 4.2**). Monitoring would begin prior to any construction works,

continuing during and post-construction, to allow pre-construction baseline quality to be determined. Four potentially at-risk PWS will be monitored on a twice daily basis (morning and afternoon) while works are ongoing within 500 m of the supply sources. Should any concerns be raised, the Applicant would provide an alternative supply of water until any concerns have been fully resolved. Details would be agreed with NRW but are anticipated to include:

- Visual checks for entrained sediment
- In-situ measurements of pH, temperature and specific conductivity
- In-situ measurements of turbidity and dissolved oxygen may be recommended for locations with particular sensitivity, and
- All works through and adjacent to wetland areas would be supervised by the ECoW.

Table 4.2 Water Quality Monitoring Locations and Recommended Monitoring Frequency.

Location ID	Location	Monitoring schedule
WQ01 (Control)	Tributary of Nant Cefn-coch. West of T05 and north-east of T06.	**Construction:** Daily during construction of T05 and T06, and associated track works; otherwise, weekly.
WQ02	Tributary of Nant Cefn-coch. South-east of T05. Along eastern Site boundary.	**Construction:** Daily during construction of T05 and associated track works; otherwise, weekly.
WQ03	Unnamed tributary, upstream of Nant Gau, north-west of T01 and west of T02 and north of the main site access track.	**Construction:** Daily during construction of T02 and associated track works, and main site access track; otherwise weekly.
WQ04	Nant Cefn-coch, where several tributaries meet. South of T08 and T09. WQ03 downstream of proposed bridge works.	**Construction:** Daily during construction of T03, T04, T07, T08, T09, T10, substation, batching compound, and associated track works; otherwise weekly.
WQ05	Tributary of Nant Hafhesp, located 40 m north of Llyn Maen Bras.	**Construction:** Daily during construction of T01, LiDAR compound and associated track works; otherwise weekly.
WQ06	Afon Mynach; west of site entrance, to the right of existing access track.	**Construction:** Daily during construction of main site access track and borrow pit, otherwise weekly.

Location ID	Location	Monitoring schedule
WQ07 (Control)	Afon Mynach; north-west of the Site entrance, south of footpath.	**Construction:** Daily during construction of main site access track and borrow pit, otherwise weekly.

4.5.2 Construction activities would be restricted during periods of wet weather, particularly for any works occurring within 20 m of a watercourse, to minimise mobilisation of sediment in heavy rainfall. The following 'stop' conditions are recommended to guide construction activity (CH2M & Fairhurst, 2018):

- High intensity rainfall – rainfall during construction greater than 10 mm per hour
- Long duration rainfall – rainfall in the preceding 24 hours greater than 25 mm
- 7-day cumulative rainfall (1) – preceding 7 days of rainfall greater than 50% of the monthly average, and
- 7-day cumulative rainfall (2) – preceding 7 days of rainfall greater than 50 mm.

5 GENERAL ENVIRONMENTAL REQUIREMENTS

5.1 Roles, Responsibility and Authority

5.1.1 The Principal Contractor's Senior Management shall make available sufficient time and resource for the effective management of environmental risks that could arise during construction work. This includes appointing suitably qualified personnel with knowledge and capability in the environmental management of construction site works.

5.1.2 Project roles and responsibilities will be defined in the full CEMP. The project team and all appointed contractors will be responsible for ensuring the potential risks to the environment are adequately avoided or controlled by the application of measures as documented within the full CEMP, which shall be implemented throughout construction.

5.1.3 Persons having responsibility for environmental site management, and in particular any persons required to undertake and oversee response to any incidents with potential environmental consequences, shall be empowered to make decision and take appropriate action necessary to avoid or mitigate adverse environmental effects, even when this may lead to delay and/or additional cost to the Principal Contractor.

5.1.4 The key persons expected to be involved in the construction stage works are set out in **Table 5.1**.

Table 5.1 Key Project Roles and Responsibilities

Key Project Roles	Responsibilities
Senior Management	Resourcing and overall responsibility
Project Manager	Implementing the CEMP; associated plans; and mitigation
Environmental Advisor	Environmental assurance and advice to construction team

5.2 Competence, Training and Awareness

5.2.1 The Principal Contractor shall ensure appropriate awareness training is delivered to all site operatives and only suitably qualified sub-contractors are appointed. This will be in line with the overall training and awareness programme for the project. The level of training and awareness will depend upon the position and duties the person is to perform.

5.2.2 Training and awareness will include, but not be limited to:

- Technical training
- Site induction
- Task briefings, and
- Toolbox talks.

5.2.3 Records of all inductions and Toolbox Talk deliveries shall be maintained at the Site office. Copies shall be made available to the Applicant on request.

5.3 Internal Communication

5.3.1 The Principal Contractor's Site Manager, Environmental Advisor and other relevant team members shall meet regularly to review the status of environmental aspects including but not limited to:

- Works activities underway and planned
- Mitigation measures required to be implemented
- Results of inspections and any audit results/feedback
- Corrective and preventative actions required to be implemented
- Identification of areas for continual improvement
- Status of staff competence and training needs, and
- Status of CEMP and of any required consent and approvals and the need for review and updating.

5.3.2 Additional and ongoing communication of environmental performance and requirements is to be determined by the appointed Environmental Advisor and provided as appropriate.

5.4 External Communication

5.4.1 External communication will include but are not limited to:

- Community liaison in relation to the construction works, including:
  - the nature of the works being undertaken;
  - the expected duration of the works;
  - the contractor's working hours;
  - mitigation measures that have been adopted to minimise noise; and
  - contact details in the event of a noise disturbance.
- Engagement with external stakeholder as appropriate
- Signage and information
- Project website
- Complaints or enquiries, and

- Progress reporting to stakeholders.

5.4.2 The Site management will develop an external communication plan that will include roles and responsibilities, procedure for complaints and enquiries, record keeping, monitoring and awareness training for the Site workforce.

5.4.3 The Principal Contractor will discuss with the Applicant whether the project should be registered with Considerate Constructor Scheme or other similar associations.

5.5 Documentation

5.5.1 Documents will be managed in line with contractor internal procedures. The CEMP shall be controlled document and authorised latest version shall be signed and dated by the responsible person[s].

Other site environmental management document would include, but not be limited to the following:

- Compliance obligations: copies of relevant consents, permissions, or other approvals/ authorisations
- Emergency preparedness and response (**Annex 4**): including of any environmental incidents including actions taken and resolution
- Monitoring, inspections and audits: environmental data, trend analysis, action trackers
- Communication records: Minutes of environmental team briefings and key stakeholder consultations
- Training records: Records of staff training, skills, experience, and qualifications and
- Management review records: to demonstrate review process and actions taken.

5.6 Environmental Consents

5.6.1 Where construction activities are subject to environmental consents, authorisations and permissions, an Environmental Consents Register will be developed. The register will include a schedule of all consent submissions and a tracker to confirm they are in place for the start of works.

5.6.2 The register will be a live document, reviewed monthly.

5.7 Environmental Data

5.7.1 Environmental data will be recorded to support the assessment of environmental performance and continual improvement. Data may include, but not be limited to the following:

- Energy usage (i.e. electricity meter readings and fuel used/delivered to site)
- Water consumption (i.e. water meter readings or bowser water deliveries to site)
- Waste volumes
- Environmental complaints, and
- Environmental training and awareness.

5.7.2 Trends will be reviewed and action plans developed where improvements need to be made.

5.8 Monitoring, Inspections and Audits

5.8.1 The Principal Contractor shall be responsible for managing environmental performance during all site works. This will be supported with a programme of monitoring, inspections and audits.

5.8.2 **Monitoring**

5.8.3 Monitoring will be undertaken to record environmental data such as noise levels; resource use; and verify any consent conditions.

5.8.4 Monitoring of the effectiveness of pollution prevention measures will be the responsibility of the Principal Contractor.

Daily Inspections

5.8.5 Daily inspections shall be undertaken to record compliance to the requirements in the CEMP and other requirements such corporate requirements.

5.8.6 Any elements of the Site management found to be in an unsatisfactory condition during the Site inspection shall be addressed on the day or reported to the Site Manager to arrange appropriate actions.

Audits

5.8.7 Audits will involve a more detailed assessment of environmental performance, including site management and compliance to procedural and system requirements.

5.8.8 All audits shall be documented and actions raised will be addressed within an appropriate timescale.

5.8.9 A monthly waste audit will be undertaken by an Environmental Advisor, tracking material arisings, disposal routes and recycling performance through a reporting system.

5.9 Review and Updates

CEMP Reviews

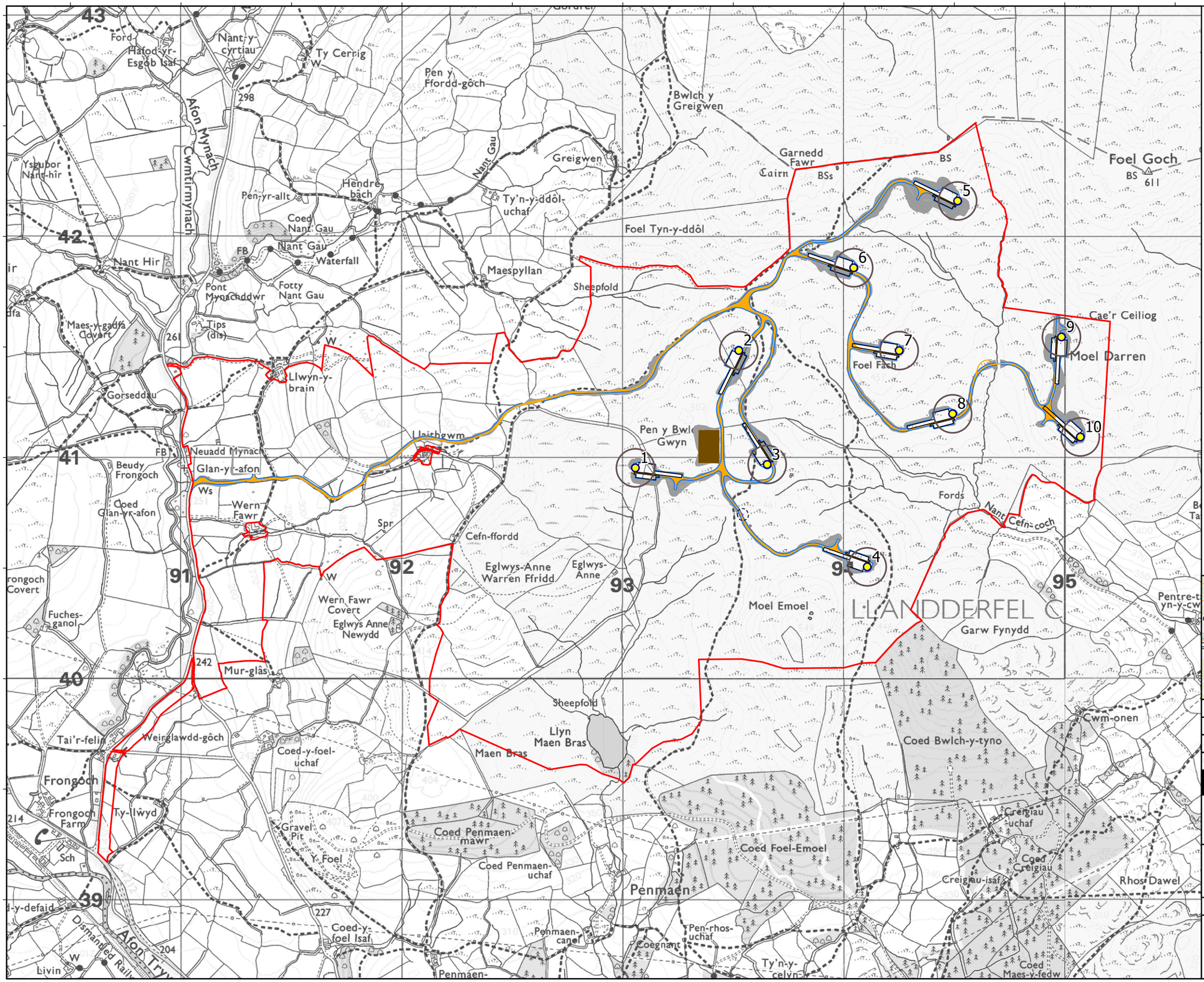
5.9.1 The project CEMP will be reviewed every six months as a minimum; or following any significant change to the work activities, client requirements or legislation. Therefore, this CEMP is a live document.

Management Review

5.9.2 A management review of the performance of the CEMP will be undertaken at least every six months. The review will include members of the Applicant and Principal Contractor senior management team, and project environmental representatives.

Matters such as staffing, training, trends from audits and inspections and performance against Key Performance Indicators (KPIs) will be discussed. Where there is a shortfall in performance, actions and resources shall be agreed to rectify this.

ANNEX 1 – DEVELOPMENT LAYOUT PLAN AND ENVIRONMENTAL CONSTRAINTS PLAN



LEGEND:

- Turbine
- Turbine Oversail
- Site Boundary
- LiDAR Compound
- Hardstands
- Tracks
- Verges
- Substation / BESS
- Cut and Infill Extent

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter
Client: ESB/Coriolis Energy

Rev	Date	Description	Drn	Chk	App
00	03/11/2025	First Issue	AW	KS	KS

Foel Fach Wind Farm

Coriolis Energy | RSK environment (Assessment • Management • Consents) | ESB (Energy for generations)

TITLE: Development Layout

ID: P664094_Figure2-1_DevelopmentLayout

0 0.2 0.4 0.6
Kilometres

Scale: 1:16,000 @ A3

REV 00

Path: C:\Users\AWood\RSK Group\RSK Environment GIS Projects - 664094 - Foel Fach Wind Farm\01GIS\P664094_DesignFreeze.aprx\Figure2-1_DevelopmentLayout

285000 286000 287000 288000 289000 290000 291000 292000 293000 294000 295000 296000 297000 298000 299000 300000 301000

347000 346000 345000 344000 343000 342000 341000 340000 339000 338000 337000 336000 335000 334000

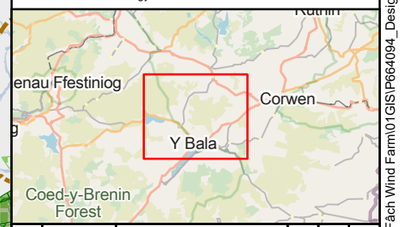
Llyn Celyn
Afon Tywyn
Afon Wnion
Afon Ceirw valley mosaic
Bala Hinterland
2km
5 km
Llyn Maen Bras
Y Frongoch
Maen y Rhos Standing Stone
Bethel
Sarnau
Cefn-ddwysarn
Dinmael
Coed Mawr
Corwen
Y Bala
Coed-y-Brenin Forest
Lily's Wood
Llandderfel
Llanfor
Llanycil
Afon Dwyryd

LEGEND:
- Site Boundary
- Site Boundary Buffers

Listed Building Grades
- I
- II
- II*

Public Rights of Way
- Denbighshire
- Gwynedd
- Conwy (indicative)
- National Grid Towers
- National Grid Overhead Lines
- 33kV Power Line Pole
- 33kV Power Line Tower
- 33kV Power Line
- Special Protection Areas
- Special Areas of Conservation
- Sites of Special Scientific Interest
- Landscapes of Outstanding and of Special Interest
- Scheduled Monuments
- Historic Landscape Areas
- Historic Landfill Sites
- Historic Parks and Gardens
- Common Land
- Conservation Areas
- Geological Conservation Review Sites
- Ancient Woodland Inventory 2021
- National Forest Inventory 2020
- Ramsar
- Flood Map Rivers and Sea
- Flood Map Surface Water
- Special Landscape Areas
- Eryri (Snowdonia) National Park

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter
Client: ESB/Coriolis Energy



Rev	Date	Description	Drn	Chk	App
00	03/11/2025	First Issue	AW	KS	KS

Foel Fach Wind Farm

Coriolis Energy | RSK environment (ASSESSMENT • MANAGEMENT • CONSENTS) | ESB Energy for generations

TITLE: Environmental Constraints

ID: P664094_Figure3-1_EnvironmentalConstraints

0 1 2
Kilometres
Scale: 1:50,000 @ A3

N W E S

REV 00

Path: C:\Users\AWood\RSK Group\RSK Environment GIS Projects - 664094 - Foel Fach Wind Farm\01GIS\P664094_DesignFreeze.aprx\Figure3-1_EnvironmentalConstraints

290500 291000 291500 292000 292500 293000 293500 294000 294500 295000 295500

343000 342500 342000 341500 341000 340500 340000 339500 339000

Legend:
- Site Boundary
- Potential Peat Stockpile Area
- Borrow Pit
- Concrete Batching Compound
- Bridge Temporary Working Area
- Construction Compound
- Temporary Storage Area (if required)
- Turbine and Infrastructure Footprint

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter
Client: ESB/Coriolis Energy

Parc Cenedlaethol Eryri

Rev	Date	Description	Drn	Chk	App
02	05/11/2025	Removed Storage Area	AW	KS	KS
01	30/10/2025	Updated Site Boundary	AW	KS	KS
00	27/10/2025	First Draft	FA	KS	MC

Foel Fach Wind Farm

TITLE: Construction Layout

ID: P664094_Figure2-18_ConstructionLayoutPlan

0 0.2 0.4 0.6
Kilometres
Scale: 1:16,000 @ A3

REV 02

Path: RSK Group\RSK Environment GIS Projects - 664094 - Foel Fach Wind Farm\01GIS\P664094_DesignFreeze.aprx

ANNEX 2 – DESIGNATED SITES

Table B-0.1 Statutory Designated Sites

Site	Distance and Direction from Site Boundary	Qualifying Interests
River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC	Adjacent to Site, west	• Atlantic salmon (*Salmo salar*); • Floating water-plantain (*Luronium natans*); • Sea lamprey (*Petromyzon marinus*); • Brook lamprey (*Lampetra planeri*); • River lamprey (*Lampetra fluviatilis*); • Bullhead (*Cottus gobio*); • Otter (*Lutra lutra*); and • Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation
Afon Dyfrdwy (River Dee) SSSI	Adjacent to Site, west	• Rivers with floating vegetation often dominated by water crowfoot; • Sea lamprey; • River lamprey; • Brook lamprey; • Atlantic salmon; • Bullhead; • Freshwater pearl mussel; • Grayling (*Thymallus thymallus*);), and • Otter.
Migneint-Arenig-Ddualllt SSSI	805 m, west	• Dry heath; • Blanket bog; • Wet heath; • Flushes; • Lakes; • Woodland; • And other habitats including calcareous grassland, rush pasture and swamp; • Ground beetle (*Trechus rivularis*); • Weevil (*Anthonomus conspersus*); • Fungus gnat (*Brevicornia kingi*); • Large heath butterfly (*Coenympha tullia*); • Assemblage of invertebrates,; and • Multiple flora species (including flowering plant assemblage).
Migneint-Arenig-Ddualllt SAC	805 m, west	• European dry heaths; • Blanket bogs (priority feature if active bog);

Site	Distance and Direction from Site Boundary	Qualifying Interests
		• Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*; • Natural dystrophic lakes and ponds; • Northern Atlantic wet heaths with *Erica tetralix*; and • Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles.
Cors y Sarnau SSSI	2.55 km, south-east	• Wetland habitats over peat mire, fen, bog, wet woodland).
Caerau Uchaf SSSI	3.19 km, east	• Species-rich hay meadow; , and • Wet pasture.
Llyn Tegid SSSI	3.9 km, south	• Lake and aquatic/emergent vegetation; • Lake fen/swamp including wet woodland; • Common whitefish (*Coregonus lavaretus*); • Glutinous snail (*Myxas glutinosa*);), and • Floating water-plantain (*Luronium natans*).
Llyn Tegid Ramsar	3.9 km, south	• Floating water-plantain; • Water mudwort (*Limosella aquatica*); • Six-stamened waterwort (*Elatine hexandra*); • Water sedge (*Carex aquatilis*); • Common whitefish; , and • Grayling.
Y Glyn-diffwys SSSI	4.61 km, north-east	• Semi-natural ancient broad-leaved woodland, which is rare habitat in the former county of Clywyd.
Corsydd Nug a Merddwr	6.12 km, north-west	• Lowland valley side blanket mire; , and • Mire, swamp, rush pasture and wet grassland.
Berwyn a Mynyddoedd De Clwyd / Berwyn and South Clwyd Mountains SAC	6.80 km, south-west	• European dry heaths; • Blanket bogs (priority feature if active bog); • Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*); and • Transition mires and quaking bogs.
Berwyn SSSI	6.80 km, south-east	• Common heather dominated heath and blanket mire.
Coedydd Dyffryn Alwen SSSI	7.49 km, north-east	• Semi-natural broad-leaved woodland.

Table B-0.2 Non-statutory Designated Sites for Nature Conservation within the Site

Site	Qualifying Interests
Llandderfel Wildlife site - candidate	Acid grassland; dwarf shrub heath; bracken.
Llwyn-y-brain heath - candidate	Valley mire.
Llwyn-y-brain cottage - candidate	Neutral grassland.

ANNEX 3 - ENVIRONMENTAL MANAGEMENT MATRIX

Environmental Management Matrix

ACTIVITY	ASPECT	IMPACT	MITIGATION	WHO	FREQUENCY
Mobilisation/ site clearance, compound set-up, and access					
Procurement and material management	Housekeeping	Poor management of materials leading to wastage	Preparation of a declared Materials Management Plan (MMP) under CL:AIRE DoWCoP, setting out how excavated soils and rock (including peat, mineral and organo-mineral soils) will be characterised, tracked and re-used on-site or donated to appropriate receiver sites. The environmental impact of materials will be considered in the procurement process. Ordered materials shall be managed to avoid over-ordering or spoilage of surplus materials. A storage compound will be developed to safely store materials to prevent damage from traffic and weather. Surplus materials are to be reused on site where possible. Surplus dry (powder) concrete, cement and grout is to be collected and reused where possible e.g. as inert rubble. Reuse of dried materials may require environmental permits or exemptions. Encourage the reuse of cut-offs and arrange for suppliers to take back unused surplus materials and packaging. All reuse and recycling to be carried out in accordance within the terms of a valid waste exemption or voluntary codes of practice/protocols. Hazardous liquids must be re-sealed after use. Empty containers are to be disposed of to the designated container within the waste compound.	Project Manager/ Site Manager/ Snr Foreman	Pre-construction planning/ monthly/ weekly/ daily
Site establishment	Ecology	Otters	A programme of monitoring will be undertaken to ensure watercourses are not in any way being adversely impacted by the works. Monitoring would include pre-construction otter surveys to check for evidence of otter along watercourses on-site, as well as water quality monitoring pre-, during and post-construction. This would include surveying at sample points downstream of the works in/around the works (including at the watercourse crossings) and upstream of works. The monitoring would be undertaken under the supervision of an appointed Ecological Clerk of Works (ECoW) who would ensure that works are proceeding in a legally compliant manner. The purpose of the water quality monitoring would be to ascertain any changes in baseline conditions within, and particularly downstream (where the watercourses offer much better-quality habitat for qualifying species) of the Site to identify any requirement for additional mitigation. Works to the watercourse crossings would be done under the supervision of the ECoW to ensure that unnecessary impacts (such as increased siltation runoff) on the watercourse are not occurring.	Site Manager/ SHE Manager	Pre-construction planning
		Terrestrial mammals (including reptiles)	An ECoW will be employed for the duration of the construction and reinstatement periods, to ensure ecological interests are safeguarded. Pre-construction surveys for protected terrestrial mammals will be undertaken by a suitable ECoW covering all areas within 200m of the Proposed Development and associated working areas, following guidance applicable at the time of survey. The results of the pre-construction surveys will inform the need for further mitigation (if required) in respect of sensitive working practices, SPPs and/or the requirement to consult with NRW in relation to any protected species licensing.	Site Manager/ SHE Manager	Pre-construction planning
		Bats	Night working/lighting will be avoided within identified roosting or foraging areas, where possible. If unavoidable, any temporary lighting near watercourses will be minimised following current guidance: Bats and Lighting in the UK: Bats and the Built Environment Series (BCT, 2018).	Site Manager/ SHE Manager	Pre-construction planning
		Birds	Before the commencement of construction activities, a Breeding Bird Protection Plan (BBPP) would be prepared and submitted for agreement in consultation the Gwynedd Council and NRW which would form part of the CEMP. The BBPP would be informed by a pre-commencement breeding bird survey to establish the status and distribution of any nesting bird, including Schedule 1 breeding birds, within the Site and within 800 m of disturbing activities. This would be carried out in the breeding season preceding the construction phase of the Proposed Development to ensure the most updated information is considered, following receipt of consent. Note, surveys would also be undertaken during the construction phase to inform of 'live' constraints. The BBPP would detail the following measures, and any additional measures required on account of findings from the pre-commencement breeding bird survey, to ensure the protection of breeding birds over the course of construction works during the breeding season. Habitat clearance activities, where these coincide with the breeding bird season (1 March to 31 August, inclusive) would be subject to a pre-clearance survey by the ECoW or a competent ornithologist to identify any active wild bird nests. Should any active nest be found, works would only proceed under the advice of the ECoW/appointed ornithologist and following a disturbance risk assessment. This would include all works within the Site. Work exclusion buffers around identified nest site would be implemented where necessary in accordance with best available species guidance applicable at the time and/ or as agreed in consultation with NRW.	Site Manager/ SHE Manager	Pre-construction planning
		Protected Species and Habitats	A Species Protection Plan (SPP) and Habitat Protection Plan (SHPP) will be developed, detailing good practice measures for construction works respectively with regards to the protection of protected species (such as terrestrial mammals and reptiles) within and notable (Annex 1 and/or Section 7) habitats. The SPP will details measures to protect species during construction works, and include contemporary information gathered from pre-construction surveys (for terrestrial mammals) that would be carried out. The HPPs will detail measures required to manage construction works within these notable/sensitive habitats and include habitat reinstatement measures.	Site Manager/ SHE Manager	Pre-construction planning
		Special Area of Conservation (River Dee and Bala Lake SAC)	Sensitive construction works in and adjacent to watercourses must be adhered to, including pollution prevention controls, sediment management and monitoring to be implemented over the course of the construction phase.	Site Manager/ SHE Manager	Pre-construction planning

Flora and fauna	Invasive species spread	An invasive species management protocol will be developed and all management procedures to control the spread of invasive species will be adhered to by all Contractors.	Site Manager/ SHE Manager	Pre-construction planning
	Soil management	Ensuring that removal of vegetation is minimised to working areas and only for works that are essential. In order to minimise the risk of erosion and run-off, vegetation stripping shall be undertaken in segments, with only those areas to be worked on imminently stripped of vegetation. In this manner, vegetation stripping shall be undertaken in a staged sequence as the construction footprint progresses. Clear marking of areas where soil is to be removed, stockpiled and placed. Key signposting of areas that are to remain undisturbed during construction activities. Identification of areas requiring storage of multiple soil horizons and adequate signposting to prevent distinct horizons from mixing. Areas designated for stockpiling shall be bare or mown/ strimmed such that surface vegetation is short. This is to reduce the likelihood of anaerobic conditions developing within stockpile.	Site Manager/ SHE Manager	Pre-construction planning
	Removal of habitat and disturbance to wildlife	Works will not commence until an Ecological Appraisal has been completed and appropriate mitigations have been implemented. If during work activities it is suspected that a protected species has been disturbed, all works in the immediate area must cease until a qualified ECoW attends the site.	Site Manager/ SHE Manager	Pre-construction planning
Arboriculture	Damage to trees	An Arboricultural Method Statement will be followed by all contractors for the protection of trees within the Site. Measures include an arboricultural monitoring and supervision of sensitive work, specification of Construction Exclusion Zones (CEZs) where this is necessary for the preservation of trees and the use of tree protection barriers such as protective fencing.	Site Manager/ SHE Manager	Pre-construction planning
Archaeology	Disturbance of archaeology	No ground intrusive works shall commence until a Written Scheme of Investigation agreed with local authority archaeological adviser (HCPA) and other relevant parties following consent and appropriate mitigations have been implemented. Where the peat survey has identified peat deeper than 20 cm in depth post-determination purposive peat sampling will be undertaken by a geoarchaeological specialist prior to the commencement of construction activity. Where the geophysical survey identifies anomalies of potential archaeological interest archaeological mitigation in the form of post-determination archaeological monitoring and recording or excavation would be carried out. Post-determination archaeological monitoring or excavation of Linear Feature (HA001) be undertaken during the construction phase by a suitably trained person. Monitoring would be carried out by Heneb: The Trust for Welsh Archaeology (WAT) to ensure that any measures set out by the Local Authority as a condition of consent remain appropriate and are adhered to.	Site Manager/ SHE Manager	Pre-construction planning
Land contamination	Disturbance of contaminated ground	Known areas of contaminated land will be managed according to a method statement provided by a technical specialist. Where unknown contaminated land is disturbed, works will cease until analysis is completed by a technical specialist and appropriate mitigations have been implemented. Stockpiles of contaminated material must be situated on an impermeable surface at least 10m from any surface waters or drains, and run-off collected within a bund. Potentially contaminated water must be tested before dewatering. Contaminated water must be treated or discharged off site using an appropriate environmental permit. Contaminated water would be taken to a suitably permitted facility for treatment. It cannot be treated and discharged on site unless under and in accordance with an environmental permit.	Snr Foreman/ SHE Manager	Pre-construction planning/ daily

	Peat soils	Peat instability	Construction activities would be restricted during periods of wet weather, particularly for any work occurring within 20 m of a watercourse or within areas of identified peat soil. Careful track design would ensure that the volume and storage timescale for excavated materials would be minimised as far as practicable during construction works. Vegetation cover would be re-established as quickly as possible on track and infrastructure verges and cut slopes, by re-laying of excavated turves or acrotelm, to improve slope stability and provide erosion protection. Additional methods, including hydroseeding and/or use of a biodegradable geotextile, would be considered, if necessary, in specific areas. During construction, members of the construction staff would undertake advance inspections and carry out regular monitoring for signs of peat landslide indicators. A geotechnical specialist would be on call to provide advice should any peat landslide indicators be identified. Construction staff would be made aware of peat slide indicators and emergency procedures. Emergency procedures would include measures to be taken in the event that an incipient peat slide is detected.	Site Manager/ SHE Manager	Pre-construction planning
	Soil	Soil management of temporary material/soil storage areas (if required)	The five temporary material/ soil storage areas (if required) will be placed during the drier months, typically between May and September, so that handling of soil in wet conditions is minimised as well as compaction. Each area shall be sited, outside 50 m of watercourses or drains, and on ground with slopes no steeper than 1 in 2. Topsoil and subsoil will be stripped and stored separately in low, stable stockpiles not more than 4 m high to prevent internal soil structural damage, with side slopes flatter than 1 in 2 to maintain stability. Stockpiles within the areas will be sealed and covered, or seeded if storage periods exceed three months, to prevent erosion and runoff. In soils that are wet or plastic, the material shall first be windrowed no higher than 2 m to promote aeration and drying. Drainage controls, comprising cut-off ditches and silt traps, should be established up and down-gradient of each material/ soil storage area, and no refuelling or chemical storage shall be allowed to take place within these areas. The temporary material soil storage areas will be inspected weekly and following every heavy rainfall event to ensure slope stability, adequate drainage performance, check for erosion and cover integrity. Where these conditions are not being met, any such deficiencies should be addressed promptly.	Site Manager/ SHE Manager	Pre-construction planning
	Public Rights of Way	Closure/ diversion of Public Rights of Way	Public Rights of Way (PRoWs) shall remain open where possible. Applications for consent for any closures / diversions to existing PRoWs will be obtained and agreed with the local authority in advance of the required works. Users of the PRoWs will be separated from construction traffic using barriers (where permitted and appropriate) which will ensure that safe access to the Site for recreational purposes will be maintained. Crossing points will be provided where required, with path users having right of way and diversions will be provided where necessary. It should be noted that any necessary temporary diversions (during the construction phase) to the PRoW network will be discussed and agreed with Gwynedd County Council. Diversions if necessary will be applied for through a separate consent.	Site Manager/ SHE Manager	Pre-construction planning
Hazardous material storage and use	Release to water/ groundwater / land	Contamination	A Surface Water Management Plan will be adhered to by all Contractors and will incorporate all the below: Surface water from the areas surrounding the turbine bases, all hardstanding areas and the borrow pit would be prevented from entering the working areas by appropriate use of peripheral bunding and cut-off drains. These would help to divert clean water around and away from working areas. Earth bunds would be covered with a geotextile to prevent mobilisation of sediment from the bund. Bunds planned to be in place for more than 3 months would be seeded to provide stability and erosion protection. During works requiring excavation or stripping of ground, silt fencing or appropriate alternative sediment control protection measures would be installed on the downslope side of the working area to prevent inadvertent discharge of silty water into watercourses. Pre-construction installation of long-term drainage would provide an additional level of sediment control. All engineering work within 50 m of watercourses, including track construction and installation of watercourse crossings, would have appropriate sediment control measures established prior to groundworks. Vegetation would be retained along watercourse banks to act as additional protection. Minor in-stream works may be required for some watercourse crossings or drainage areas, particularly if culvert replacement or upgrade is required. If required, this work would be undertaken using a temporary dam to control flow while crossing structures are installed. Over-pumping would only be used if flow conditions require it. Crossings would avoid creating impediments for fish migration such as steps in levels at the downstream end and, where possible, would retain the natural channel bed. For areas of larger excavation, such as turbine bases, crane pads and borrow pit, temporary water control measures may be used. These are anticipated to include use of temporary settlement ponds or proprietary treatment systems such as Siltbusters, as appropriate. Any water collecting within excavations would be pumped out prior to further work in the excavation. This water is likely to require treatment to remove suspended solids prior to discharge to ground. This would be undertaken at designated treatment locations within the Site and water from deep excavations would be tested to ensure appropriate quality prior to discharge. Vegetation cover would be re-established as quickly as possible on track, verges, screening bunds and cut slopes by re-laying of excavated soil turves, to improve slope stability and provide erosion protection. Additional methods, including hydroseeding and/or use of biodegradable geotextile, would be considered, if necessary, in specific areas and areas of particular sensitivity as identified on Site by the Environmental Clerk of Works (ECoW). Wastewater from welfare facilities would be held in a suitably sized containment tank and would be removed from site by tanker for treatment and disposal at a licensed facility. All necessary permissions relating to construction works, plus accompanying Pollution Prevention Plans, would be obtained by the Principal Contractor and agreed with NRW, Conwy and Gwynedd Councils prior to any construction work beginning on the Site.	Snr Foreman	Daily

			Risk assessments would be undertaken and all hazardous substances and non-hazardous pollutants that would be used and/or stored within the Proposed Development would be identified. Hazardous substances likely to be onsite include oils, fuels, hydraulic fluids and anti-freeze. No non-hazardous pollutants have been identified as likely to be present and herbicides would not be used. Storage for all potentially hazardous materials would be provided within a secure, dedicated part of the construction compound with protective bunding and contained drainage system to ensure that any drainage from this area can be suitably treated to remove traces of oil and other materials prior to removal offsite by tanker for treatment and disposal at a suitably licensed location. All deliveries of oils and fuels would be supervised by the Site Manager or designated deputy. All storage tanks would be located within impermeable, bunded containers where the bund is sufficient to contain 110% of the tank's capacity. For areas containing more than one tank, the bund would be sufficient to contain 110% of the largest tank's capacity or 25% of the total capacity, whichever is greater. Any valve, filter, sight gauge, vent pipe or other ancillary equipment would be located within the containment area. Waste oil would not be stored within the Proposed Development but would be removed to dedicated storage or disposal facilities. Storage and handling of hazardous substances (including fuels) should not occur within 10 metres from any inland freshwater, or within 50 metres from a well or borehole. Management procedures and physical measures would be put in place to deal with spillages, such as spill kits and booms. Maintenance procedures and checks would ensure the minimisation of leakage of fuels or oils from plant. Refuelling and servicing would be undertaken on a dedicated impermeable surface with lipped edges to contain any contaminants. Where vehicle repair/maintenance is necessary in the field, owing to breakdown, additional precautions would be taken to contain contaminants, such as drip trays or absorbent mattresses. It is anticipated that foul drainage provision would be provided via a suitably sized holding tank within the welfare facilities, and wastewater would be removed by tanker for treatment and disposal at a suitably licensed wastewater treatment works located outside any phosphate-sensitive catchment areas. Washing-out of concrete mixing plant would only be permitted in one designated location with protective bunding and a dedicated and contained drainage system to ensure that wash-out water can be suitably treated to reduce alkalinity and suspended sediment load prior to removal offsite by tanker for treatment and disposal at a suitably licensed location.	Snr Foreman	Daily
			Spillage and emergency procedures would be prominently displayed within the Site, and staff would be trained in their application. The procedure document would incorporate guidance from the relevant NRW guidance documents. In the event of any spillage or discharge that has potential to harm or pollute the water environment (surface or groundwater), all necessary measures would be taken to remedy the situation. These measures would include: Identifying and stopping the source of the spillage. Containing the spillage to prevent it spreading or entering watercourses by means of suitable material and equipment. Using absorbent materials, including those capable of absorbing oils, to mop up spillages. These would be in the form of oil booms and pads and, for smaller spillages, quantities of proprietary absorbent materials. Sandbags would be readily available for use to prevent spread of spillages and create dams if appropriate. Where an oil/fuel spillage may have soaked into the ground, the contaminated ground would be excavated and removed offsite by a licensed waste carrier to a suitable landfill facility. The emergency contact number of a specialist oil pollution control company would be displayed within the Proposed Development. Sub-contractors would be made aware of the guidance for handling oils/fuels and of the procedures to follow when dealing with spillages. NRW would be informed of any discharge or spillage that may be harmful or polluting to the water environment. Written details of the incident would be forwarded to NRW no later than 14 days after the incident, in line with current best practice guidance.	Snr Foreman	Daily
Watercourse crossings	Protected Species	Otters	A programme of monitoring will be undertaken to ensure watercourses are not in any way being adversely impacted by the works. Monitoring would include pre-construction otter surveys to check for evidence of otter along watercourses on-site, as well as water quality monitoring pre-, during and post-construction. This would include surveying at sample points downstream of the works in/around the works (including at the watercourse crossings) and upstream of works. The monitoring would be undertaken under the supervision of an appointed ECoW who would ensure that works are proceeding in a legally compliant manner. The purpose of the water quality monitoring would be to ascertain any changes in baseline conditions within, and particularly downstream (where the watercourses offer much better-quality habitat for qualifying species) of the Site to identify any requirement for additional mitigation. Works to the watercourse crossings would be done under the supervision of the ECoW to ensure that unnecessary impacts (such as increased siltation runoff) on the watercourse are not occurring.	Site Manager/ SHE Manager	Pre-construction planning

Release to water	Silt run-off/ excavation dewatering entering watercourses and affecting aquatic life	A temporary dam to control flow, will be used while crossing structures are installed. Over-pumping would only be used if flow conditions require. Surface water from the areas surrounding the turbine bases, all hardstanding areas and borrow pits would be prevented from entering the working areas by appropriate use of peripheral bunding and cut-off drains. These would help to divert clean water around and away from working areas. During works requiring excavation or stripping of ground, silt fencing or appropriate alternative sediment control protection measures would be installed on the downslope side of the working area to prevent inadvertent discharge of silty water into watercourses. Pre-construction installation of long-term drainage would provide an additional level of sediment control. All silt protection measures must be inspected weekly and maintained throughout the works. All engineering work adjacent to watercourses, including track construction and installation of watercourse crossings, would have appropriate sediment control measures established prior to groundworks. Vegetation would be retained along watercourse banks to act as additional protection. Minimise any areas of soil stripping and stockpiling. Tracking or washing out next to drains/surface waters must be avoided. Permit to Pump to be used to remove water from excavations, aligned to statutory guidance. If a discharge consent is required, then all conditions within the consent must be understood before commencement of dewatering. The temporary discharge of uncontaminated (wholly or mainly rainwater) from an excavation to surface can be undertaken without an environmental permit under the following Environment Agency Regulatory Position Statement 261. Natural Resources Wales / Find out if you need a permit for discharges to surface water and groundwater provides a link to Temporary dewatering from excavations to surface water: Regulatory Position Statement (RPS) 261. If necessary temporary bunding and/or settlement ponds will be installed to allow for isolation and onsite treatment of any sediment laden or contaminated water prior to managed discharge. Vehicle washdown facilities shall be appropriately managed to contain contaminants and regulate reuse or disposal of the water.	Snr Foreman	Daily
Ecology	Invasive species spread	An invasive species management protocol will be developed and all management procedures to control the spread of invasive species will be adhered to by all Contractors.	Site Manager/ SHE Manager	Pre-construction planning
	Wetlands or bog habitat	Where track sections cross wetland or mire areas, cross-drainage would be provided within the track construction to ensure continuity of flow. This may take the form of a drainage layer within the track, suitably closely-spaced drainage pipes, or both as appropriate. These would be determined on a case-by-case basis to suit each individual area. Removing protective layers of soil and superficial deposits makes groundwater vulnerable to pollution from leaks or spills from vehicles or equipment used during construction. Earthworks would be kept to a practical minimum within these areas, to reduce the area of wetland affected by the construction works. Trackside drainage would be kept to a practical minimum and would only be installed where required to protect the track from erosion. All works through and adjacent to wetland areas would be supervised by the ECoW. Site-specific mitigation, including drainage segregation to avoid ‘flushing’ from excavation works and micrositing to avoid specific higher sensitivity areas, would be identified and established where appropriate. Water would not be discharged directly into watercourses. Additional protection, in terms of sediment traps using silt fencing or excavated sumps or settlement ponds, would be put in place between the water discharge location and watercourses. Sediment trap installation and monitoring would be overseen by the ECoW.	Site Manager/ SHE Manager	Pre-construction planning
Release to water	Groundwater modifications	Excavation of cable trenches could lead to groundwater flow between catchments if the trenches act as preferential flow paths. This can be avoided by laying cables in disturbed ground adjacent to access tracks. In areas where cable routes cross up or down notable slopes, clay bunds or alternative impermeable barrier would be placed for every 0.5m change in elevation along the length of the trench to minimise in-trench groundwater flow.	Site Manager/ SHE Manager	Pre-construction planning
Water quality	Works affecting watercourses	A water quality monitoring schedule would be agreed with NRW. Monitoring would begin prior to any construction works, to corroborate the baseline conditions set out within this Chapter and provide a pre-construction baseline quality to enable future comparison to be determined. All works through and adjacent to wetland areas would be supervised by the ECoW	Site Manager/ SHE Manager	Pre-construction planning

Compound establishment	Local issues (nuisance)	Visual intrusion	Cabins and site facilities will be placed, where possible, out of line-of-sight of local residents. Maintain good housekeeping and site working practices to control litter, insects or vermin. For example, dispose of food into appropriate receptacles. The site boundary shall be secured appropriately and all site gates shall be kept locked / closed out of working hours and kept closed and /or manned during working hours. Wherever possible, lighting shall be located and directed so that it does not cause unnecessary intrusion to local residents. Lighting shall be switched off when not in use unless specifically needed for construction activities or for security and / or health and safety requirements. Glare (and the potential for complaints) caused by poorly directed security and floodlighting shall be minimised by ensuring that light fittings are horizontally mounted and directed inwards on Site. Post-installation checks and monitoring of the lighting installations shall be undertaken to ensure that correct tilting angles and appropriate direction of lighting is achieved. This will allow adjustments to be made, where practicable, should undue light spill or glare be identified.	Site Manager/ SHE Manager	Weekly
Use of plant and equipment		Noise impact to local residents	Best Practicable Means as defined by the Control of Pollution Act 1974 would be implemented which would serve to minimise the potential noise impacts at receptors in the vicinity of the construction works. All construction activities will adhere to good practice as set out in BS 5228. Keep local residents informed of the proposed working schedule, where appropriate, including the times and duration of any abnormally noisy activity that may cause concern; Adhere to core construction work hours and ensure that any extraordinary site work continuing throughout 24 hours of a day (for example, crane operations lifting components onto the tower) would be programmed, when appropriate, so that haulage vehicles would not arrive at or leave the site outside of core hours or other specific delivery hours, with the exception of abnormal loads that would be scheduled to avoid significant traffic flows. Ensure all vehicles and mechanical plant would be fitted with effective exhaust silencers and be subject to programmed maintenance. Select inherently quiet plant where appropriate - all major compressors would be 'sound reduced' models fitted with properly lined and sealed acoustic covers, which would be kept closed whenever the machines are in use. Ensure all ancillary pneumatic percussive tools would be fitted with mufflers or silencers of the type recommended by the manufacturers. Instruct that machines would be shut down between work periods or throttled down to a minimum. Regularly maintain all equipment used on site, including maintenance related to noise emissions. Vehicles would be loaded carefully to ensure minimal drop heights so as to minimise noise during this operation. Where practicable, temporary enclosures to be used to screen all static or semi-static plant from noise sensitive receptor locations. Ensure all ancillary plant such as generators and pumps would be positioned so as to cause minimum noise disturbance and if necessary, temporary acoustic screens or enclosures should be provided. All plant, equipment and noise control measures applied to plant and equipment to be maintained in good and efficient working order and operated such that noise emissions are minimised as far as reasonably practicable. Any plant, equipment or items fitted with noise control equipment found to be defective would not be operated until repaired. All personnel on-site are to undergo site-specific inductions and briefings. Where relevant, specific noise and vibration control measures would be incorporated into the contractor's method statements.	Site Manager/ SHE Manager	Pre-construction planning
Deliveries and work force travel	Traffic and transport	Traffic affecting local residents	A Construction Traffic Management Plan will be adhered to by all contractors. Effective traffic management will be planned and implemented, where required in agreement with the Local Authority. Sufficient parking arrangements will be provided for site staff, to prevent parking on the side of the road. Deliveries will be planned to prevent stacking of vehicles accessing the site. The Principal Contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within proximity to the PRoW network, on Common Land and at crossing points. Advisory speed limit signage will also be installed on approaches to areas where PRoW users may interact with construction traffic. Signage will be installed on the Site exit that makes drivers aware of local speed limits and reminding drivers of the potential presence of PRoW users. This will also be emphasised in weekly toolbox talks.	Site Manager/ SHE Manager	Pre-construction planning
	Air emissions	Exhaust fumes affecting local residents/ environment	All equipment shall be inspected before use and any defects/faults reported to the Site Manager. All vehicle engines will be switched off when not in use to reduce particulate emissions. Exhaust systems will be fitted with particulate filters and catalytic converters as necessary.	Snr Foreman	Daily
Compound operations	Waste management	Lack of suitable facilities leading to increased landfill	A waste collection area shall be set up before site works start. This area shall be as close to the site compound as possible with adequate hardstanding for the waste containers and unobstructed access for telehandler and waste removal vehicles. A waste management plan shall be made available on site and its requirements understood by all Contractors and operatives before starting work on site. Monthly updates on the amount of waste successfully recycled will be made available to the Site Manager and displayed in the site office and can also be issued to the council upon request.	Site Manager/ SHE Manager	Pre-construction planning/ Monthly

Groundworks					
Borrow pit operations	Release to water	Groundwater modifications	Groundwater monitoring boreholes would be established within the two proposed borrow pit areas prior to any construction work beginning, to a depth at least 1m below the deepest expected excavation. Groundwater level monitoring would be undertaken to determine whether groundwater is present within the proposed borrow pit areas and, if it is, at what level the seasonally highest groundwater table stands. Any groundwater within borrow pit areas would be managed in line with best practice, with discharge via a settlement pond to allow any entrained sediment to be removed prior to discharge. Any required discharge licence would be obtained prior to excavation commencing.	Snr Foreman	Daily
	Soil managemen t	Stockpiling	Soil stockpiling shall be required during construction to enable storage and re-use of soils whilst limiting the damage caused by weather and construction activities, particularly following the stripping of the borrow pits. Soils shall be segregated as excavated, such that each soil type present on site is stockpiled separately (e.g. organic rich soils shall be stockpiled separately to clayey loam). The following provides a list of general principles that shall be adhered to: Storage of soils shall be avoided wherever possible, direct movement from donor to receptor location shall be used in the first instance; Soil storage periods shall be kept as short as possible through overall good management of the Site; Vegetation and other waste materials shall be removed from planned storage areas prior to creating stockpiles; Stockpiles shall be clearly separated based on soil type (i.e. topsoil and subsoil) and origin location, and signposted based on their contents to prevent mixing of soils; Stockpiles must not be vulnerable to compaction or erosion; Stockpiles must not cause pollution to surrounding watercourses; Stockpiles must not increase local flood risk; Stockpiles must be clearly marked out and signed; Stockpiles shall generally not exceed 4 m for topsoil or 5 m for subsoil; and, Ecologically important soils must be stored separately from neighboring soils. Following the completion of the stockpile, the area shall be cordoned off and clearly signposted to prevent disturbance or contamination from other construction activities. The locations of each stockpile, approximate volumes and type of soil stored will be recorded on a Site plan. If stockpiles are to be stored for more than 6 months, the surface of the stockpile shall be seeded with a seed mix that matches the surrounding habitat. This is to minimise soil erosion, protect nutrient loss, maintain biological activity and reduce infestation of weeds or locally invasive species that could spread onto adjacent land. If seeding is to take place during a period of dry weather, the stockpiles shall be sprayed down with water in order to prevent wind erosion and aid the establishment of the seeds. With the exception of that necessary to control Invasive Non-Native Species (INNS) under an appropriate INNS working method statement, use of herbicides shall be avoided to reduce potential impacts on local biodiversity.	Snr Foreman	Daily

	Mixing of soil strata and loss of structure	A soil management plan will be developed detailing procedures for soil handling, storage and transfer (aligned to CIRIA Guidance: Sustainable management of waste soils and aggregates (RP1124)). Soil stripping conducted during construction shall follow the guidance given in Defra's Construction Code of Practice for Sustainable Use of Soils in Construction Sites9. Topsoil will be stripped separately prior to stripping the subsoil and progressively down to the base/formation layer. A back-acting excavator with a toothed-bucket shall be used for stripping in combination with dump trucks to transport stripped soil to stockpiles or area of reinstation. Soil is stripped in the driest condition possible. Tracked equipment is used wherever possible. Topsoil must be stripped from any planned subsoil storage areas prior to the stripping of the subsoil. An appropriately sized earthmoving equipment shall be used for different sized work areas to be stripped.	Site Manager/ SHE Manager	Pre-construction planning
Flora and fauna	Invasive species spread	An invasive species management protocol will be developed and all management procedures to control the spread of invasive species will be adhered to by all Contractors.	Site Manager/ SHE Manager	Pre-construction planning
Archaeology	Disturbance of archaeology	No ground intrusive works shall commence until a Written Scheme of Investigation agreed with local authority archaeological adviser (HCPA) and other relevant parties following consent and appropriate mitigations have been implemented. Where the peat survey has identified peat deeper than 20 cm in depth post-determination purposive peat sampling will be undertaken by a geoarchaeological specialist prior to the commencement of construction activity. Where the geophysical survey identifies anomalies of potential archaeological interest archaeological mitigation in the form of post-determination archaeological monitoring and recording or excavation would be carried out. Post-determination archaeological monitoring or excavation of Linear Feature (HA001) be undertaken during the construction phase by a suitably trained person. Monitoring would be carried out by Heneb: The Trust for Welsh Archaeology (WAT) to ensure that any measures set out by the Local Authority as a condition of consent remain appropriate and are adhered to.	Site Manager/ SHE Manager	Pre-construction planning
Land contaminati on	Disturbance of contaminated ground	Known areas of contaminated land will be managed according to a method statement provided by a technical specialist. Where unknown contaminated land is disturbed, works will cease until analysis is completed by a technical specialist and appropriate mitigations have been implemented. Stockpiles of contaminated material must be situated on an impermeable surface at least 10m from any surface waters or drains, and run-off collected within a bund. Potentially contaminated water must be tested before dewatering. Contaminated water must be treated or discharged off site using an appropriate environmental permit. Contaminated water would be taken to a suitably permitted facility for treatment. It cannot be treated and discharged on site unless under and in accordance with an environmental permit.	Snr Foreman/ SHE Manager	Pre-construction planning/ daily
Release to water	Private Water Supply pollution	All groundworks requiring excavation would be minimised as far as practicable, within the necessary engineering constraints for construction. Creation of water diversion bunds to divert silty water into water treatment areas; Creation of settlement ponds or sumps to trap and treat any surface water with entrained sediment prior to discharge, and; Frequent visual and in situ monitoring of the headwaters streams downstream of the works area and upstream of the PWS to check for signs of sediment in water (turbidity), oil sheens or discolouration or changes in flow levels. No potentially polluting materials would be stored in areas directly upslope or within 250 m of any of the PWS. No maintenance of plant or vehicles would take place within the Afon Mynach catchment area. Any emergency repairs of plant in this catchment would have additional protection measures put in place as a priority, to include absorbent mattresses and spill protection as a minimum. All cables would be laid in disturbed ground adjacent to access tracks and, where possible, on the side of the track away from the Afon Mynach headwaters streams. In areas where cable routes cross up or down notable slopes, clay bunds or alternative impermeable barriers would be placed for every 0.5 m change in elevation along the trench to minimise in-trench shallow groundwater flow. Any groundwater seepage into excavated areas would be removed to adjacent water storage in infiltration ponds or trenches, to allow re-infiltration of groundwater as near to its abstraction as practicable. Should any potential spillage or pollution incident be identified in any part of the Site, water testing would be undertaken prior to removal to a settlement pond or infiltration trench to ensure it has not been contaminated. Should contamination be identified, the water would be removed for treatment rather than allowed to infiltrate to groundwater. Any contaminated soils would be removed for offsite treatment and disposal. Water quality monitoring would be undertaken prior to and during the construction phase of the development. A Pollution Prevention Plan (PPP), Surface Water Management Plan (SWMP) and Emergency Incident Plan would be prepared prior to construction. It is anticipated that this would be secured by condition.	Snr Foreman	Daily

		Modifications to groundwater flow	Groundwater monitoring boreholes would be established within the proposed borrow pit area and at each turbine foundation prior to any construction work beginning, to a depth at least 1 m below the deepest expected excavation. Groundwater level monitoring would be undertaken to determine whether groundwater is present within the proposed borrow pit area and, if it is, at what level the seasonally highest groundwater table stands. Any groundwater within the borrow pit area or turbine foundations would be managed in line with best practice, with discharge via a settlement pond to allow any entrained sediment to be removed prior to discharge. Any required discharge licence would be obtained prior to excavation commencing. Excavation of cable trenches could lead to groundwater flow between catchments if the trenches act as preferential flow paths. This can be avoided by laying cables in disturbed ground adjacent to access tracks. In areas where cable routes cross up or down notable slopes, clay bunds or alternative impermeable barrier would be placed for every 0.5 m change in elevation along the length of the trench to minimise in-trench groundwater flow.	Snr Foreman	Daily
		Silt run-off/ excavation dewatering entering watercourses and affecting aquatic life	A temporary dam to control flow, will be used while crossing structures are installed. Over-pumping would only be used if flow conditions require. Surface water from the areas surrounding the turbine bases, all hardstanding areas and borrow pits would be prevented from entering the working areas by appropriate use of peripheral bunding and cut-off drains. These would help to divert clean water around and away from working areas. During works requiring excavation or stripping of ground, silt fencing or appropriate alternative sediment control protection measures would be installed on the downslope side of the working area to prevent inadvertent discharge of silty water into watercourses. Pre-construction installation of long-term drainage would provide an additional level of sediment control. All silt protection measures must be inspected weekly and maintained throughout the works. All engineering work adjacent to watercourses, including track construction and installation of watercourse crossings, would have appropriate sediment control measures established prior to groundworks. Vegetation would be retained along watercourse banks to act as additional protection. Minimise any areas of soil stripping and stockpiling. Tracking or washing out next to drains/surface waters must be avoided. Permit to Pump to be used to remove water from excavations, aligned to statutory guidance. If a discharge consent is required, then all conditions within the consent must be understood before commencement of dewatering. The temporary discharge of uncontaminated (wholly or mainly rainwater) from an excavation to surface can be undertaken without an environmental permit under the following Environment Agency Regulatory Position Statement 261. Natural Resources Wales / Find out if you need a permit for discharges to surface water and groundwater provides a link to Temporary dewatering from excavations to surface water: Regulatory Position Statement (RPS) 261. If necessary temporary bunding and/or settlement ponds will be installed to allow for isolation and onsite treatment of any sediment laden or contaminated water prior to managed discharge. Vehicle washdown facilities shall be appropriately managed to contain contaminants and regulate reuse or disposal of the water.	Snr Foreman	Daily
	Water quality	Works affecting watercourses	No works (in, over, under) will be undertaken within 20m of a watercourse bank without technical environmental advice regarding the requirement for a permit. Works can only proceed once appropriate mitigation (within technical environmental advice or permit conditions) has been installed and all conditions met.	Site Manager/ SHE Manager	Pre-construction planning
Cut and fill operations	Peat soils	Peat soil excavation, storage, reinstatement, erosion and compaction	A Peat Management Plan will be developed and adhered to by all Contractors to ensure that excavation, handling, stockpiling and reuse of peat soils are undertaken in accordance with best practice, in order to ensure that peat soils are retained in as good a condition as possible.	Snr Foreman	Daily
	Soil and peat soil managemen t	Mixing of soil strata and loss of structure	A Soil Management Plan will be developed detailing procedures for soil handling, storage and transfer (aligned to CIRIA Guidance: Sustainable management of waste soils and aggregates (RP1124)). The site works shall be designed to retain as much soil on site as possible whilst maintaining protection of human health and the environment. Excavated material surplus shall be minimised so far as practicable. The ECoW would maintain a schedule of reuse and restoration areas and would direct whether excavated peat soils should be stored in preparation for reuse when possible. Soils, peat soil turves/divots and peat soil would all be stored separately. The following outline good practice measures which would be applied to all areas of soil and peat soil storage: Excavated materials would not be stored immediately above excavation faces, in order to prevent overburden-induced failure. Local drainage lines, areas of very wet ground and locally steep slopes would be avoided for excavated material storage, including peat soils. Careful handling of upper-layer peat soil divots, from areas where peat soil turves cannot be excavated, would help to retain vegetated blocks the right way up. Catotelmic peat soil would be stored separately from vegetated peat soil blocks, in mounds up to 1 m high. Limited smoothing or ‘blading’ of stockpiled catotelmic peat soil, topsoil and subsoil would help to shed rainwater and prevent ponding of water on the stockpile. During periods of dry weather, light spraying of the temporary peat soil stores would be applied in order to minimise drying. All temporary storage areas for excavated soils and peat soils would be at least 50 m from any watercourse. Runoff from stored soils and peat soils would be managed to avoid impacts to habitats and watercourses. Where necessary, drainage control measures such as use of silt fences would be put in place. Monitoring of peat soil storage areas may be required during wet weather or snowmelt. This would be undertaken by the Contractor, with findings reported to the ECoW.	Site Manager/ SHE Manager	Pre-construction planning

Archaeology	Disturbance of archaeology	No ground intrusive works shall commence until a Written Scheme of Investigation agreed with local authority archaeological adviser (HCPA) and other relevant parties following consent and appropriate mitigations have been implemented. Where the peat survey has identified peat deeper than 20 cm in depth post-determination purposive peat sampling will be undertaken by a geoarchaeological specialist prior to the commencement of construction activity. Where the geophysical survey identifies anomalies of potential archaeological interest archaeological mitigation in the form of post-determination archaeological monitoring and recording or excavation would be carried out. Post-determination archaeological monitoring or excavation of Linear Feature (HA001) be undertaken during the construction phase by a suitably trained person. Monitoring would be carried out by Heneb: The Trust for Welsh Archaeology (WAT) to ensure that any measures set out by the Local Authority as a condition of consent remain appropriate and are adhered to.	Site Manager/ SHE Manager	Pre-construction planning
Flora and fauna	Invasive Species management	An invasive species management protocol will be developed and all management procedures to control the spread of invasive species will be adhered to by all Contractors.	Site Manager/ SHE Manager	Pre-construction planning
	Removal of habitat and disturbance to wildlife (In particular Brown Hare, reptiles, GCN)	A method statement detailing areas of suitable habitat for reptiles where precautionary measures would be implemented. These would include but are not limited to, pre-construction two stage cut of vegetation to dissuade reptiles from the area, destructive searches of any suitable hibernation areas (such as piles of rocks or debris) and ecological supervision. Enhancements to sub-optimal reptile habitat and monitoring post works would be undertaken. Any effects which could contravene the legislation for Brown Hare or Small pear-bordered Fritillary on site would be mitigated by the production of a method statement detailing areas of suitable habitat where precautionary measures would be implemented. These would include but are not limited to, pre-construction checks within suitable habitat, during any vegetation clearance works. Any impacts which could contravene the legislation for Great Crested Newts on site would be mitigated by an NRW licence for all works within 250 m of ponds with a population of Great Crested Newts. This would likely involve the implementation of newt fencing, translocation of newts, ecological clerk of works during construction and enhancements and monitoring post works.	Site Manager/ SHE Manager	Pre-construction planning
Use of natural resource	Depletion of natural resources	The environmental impact of materials will be considered in the procurement process. Ordered materials shall be managed to avoid over-ordering or spoilage of surplus materials. Surplus materials are to be reused on site where possible.	Project Manager/ Site Manager	Pre-construction planning/ monthly
Land contamination	Disturbance of contaminated ground	Known areas of contaminated land will be managed according to a method statement provided by a technical specialist. Where unknown contaminated land is disturbed, works will cease until analysis is completed by a technical specialist and appropriate mitigations have been implemented. Stockpiles of contaminated material must be situated on an impermeable surface at least 10m from any surface waters or drains, and run-off collected within a bund. Potentially contaminated water must be tested before dewatering. Contaminated water must be treated or discharged off site using an appropriate environmental permit. Contaminated water would be taken to a suitably permitted facility for treatment. It cannot be treated and discharged on site unless under and in accordance with an environmental permit.	Snr Foreman/ SHE Manager	Pre-construction planning/ daily

Muck-away and deliveries	Air emissions	Exhaust fumes affecting local residents/ environment	All equipment shall be inspected before use and any defects/faults reported to the Site Manager. All vehicle engines will be switched off when not in use to reduce particulate emissions. Exhaust systems will be fitted with particulate filters and catalytic converters as necessary.	Snr Foreman	Daily
	Traffic and transport	Wagon movements affecting local road users	Effective traffic management will be planned and implemented, where required in agreement with the Local Authority.	Site Manager/ SHE Manager	Pre-construction planning
		Mud/ dust on road affecting local road users and ecological receptors	A Dust Management Plan will be prepared and agreed with the Local Authority prior to construction, to include measures for controlling dust and general pollution. Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the Site. This may require the sweeper being continuously in use. Avoid any dry sweeping of large areas. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. Record all inspections of haul routes and any subsequent action in a site logbook. Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the Site where reasonably practicable). Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the Site exit, wherever site size and layout permits. Access gates to be located at least 10 m from receptors where possible.	Snr Foreman	Daily
Establishing haul roads/ hard-standings	Use of natural resource	Depletion of natural resources	The environmental impact of materials will be considered in the procurement process. Ordered materials shall be managed to avoid over-ordering or spoilage of surplus materials. Surplus materials are to be reused on site where possible.	Project Manager/ Site Manager	Pre-construction planning/ monthly

Civils					
Laying concrete foundations and hardstandings for crane, turbine substation, control building and associated infrastructure	Use of natural resource	Depletion of natural resources	The environmental impact of materials will be considered in the procurement process. Ordered materials shall be managed to avoid over-ordering. Surplus materials are to be reused on site where possible.	Project Manager/ Site Manager	Pre-construction planning/ monthly
	Water quality	Works affecting watercourses	No works (in, over, under) will be undertaken within 20m of a watercourse bank without technical environmental advice regarding the requirement for a permit. Works can only proceed once appropriate mitigation (within technical environmental advice or permit conditions) has been installed and all conditions met.	Site Manager/ SHE Manager	Pre-construction planning
	Release to water/ groundwater / land	Concrete batching	Concrete batching would take place within one designated location adjacent to the substation, in an area with protective bunding to prevent alkaline water escaping into the environment. Water contained in the bund would be treated and reused within the concrete batching process as far as possible, and disposal would be via tanker to an offsite treatment facility.	Snr Foreman	Daily
		Concrete wash-out water incorrectly treated and disposed of, polluting receiving environment	All drains adjacent or near to concreting works shall be covered with Gully Guards before commencing mixing. Concrete wagons should be instructed to not wash-out onsite. The treatment and discharge of any contaminated effluent, including concrete washout water, will require an environmental permit from Natural Resources Wales. A designated wash-out container will be provided to clean the delivery chute. Concrete washings must be treated and tested prior to discharge onsite. Washing-out of concrete mixing plant would only be permitted in one designated location with protective bunding and a dedicated and contained drainage system to ensure that wash-out water can be suitably treated to reduce alkalinity and suspended sediment load prior to removal offsite by tanker for treatment and disposal at a suitably licensed location.	Snr Foreman	Daily
Concrete wagon movements	Traffic and transport	Wagon movements affecting local road users	Effective traffic management will be planned and implemented, where required in agreement with the Local Authority.	Site Manager/ SHE Manager	Pre-construction planning
		Mud/ dust on road affecting local road users	A Dust Management Plan will be prepared and agreed with the Local Authority prior to construction, to include measures for controlling dust and general pollution. Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the Site. This may require the sweeper being continuously in use. Avoid any dry sweeping of large areas. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. Record all inspections of haul routes and any subsequent action in a site logbook. Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the Site where reasonably practicable). Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the Site exit, wherever site size and layout permits. Access gates to be located at least 10 m from receptors where possible.	Snr Foreman	Daily
Piling	Land contamination	Disturbance of contaminated ground	Known areas of contaminated land will be managed according to a method statement provided by a technical specialist. Where unknown contaminated land is disturbed, works will cease until analysis is completed by a technical specialist and appropriate mitigations have been implemented. Stockpiles of contaminated material must be situated on an impermeable surface at least 10m from any surface waters or drains, and run-off collected within a bund. Potentially contaminated water must be tested before dewatering. Contaminated water must be treated or discharged off site using an appropriate environmental permit. Contaminated water would be taken to a suitably permitted facility for treatment. It cannot be treated and discharged on site unless under and in accordance with an environmental permit.	Snr Foreman/ SHE Manager	Pre-construction planning/ daily

	Archaeology	Disturbance of archaeology	No ground intrusive works shall commence until a Written Scheme of Investigation agreed with local authority archaeological adviser (HCPA) and other relevant parties following consent and appropriate mitigations have been implemented. Where the peat survey has identified peat deeper than 20 cm in depth post-determination purposive peat sampling will be undertaken by a geoarchaeological specialist prior to the commencement of construction activity. Where the geophysical survey identifies anomalies of potential archaeological interest archaeological mitigation in the form of post-determination archaeological monitoring and recording or excavation would be carried out. Post-determination archaeological monitoring or excavation of Linear Feature (HA001) be undertaken during the construction phase by a suitably trained person. Monitoring would be carried out by Heneb: The Trust for Welsh Archaeology (WAT) to ensure that any measures set out by the Local Authority as a condition of consent remain appropriate and are adhered to.	Site Manager/ SHE Manager	Pre-construction planning
	Release to groundwater	Groundwater modification	Excavation of cable trenches could lead to groundwater flow between catchments if the trenches act as preferential flow paths. This can be avoided by laying cables in disturbed ground adjacent to access tracks. In areas where cable routes cross up or down notable slopes, clay bunds or alternative impermeable barrier would be placed for every 0.5m change in elevation along the length of the trench to minimise in-trench groundwater flow.	Site Manager/ SHE Manager	Pre-construction planning
Waste management					
Waste management	Duty of Care	Non compliance to legislation	Wastes shall be collected by a licenced waste carrier. A copy of all Waste 'Duty of Care' documentation shall be held on site. Duty of Care documentation must be completed for all waste transfers and copies provided to the Client every week. Waste transfer notes or hazardous waste consignment notes and Duty of Care procedures are to be audited regularly (monthly as a minimum). Soil and recycled aggregate transfers shall be carried out in accordance with an approved Materials Management Plan and all transfer tickets must be retained on site. A monthly waste audit and reporting system will be implemented to track material arisings, disposal routes, and recycling performance.	Site Manager/ SHE Manager	Monthly/ Weekly/ Daily
	Segregation	Cross contamination of materials	Where possible, all waste shall be segregated on site. Skips shall be provided to segregate wastes including plasterboard, timber and metal. A designated container[s] shall be provided for hazardous wastes, which and must be clearly labelled. Hazardous waste streams must be segregated and stored in accordance to their safety data sheets. All road sweepings must be removed from site accompanied with a completed waste transfer note from the driver. If road sweepings are inadvertently discharged on site, these should be disposed of appropriately. All timber is to be segregated on site and sent for recycling. All metal is to be segregated on site and sent for recycling. All mixed waste removed from site shall be taken to a material recycling facility for further segregation to maximise recycling and recovery.	Site Manager/ Snr Foreman	Pre-construction planning/ Weekly
Demobilsation and Reinstatement					
Site reinstatement	Soil management	Mixing of soil strata and loss of structure	A Soil Management Plan will be developed detailing procedures for soil handling, storage and transfer (aligned to CIRIA Guidance: Sustainable management of waste soils and aggregates (RP1124)). The site works shall be designed to retain as much soil on site as possible whilst maintaining protection of human health and the environment. Excavated material surplus shall be minimised so far as practicable. All traffic routes would be clearly demarcated, and vehicles would not be permitted access outside these areas. Only tracked or low ground pressure vehicles would be permitted access to unstripped ground. Soil stripping would be undertaken with care and would be restricted to as small a working area as practicable. Topsoil would be removed and laid in a storage bund, up to 2m in height, on unstripped ground adjacent to the working area. It would be attempted to retain the turf layer vegetation-side-up where possible, although ground conditions may make this challenging. Subsoils and superficial geology deposits would be removed subsequently and would be laid in storage bunds, also up to 2m in height, clearly separated from the topsoil bund. Care would be taken to maintain separate stockpiles for separate soil types in order to preserve the soil quality. Limited smoothing or 'blading' of stockpiled soils would be undertaken to help shed rainwater and prevent ponding of water on the stockpile. Bunds on notably sloping ground would have sediment control measures installed near the base, on the downslope side, to collect and retain any sediment mobilised by rainfall. Stockpiles shall be covered, seeded or fenced (as appropriate) to prevent wind whipping. Subsoil shall be decompacted prior to the placement of topsoil; The physical condition of the soil shall be assessed when placed to ensure the entire soil profile will promote sufficient aeration, drainage and growth; Anaerobic topsoil shall be fully aerated before commencing with any planting or seeding; and Following construction and disturbance of soils, the soil health shall be closely monitored in a period of aftercare, with deficiencies being corrected as soon as they are detected. During the excavation works, vigilance shall be maintained to identify ironpan horizons and to demarcate their presence. Where these remain extant (e.g. on the edge of excavated areas), the reinstatement of soils shall take account of the drainage impediment and potential for preferential flow path creation that may occur where iron pans abut newly placed soil absent of iron pans.	Site Manager/ SHE Manager	Pre-construction planning

		Borrow pit restoration	The soils stripped from the borrow pit shall be stored within the borrow pit search area for the duration of the working of the borrow pit, and then used to restore the borrow pit. These soils shall be stored and handled according to the same protocols as that set out for all site soils in this document.	Site Manager/ SHE Manager	Pre-construction planning
		Temporary material soil storage areas (if required)	Once removed, surfaces will be decompacted and soils reinstated in line with the Soil Management Plan.	Site Manager/ SHE Manager	Pre-construction planning
		Peat soils	A Peat Management Plan will be developed and adhered to by all Contractors to ensure that excavation, handling, stockpiling and reuse of peat soils are undertaken in accordance with best practice, in order to ensure that peat soils are retained in as good a condition as possible. Reinstatement of peat soil turves and vegetated peat soil divots would ensure that surface re-vegetation is encouraged as early as possible. Vegetated peat soil must only be used for surface layer reinstatement. Re-seeding of any significant areas of bare peat soil would be undertaken with a suitable species mix appropriate to the surrounding habitats. Careful planning of reinstatement should minimise areas of bare peat soil by appropriate distribution of vegetated peat soil turves and divots. Grazing by livestock and deer may need to be prevented in sensitive areas, by selective use of fencing, until re-vegetation has become established. In the event that stored peat soil becomes dewatered or desiccated, this material would not be exposed in the upper part of any reinstatement area in order to minimise any further character loss. Storage of excavated peat soil would be minimised in order to prevent or limit dewatering and desiccation.	Site Manager/ SHE Manager	Pre-construction planning
	Ecology	ECoW supervision.	A suitably qualified Ecological Clerk of Works (ECoW) would be employed for the duration of the construction and reinstatement periods, to ensure ornithological interests are safeguarded, although this may not necessarily be a full-time role throughout. The role of the ECoW would include the following tasks: Provide toolbox talks and information to all staff on-site, so staff are aware of the ornithological sensitives of the Site and the legal implications of not complying with agreed working practices; Agree and monitor measures designed to minimise damage to retained habitats; Undertake pre-and during construction surveys and advise on ornithological issues and working restrictions (including compliance monitoring) where required, ; and Complete Site-supervision works as required, in relation to sensitive habitats and protected ornithological species.	Site Manager/ SHE Manager	Pre-construction planning
Demobilisation	Traffic and transport	Wagon movements affecting local road users	Effective traffic management will be planned and implemented, where required in agreement with the Local Authority.	Site Manager/ SHE Manager	Pre-construction planning
		Mud/ dust on road affecting local road users	A Dust Management Plan will be prepared and agreed with the Local Authority prior to construction, to include measures for controlling dust and general pollution. Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the Site. This may require the sweeper being continuously in use. Avoid any dry sweeping of large areas. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. Record all inspections of haul routes and any subsequent action in a site logbook. Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the Site where reasonably practicable). Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the Site exit, wherever site size and layout permits. Access gates to be located at least 10 m from receptors where possible.	Snr Foreman	Daily

ANNEX 4 - EMERGENCY PREPAREDNESS AND RESPONSE

Emergency Preparedness

Spill Kits

Spill kits capable of dealing with hydrocarbon and chemical spills shall be available at all worksites. Each storage location shall be clearly visible to the workforce, for instance by deploying clear signage.

It is recommended that a spill kit is provided within the construction compound, substation, water crossings, fuel storage point and COSHH store.

The spill kit contents shall include absorbent pads, absorbent booms, absorbent granules and hazardous waste disposal sacks as a minimum. Regular checks of the spill kits shall be completed to ensure they remain adequately stocked to deal with environmental incidents.

Spill drills shall be performed periodically to confirm that the workforce can effectively contain and clear up potentially polluting spillages. All drills will be documented and details kept on record for the duration of the works.

Extreme Weather

The Principal Contractor's Site Manager shall register to receive Met Office weather warnings. All warnings issued by the Met Office with the potential to impact upon the works shall be communicated by the Site Manager to the workforce in a timely manner so that measures can be implemented where necessary. In the absence of the Site Manager the Environment Manager shall also receive and act upon all alerts.

Incident Reporting and Investigation

Reporting

All incidents, including near misses, shall be classified according to the categories outlined in the table below. All categories of environmental incident shall be reported by the Principal Contractor to the Applicant as outlined below.

Incident Classification

Incident Classification	Definition
Near Miss	An event, controlled through implementation of an effective incident control measure (e.g. drip tray used, effective use of noise barrier).

Minor Environmental Incident	Incidents that have caused minor harm or damage to the environment e.g. • A minor fuel spill below 20 litres onto ground which is immediately cleared; • A minor spill of a chemical **not** classified as presenting an ecotoxic risk; • Exceeding noise levels; • Silt runoff from site which does **not** enter into a surface water feature; or Excess dust emissions.
Major Environmental Incident	Incident that have caused or may cause significant harm or damage to the environment e.g. • A minor fuel spill which impacts a sensitive land feature, a water, or drains; • A major fuel spillage or 20 litres; • Any spillage of a chemical which is classified as presenting an ecotoxic risk; • Silt runoff from site which enters a water feature; or Receipt of a nuisance complaint.

Minor incidents and near misses must be reported to the Applicant within 24 hours. Major incidents must be reported to the Project Manager as soon as reasonably practicable.

The contractor, after informing the Applicant, shall report all environmental incidents that are required to be reported to NRW and/or to any other relevant statutory or regulatory bodies. Emergency contact details are outlined in in the table below. The internal notification process will not delay any reporting of incidents to NRW and any other relevant statutory or regulatory bodies.

Investigation

Reporting of an incident to the Project Manager shall, where necessary, commence the incident investigation which shall be jointly conducted between the Applicant and its contactor[s].

The Principal Contractor shall prepare an investigation report for all environmental incidents. The report is to include:

- Summary of the environmental incident, describing the:
  - Nature of the incident;
  - Details of any pollutant released including the type and quantity of pollutant released;
  - Location for the incident (e.g. grid reference);
- Receptors that were or could have been impacted
- An analysis of what led to the incident occurring

- Summary of immediate actions taken to mitigate the incident
- Summary of any remedial action required
- Lessons learned and future measures or actions to be implemented.

The Applicant will verify the incident investigation and agree with its contractors any further actions which are to be implemented to prevent a reoccurrence of comparable incidents. A timeline for the implementation of all actions shall be established and the contractors shall provide details of when they have been implemented.

An incident investigation shall be complete when all details have been recorded on file.

Emergency Contacts

In the event of an emergency occurrence at the Site, the Applicant and its contractors shall determine the relevant statutory and regulatory bodies that must be notified. Notification shall be in accordance with the measures outlined above.

List of Emergency Contacts

Emergency Contacts	
Contact	**Contact Details**
Client Site Manager	TBC [prior to construction]
Contractor Site Manager	TBC [prior to construction]
Contractor Environmental Advisor	TBC [prior to construction]
NRW Emergency Number	0300 065 3000
Health and Safety Executive (HSE Construction)	0300 003 1647
Gwynedd Council	01766 771000
Major Spill Emergency Response – e.g. RSK Response	0333 999 7687
Fire	999 / 112
Police	999 / 112
Ambulance	999 / 112

Incident Response

All pollution incidents should be managed through the STOP – CONTAIN – NOTIFY concept.

As soon as an incident is identified, the first action should be **STOP** and prevent further discharge to drainage/river/ground.

CONTAIN may constitute control of discharge in the event of a spill, or cessation of works if it is the works that are resulting in the incident, e.g. halting excavations until silt runoff is contained. It is recognised that due to personal health and safety risks it may not always be safe to stop the source of the spill, for instance if a significant volume of an unidentified substance has been released.

NOTIFICATION should take place as soon as practicable, and frequently can take place while further release is being stopped or while a spill is being contained. The emergency contact numbers outlined above should be used.

Oil, fuel or chemical spill to ground

i. Wearing protective clothing, prevent further release at source e.g. switch off tap/valve, correct leaking drum and make the area safe.
ii. If the spill is migrating, creating a temporary bund to prevent further spread by using spill kit materials / sandbags.
iii. If drains or field ditches are located nearby, install drain seals / deploy additional spill kit materials to prevent the spill discharging to the drain or ditch.
iv. Apply absorbent granules or pads (available from spill kit) to the affected area.
v. The Principal Contractor will notify NRW of the incident and communicate the information regarding the nature and scale.. The following information should be included in the notification:
    - Time of discharge;
    - Type/quantity of material discharged;
    - Location of discharge; and
    - Site contact details.
vi. The Applicant will notify the Local Planning Authority regarding the nature and scale of the incident as per the requirements of the Environmental Damage (England and Wales) Regulations 2015.
vii. Containment measures should remain in place until the nature and extent of the contamination can be assessed and a remediation strategy must be prepared.

All impacted materials shall be disposed of in accordance with relevant legislative and regulatory requirements and the Duty of Care requirements.

Oil, fuel or chemical to surface water feature

i. Wearing protective clothing, prevent further release at source e.g. switch off tap/valve, correct leaking drum and make the area safe.
ii. If the source is not readily identifiable, contain first (see below) then identify and prevent further release at source.

iii. Immediately deploy appropriately sized boom from nearest spill kit across affected surface water feature. Use stakes to attach it to the sides of the surface water feature. Tie booms together to increase length if required.
iv. Supplement with additional booms across the surface water feature, as required, to contain any migration of the spill not halted by the first installation.
v. The Principal Contractor shall notify NRW of the incident and communicate the information regarding the nature and scale. The following information should be included in the notification:
    - Time of discharge;
    - Type/quantity of material discharge to surface water feature;
    - Location of discharge; and
    - Site contact details.

All impacted materials will be disposed of in accordance with relevant legislative and regulatory requirements and relevant Duty of Care requirements.

Oil, fuel or chemical spill to drainage system

i. Wearing protective clothing, prevent further release at source e.g. switch off tap/valve, correct leaking drum and make the area safe.
ii. If source is not readily identifiable, contain the visible pollutant first, then identify and prevent further release at source.
iii. Immediately deploy appropriate drain cover(s) to affected gullies.
iv. Supplement with booms around the gully to contain any migration of spill.
v. The Principal Contractor shall notify NRW and Dŵr Cymru Welsh Water regarding the nature and scale of incident. The following information should be included in the notification:
    - Time of discharge;
    - Type/quantity of material discharged to the drain;
    - Location of discharge, specifically which drain; and
    - Site contact details.

All impacted materials shall be disposed of in accordance with relevant legislative and regulatory requirements and relevant Duty of Care requirements.

Discovery of unexpected contamination

i. On the discovery of unexpected contamination, the Principal Contractor will immediately halt works in the area.
ii. If impacted materials have already been removed they shall be returned to the excavation or placed on to a membrane, e.g. a damp proof membrane to prevent migration of the contaminant to another area.
iii. Contractor to report the situation to the Applicant.

iv. Arrangements will be made between the Principal Contractor and the Applicant for samples of the contamination to be collected and tested on fast turnaround.
v. Contractor to only continue with works in the area once the test results have confirmed the contaminant and a safe means of working has been established.

The Principal Contractor shall be free to continue works in areas unaffected by the contamination, BUT the Principal Contractor will not speculatively continue to excavate material to find the extent of the contamination without supervision from a geo-environmental engineer.

All impacted materials will be disposed of in accordance with relevant legislative and regulatory requirements and relevant Duty of Care requirements.

Explosion / Fire Procedure

Means to raise the alarm in the event of a fire shall be available at the points of work. An assembly point shall be designated a safe distance from the active works locations and will be communicated to all members of the workforce before works commence. The workforce shall assemble at the point for a roll-call and to receive further instructions. All individuals at the worksite, including visitors, will be obliged to immediately sign in on arrival.

Explosion/fire incidents should also be dealt with through health and safety procedures. In the event that a fire is detected or an explosion occurs:

i. Notify the emergency services and evacuate the area.
ii. Attempt to tackle the fire with site equipment only which it is safe to do so.
iii. Ensure that pollution of nearby water bodies including surface water drainage from fire control water or other substances is minimised. Where possible and safe to do so, any site drainage systems should be protected through the deployment of drain seals/ spill kit materials to ensure any firefighting waters are captured and can be disposed of appropriately.
iv. At a time when it is acceptable to do so, NRW shall be notified regarding the nature and scale of incident. The following information should be included in the notification:
    - Nature of the incident;
    - Time and date of the incident;
    - Quantity of fire control water discharged to surface water feature/drainage, where relevant;
    - Location of discharge; and
    - Site contact details.

Silt

In the event of an unexpected discharge of silty water, then:

i. Prevent further release at source e.g. cease dewatering the excavations.
ii. Contain silt and protect sensitive receptors from further discharge:
    - If a drain is located nearby, install drain seals or deploy spill kit materials to prevent discharge.

- If silt flow is in the direction of surface water features deploy silt fencing around the surface feature.
- If silt is being generated by runoff from stockpiles deploy silt fencing or move soil to form a bund at the base to prevent further silt laden runoff from the stockpile.

iii. If silt is discharged without prior approval NRW shall be notified. If the silt discharge enters the drainage system Dŵr Cymru Welsh Water shall also be notified regarding the nature and scale of incident. The following information should be included in all notifications:

- Time of discharge;
- Type/quantity of material discharged;
- Location of discharge, e.g. which drain or surface water feature; and
- Site contact details.

Complaint Over a Nuisance

This procedure should be followed for all nuisance complaints include noise, dust and light.

i. Immediately stop the activity leading to the complaint; or where not possible to entirely stop the activity reduce it to the lowest possible level e.g. shut off all non-essential plant.
ii. Remain polite and courteous. If able to resolve the issue through discussion with the complainant, then determine what action is needed and put it into practice.
iii. Record the details of the complainant including their name, contact details and address. Contractors shall report the details of the complaint and the complainant to the Applicant.
iv. The Principal Contractor and the Applicant will register the complaint on a Complaints Log.
v. The Applicant will act on the complaint and remedial actions shall be put in place within 24 hours.

Contamination of or by Waste Materials

i. Assess whether the area needs to be evacuated, such as if fumes are being given off.
ii. Assess whether the damage can be undone through segregation.
iii. Complete a risk assessment for the task including consideration of any COSHH risks.
iv. It is safe to do so segregate the waste. If it is not safe to do so, then the full waste quantity is to be consigned as hazardous waste.
v. The Principal Contractor is to report the incident to the Applicant.
vi. Waste is to be collected from site in accordance with normal practice.

Discovery of Archaeological Artefact or Heritage Feature

i. Immediately stop works in the area of the artefact or feature.
ii. Report to Archaeological Clerk of Works (ACoW) and follow their instructions.
iii. Ensure the area is isolated from interference by erecting fencing around the discovery.
iv. Prevent vehicles from navigating through this area.