national**grid**

5.28

Environmental Statement Document 5.28 Schedule of Mitigation

National Grid (North Wales Connection Project)

Regulation 5(2)(q) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

national**grid**

North Wales Connection Project

Volume 5

Document 5.28 Chapter 28 Schedule of Mitigation

National Grid National Grid House Warwick Technology Park Gallows Hill Warwick CV34 6DA

Final September 2018

Page intentionally blank

	Document Control				
Document P	roperties				
Organisatior	ı	AECOM			
Author		Jane Knowles	Jane Knowles		
Approved by		Nigel Pilkingt	on		
Title		Schedule of Mitigation			
Document Reference		Document 5.28			
Version Hist	ory				
Date	Version	Status	Description/Changes		
September 2018	Rev A	Final	Final for submission		

Page intentionally blank

Contents

1	Introduction	1
1.1	Introduction	1
1.2	Mitigation Measures	2
1.3	Schedule of Mitigation	3
2	Landscape	4
2.1	Introduction	4
2.2	Landscape Assessment Control and Management Measures and Mitigation Measures	on 4
3	Visual	32
3.1	Introduction	32
3.2	Visual Assessment Control and Management Measures and Mitigation Measures	33
4	Ecology and Nature Conservation	99
4.1	Introduction	99
4.2	Ecology and nature Conservation Control and Management Measures an Mitigation Measures	id 100
5	Historic Environment	205
5.1	Introduction	205
5.2	Historic Environment Control and Management Measures and Mitigation Measures	205
6	Geology, Hydrogeology and Ground Conditions	270
6.1	Introduction	270
6.2	Geology, Hyrogeology and Ground Condiations Control and Managemen Measures and Mitigation Measures	t 270
7	Water Quality Resources and Flood Risk	309
7.1	Introduction	309
7.2	Water Quality, Resources and Flood Risk Control and Management Measures and Mitigation Measures	310
8	Traffic and Transport	570
8.1	Introduction	570
8.2	Traffic and Tranbsport Control and Management Measures and Mitigation Measures	ר 570
9		578
		570
9.1	Introduction	578

10	Construction Noise & Vibration	598
10.1	Introduction	598
10.2	Construction Noise and Vibration Control and Management Measures an Mitigation Measures	d 598
11	Operational Noise	638
11.1	Introduction	638
11.2	Operational Noise Control and Management Measures and Mitigation	
	Measures	638
12	Socio Economics	641
12.1	Introduction	641
12.2	Socio-Economic Control and Management Measures and Mitigation	
	Measures	643
13	Agriculture	648
13.1	Introduction	648
13.2	Agriculture Control and Management Measures and Mitigation Measures	649

APPENDICES		
Appendix 28.1	Appendix 28.1 Legislation Compliance Audit	Document 5.28.2.1

1 Introduction

1.1 INTRODUCTION

- 1.1.1 This schedule of mitigation provides a summary of the measures proposed to mitigate potential environmental effects identified in the Environmental Statement (ES) that are likely to result from the construction, operation, maintenance and decommissioning of Proposed Development and identifies where within the draft Development Consent Order (DCO) (**Document 2.1**) the mitigation is secured.
- 1.1.2 A description of the Proposed Development is provided in ES Chapter 3 Description of the Proposed Development (**Document 5.3**) and Chapter 4 Construction, Operation, Maintenance and Decommissioning (**Document 5.4**). This schedule of mitigation draws on the ES chapters shown in Table 1 below:

Table 1 (Document	Technical ts 5.7-5.18)	Chapters of the Environmental Statement
Document Reference	ES Chapter	Document
5.7	7	Landscape Assessment
5.8	8	Visual Assessment
5.9	9	Ecology and Nature Conservation
5.10	10	Historic Environment
5.11	11	Geology, Hydrogeology and Ground Conditions
5.12	12	Water Quality, Resources and Flood Risk
5.13	13	Traffic and Transport
5.14	14	Air Quality

Table 1 (Document	Technical ts 5.7-5.18)	Chapters of the Environmental Statement
Document Reference	ES Chapter	Document
5.15	15	Construction Noise and Vibration
5.16	16	Operational Noise
5.17	17	Socio-Economics
5.18	18	Agriculture

1.2 MITIGATION MEASURES

- 1.2.1 For the purposes of this ES mitigation has been categorised as follows:
 - Mitigation by Design (DM): These are measures which have been built into the design, such as the design of the overhead line (OHL), Limits of Deviation (LOD) to avoid certain receptors and the location of the Tunnel Head House and Cable Sealing End Compound (THH/CSEC) sites.
 - **Control and Management Measures (CMM):** These are measures which are included within the Construction Environmental Management Plan (CEMP) and other control and management plans such as the use of road sweepers and the implementation of measures to control silt laden runoff during construction etc.
 - **Mitigation Measures (MM):** These are measures over and above mitigation by design, for example anything that has been added to the design purely to mitigate an effect such as landscape planting.
- 1.2.2 The committed mitigation which aims to eliminate or reduce the potential effects is described in more detail in section 9 of each of the technical chapters of the ES (**Documents 5.7 to 5.18**). Design measures, for example the sensitive routeing of the OHL and careful siting of the THH/CSECs, have been critical in avoiding or reducing a number of potential environmental effects. Where the design of the Proposed Development has been unable to resolve potentially significant effects, further mitigation measures have been identified.

1.2.3 Mitigation has primarily been developed to address the potentially significant effects; however commitments are also made to reduce effects that are considered to be minor or negligible.

1.3 SCHEDULE OF MITIGATION

- 1.3.1 Section 9 in each technical chapter (Documents 5.7 to 5.18) sets out the relevant mitigation by design, control and management measures and mitigation measures the chapter relies on. Sections 2 to 13 below provide tables summarising the type or source of effects for each receptor where a potential effect has been identified in ES Chapters 7 to 18 (Documents 5.7 to 5.18), the mitigation proposed and where each of the measures are secured. Where reference is made to the DCO (Document 2.1) in sections 2 to 13 this refers to the draft DCO (Document 2.1) as submitted with the DCO Application.
- 1.3.2 Mitigation by design is not presented in each of the tables in sections 2 to 13 below as this is built into the design as set out on the Works Plans (Document 4.4). Additionally, the Design Plans (Document 4.13) are secured by Requirement 3 (Design and Limits of Deviation) of the DCO (Document 2.1).
- 1.3.3 Whilst mitigation by design is not included in the tables, a summary of the relevant mitigation by design for that chapter is provided in each section.

2 Landscape

2.1 INTRODUCTION

2.1.1 Control and management measures and mitigation measures required to mitigate the potential landscape effects from the construction, operation, maintenance and decommissioning of the Proposed Development are set out in section 9 of Chapter 7 Landscape (**Document 5.7**) and Table 2 identifies where each of these measures are secured.

Relevant Mitigation by Design

- 2.1.2 Mitigation by design has been integral to reducing the landscape effects of the Proposed Development. Measures that have been incorporated into the design have included:
 - Sensitive routeing and siting of infrastructure (as per the Design Report, **Document 7.14**);
 - Undergrounding of a 4 kilometre (km) section of the Proposed Development which includes the Menai Strait and Anglesey Area of Outstanding Natural Beauty (AONB); and
 - Use of low height pylons on entry and exit to and from the CSECs to reduce their perceptibility.

2.2 LANDSCAPE ASSESSMENT CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

2.2.1 Table 2 identifies where each of these measures are secured.

Table 2: Summary o	of Landscape Ass	essment Control and Management Measures & Mitigation M	easures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
Tree Cover	Short term, direct loss and/ or alteration of landscape elements Long term, direct loss and/ or alteration of landscape elements	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). The Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).
		An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify trees and hedgerows for removal. All retained trees and	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 2: Summary o	of Landscape Ass	essment Control and Management Measures & Mitigation M	easures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	The Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction of roots by plant and machinery.	Measure TH13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Section 1.2 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to retain and reduce as far as practicable groups of trees.	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document

Table 2: Summary o	able 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures		
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			2.1).
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; reinstatement measures in accordance with Figure 1 of the CEMP (Document 7.4.1.1); and details of an auditable system of compliance. 	Measure TN14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). The Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the

Table 2: Summary o	able 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures		
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			DCO (Document 2.1).
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out within working areas. Where required this will include a photographic record, written description and topographical survey, which will be used to ensure appropriate reinstatement of land.	Measure R2 of the (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).
		Reinstatement will be in accordance with the relevant parts of the Biodiversity Mitigation Strategy (BMS) (Document 7.7)	Measure R3 of the CEMP (Document 7.4)

Table 2: Summary o	Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures		
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		including making good of any damage or disturbance to any soil structure, native or other planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	<pre>which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).</pre>
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			2.1).	
		Corridor planted up where an existing low voltage OHL is being removed in Section A.	Mitigation planting scheme as set out on	
		Planting of a copse adjacent to the B5110 in Section C.	Landscape Mitigation Plans (Documents	
		Replanting of a clearing within Gylched Covert in Section D	5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document	
		An area of planting at Ceint in Section D		
		Planting around Braint THH/CSEC, in Section F.	2.1).	
		Planting around Tŷ Fodol THH/CSEC, in Section F.		
		Planting around Pentir Substation extension in Section F		
Field Boundaries	Short term, direct loss and/ or alteration of landscape	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	elements Long term, direct loss and/ or alteration of landscape elements		of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify trees and hedgerows for removal. All retained trees and hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			DCO (Document 2.1).	
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction of roots by plant and machinery.	Measure TH13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Section 1.3 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to reduce as far as practicable temporary loss of important hedgerows.	Schedule of Environmental Commitments (Document 7.4.2.1)	
		Section 1.5 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to reduce as far as practicable temporary loss of Potential Cloddiau and ensure re instatement is undertaken in accordance with the Technical Specification for Welsh Cloddiau.	which is secured through Requirement 6 of the DCO (Document 2.1).	
		The Tree and Hedgerow Protection Strategy will include:a schedule of all trees and hedgerows to be removed;	Measure TN14 of the CEMP (Document 7.4) which is secured	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		 A Boundary Features Protection Strategy will be produced; this will include: Identification of all Cloddiau within the Order Limits to be removed and retained; a schedule of all boundaries to be removed; A photographic record of all boundaries to be removed so that they can be reinstated accordingly; a schedule of all boundaries to be retained including specification for temporary physical protection; A reinstatement plan for all boundaries which will include 	Measure TN21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		the Technical Specification for Welsh Cloddiau ¹ ; and		
		details of an auditable system of compliance.		
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Landform	Short term, direct loss and/ or alteration of landscape elements	Section 1.6 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to avoid distinctive and more sensitive rocky outcrops across the study area.	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document	

¹ The Dry Stone Walling Association of Great Britain has produced a leaflet on the Technical Specifications for Welsh Cloddiau. Since types of cloddiau vary, details will be made specific to the location of the proposed cloddiau using the leaflet as guidance.

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			2.1).	
	Long term, direct loss and/ or alteration of landscape	Braint and Tŷ Fodol THH/CSEC would be re-contoured to help screen the above ground infrastructure and would blend in with surrounding landform.	Mitigation planting scheme as set out on the Indicative Landscape Mitigation	
	elements	Pentir Substation extension would be re-contoured to help screen the above ground infrastructure and would blend in with surrounding landform.	Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
Visual and Sensory Aspect Areas (VSAA)	Direct change to landscape character Perceptual	Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	change to landscape	Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the	Measure GP86 of the CEMP (Document 7.4)	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	character	safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.	which is secured through Requirement 6 of the DCO (Document 2.1).	
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and	Measure GP87 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		applicable to do so in relation to construction works.		
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	Measure TN14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		 A Boundary Features Protection Strategy will be produced; this will include: Identification of all Cloddiau within the Order Limits to be removed and retained; a schedule of all boundaries to be removed; 	Measure TN21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 A photographic record of all boundaries to be removed so that they can be reinstated accordingly; a schedule of all boundaries to be retained including specification for temporary physical protection; A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and details of an auditable system of compliance. To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out within working areas. Where required, this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Measure R2 of the (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans
			(Document 7.4.1.1)

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			which are secured by Requirement 6 of the DCO (Document 2.1).	
		Reinstatement will be in accordance with the relevant parts of the BMS (Document 7.7) include making good of any damage or disturbance to any soil structure, native or other planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	Measure R3 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			DCO (Document 2.1).	
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Corridor planted up where an existing low voltage OHL is being removed in Section A.	Mitigation planting scheme as set out on the Indicative	
		Planting of a copse adjacent to the B5110 in Section C.	Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
		Replanting of a clearing within Gylched Covert in Section D		
		An area of planting at Ceint in Section D		
		Planting around Braint THH/CSEC, in Section F.		
		Planting around Tŷ Fodol THH/CSEC, in Section F.		

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Planting around Pentir Substation extension in Section F		
Landscape Character Areas(LCAs)	Direct change to landscape character Perceptual change to landscape character	Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.	Measure GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Implementation will comply with the Institute of Lighting	Measure GP87 of the	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Engineers Guidance Notes for the Reduction of Obtrusive Light (2005) in so far as it is reasonably practicable and applicable to construction works When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and applicable to do so in relation to construction works.	CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent 	Measure TN14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 damage / compaction of roots by machinery; A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
	 A Boundary Features Protection Strategy will be produced; this will include: Identification of all Cloddiau within the Order Limits to be removed and retained; a schedule of all boundaries to be removed; A photographic record of all boundaries to be removed so that they can be reinstated accordingly; a schedule of all boundaries to be retained including specification for temporary physical protection; A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and details of an auditable system of compliance. 	Measure TN21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out within working areas. Where	Measure R2 of the (Document 7.4) which is secured through	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		required, this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).
		Reinstatement will include making good of any damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	Measure R3 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6	
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Corridor planted up where an existing low voltage OHL is being removed in Section A.	Mitigation planting scheme (Document	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Planting of a copse adjacent to the B5110 in Section C.	5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
		Replanting of a clearing within Gylched Covert in Section D		
		An area of planting at Ceint in Section D		
		Planting around Braint THH/CSEC, in Section F.		
		Planting around Tŷ Fodol THH/CSEC, in Section F.		
		Planting around Pentir Substation extension in Section F		
Special Landscape Areas (SLA)	dscape Direct change to landscape character Perceptual change to landscape	Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the	Measure GP86 of the CEMP (Document 7.4)	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	character	safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.	which is secured through Requirement 6 of the DCO (Document 2.1).	
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial slighting on bats will be followed in so far as it is reasonably practicable and	Measure GP87 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		applicable to do so in relation to construction works.		
		Corridor planted up where an existing low voltage OHL is being removed in Section A.	Mitigation planting scheme as set out on the Indicative	
		Planting of a copse adjacent to the B5110 in Section C.	Landscape Mitigation Plans (Document 5.7.1.12-5.7.1.16) which is secured	
		Replanting of a clearing within Gylched Covert in Section D		
		An area of planting at Ceint in Section D	through Requirement 9 of the DCO (Document	
		Planting around Braint THH/CSEC, in Section F.	2.1).	
		Planting around Tŷ Fodol THH/CSEC, in Section F.		
		Planting around Pentir Substation extension in Section F		
		Section 1.6 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to avoid distinctive and more sensitive rocky outcrops across the study area.	Schedule of Environmental Commitments (Document 7.4.2.1)	
Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures				
--	--	---	--	
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			which is secured through Requirement 6 of the DCO (Document 2.1).	
Mynydd Mechell & Surrounds SLA	Direct change to landscape character	Section 1.6 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to avoid distinctive and more sensitive rocky outcrops across the study area.	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
Southern Anglesey Estatelands SLA	Direct change to landscape character	Mitigation planting which would help assimilate the Proposed Development into the wider landscape, around Braint THH/CSEC.	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9	

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			of the DCO (Document 2.1).
North-Western Fringes of Snowdonia SLA	Perceptual change to landscape character	Mitigation planting which would help assimilate the Proposed Development into the wider landscape, around the extension to Pentir Substation and also to a lesser degree around Tŷ Fodol THH/CSEC.	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).
Snowdonia National Park	Perceptual change to landscape character	Mitigation planting which would help assimilate the Proposed Development into the wider landscape, particularly around Pentir Substation and Tŷ Fodol THH/CSEC.	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9

Table 2: Summary of Landscape Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			of the DCO (Document 2.1).
Anglesey AONB	Perceptual change to landscape character	Mitigation planting which would help assimilate the Proposed Development into the wider landscape, particularly around Braint THH/CSEC, Capel Coch and Gylched Covert and Pentir Substation extension.	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).
North Anglesey Heritage Coast	Perceptual change to landscape character	No mitigation required	

3 Visual

3.1 INTRODUCTION

3.1.1 Control and management measures and mitigation measures required to mitigate the potential visual effects from the construction, operation, maintenance and decommissioning of the Proposed Development are set out in section 9 of Chapter 8 Visual (Document 5.8) and Table 3 identifies where each of these measures are secured.

Relevant Mitigation by Design

- 3.1.2 Mitigation by design has been integral to reducing the visual effects of the Proposed Development. Measures that have been incorporated into the design have included:
 - Sensitive routeing and siting of infrastructure (as per the Design Report, **Document 7.14**);
 - Synchronisation of pylons with the existing 400 kV OHL, refer to Chapter 6, EIA Approach and Methodology (**Document 5.6**) for further information on synchronisation;
 - Undergrounding of a 4 km section of the Proposed Development at the Menai Strait and Anglesey AONB to avoid visual effects on an area of high value for sensitive visual receptors;
 - Restriction of LOD at specific pylon locations along the alignment so as not to increase the significance of effect for specific visual receptors;
 - Use of low height pylons on entries to the CSECs to reduce the visibility within the wider landscape; and
 - A commitment to reduce effects to vegetation within the Order Limits as per the Schedule of Environmental Commitments (**Document 7.4.2.1**).

3.2 VISUAL ASSESSMENT CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

3.2.1 Table 3 identifies where each of these measures are secured.

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Communities Short ter tempora effects o views		Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Short term/ temporary effects on views	Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.	Measure GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive	Measure GP87 of the CEMP (Document 7.4) which is	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and applicable to do so in relation to construction works.	secured through Requirement 6 of the DCO (Document 2.1).	
	Short to Long term/ permanent effects on views through	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	the introduction of the Proposed Development		Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify trees and hedgerows for removal. All retained trees and hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction	Measure TH13 of the CEMP (Document 7.4) which is	

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		of roots by plant and machinery.	secured through Requirement 6 of the DCO (Document 2.1).		
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	Measure TN14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).		
		 A Boundary Features Protection Strategy will be produced; this will include: Identification of all Cloddiau within the Order Limits to be 	Measure TN21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO		

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 removed and retained; a schedule of all boundaries to be removed; A photographic record of all boundaries to be removed so that they can be reinstated accordingly; a schedule of all boundaries to be retained including specification for temporary physical protection; A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and details of an auditable system of compliance. 	(Document 2.1).	
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out on land within working areas. Where required this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Measure R2 of the (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).
		Reinstatement will be in accordance with the relevant parts of the BMS (Document 7.7) include making good of any damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	Measure R3 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
			Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1).
			Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Long term/ permanent effects on views throug the introduc of the Propo Development	Long term/ permanent	Planting around Braint THH/CSEC, in Section F.	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.14-	
	effects on views through	Planting around Tŷ Fodol THH/CSEC, in Section F.		
	the introduction of the Proposed Development	Mounding and planting around Pentir Substation extension in Section F	5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
Private Views	Short term/ temporary effects on views	Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Page	41
------	----

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.	Measure GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive	Measure GP87 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and applicable to do so in relation to construction works.	
	Short to Long term/ permanent effects on views through the introduction of the Proposed Development	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify trees and hedgerows for removal. All retained trees and hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction of roots by plant and machinery.	Measure TH13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; 	Measure TN14 of the CEMP (Document 7.4) which is	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		 A Boundary Features Protection Strategy will be produced; this will include: Identification of all Cloddiau within the Order Limits to be removed and retained; a schedule of all boundaries to be removed; A photographic record of all boundaries to be removed so that they can be reinstated accordingly; a schedule of all boundaries to be retained including specification for temporary physical protection; 	Measure TN21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and details of an auditable system of compliance. 	
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out on land within working areas. Where required this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Measure R2 of the (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).

Reinstatement will be in accordance with the relevant BMS

Measure R3 of the CEMP

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		(Document 7.7) include making good of any damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).	
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Long term/	Planting around Braint THH/CSEC, in Section F.	Mitigation planting scheme	
	effects on views through	Planting around Tŷ Fodol THH/CSEC, in Section F.	Landscape Mitigation Plans (Documents 5.7.1.14-	
	the introduction of the Proposed Development	Mounding and planting around Pentir Substation extension in Section F	5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
Wales Coast Path	Short term/ temporary effects on views	Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be	Measure GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.			
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and applicable to do so in relation to	Measure GP87 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		construction works.		
	Short to Long term/ permanent effects on views through the introduction of the Proposed	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
	Development	An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		trees and hedgerows for removal. All retained trees and hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction of roots by plant and machinery.	Measure TH13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; 	Measure TN14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	and Requirement 12 of the DCO (Document 2.1).	
		 A Boundary Features Protection Strategy will be produced; this will include: 		
		 Identification of all Cloddiau within the Order Limits to be removed and retained; 		
		 a schedule of all boundaries to be removed; A photographic record of all boundaries to be removed so that they can be reinstated accordingly; 	Measure TN21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 a schedule of all boundaries to be retained including specification for temporary physical protection; 		
		 A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and 		
		details of an auditable system of compliance.		
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out on land within working	Measure R2 of the (Document 7.4) which is secured through	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		areas. Where required this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).	
		Reinstatement will include making good of any damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	Measure R3 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6.
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	Long term/ permanent	Planting around Braint THH/CSEC, in Section F.	Mitigation planting scheme as set out in the Indicative
	effects on views through the introduction of the Proposed Development	Planting around Tŷ Fodol THH/CSEC, in Section F.	Landscape Management Plans (Documents 5.7.1.14-
		Mounding and planting around Pentir Substation extension in Section F	5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Public Right of Way (PRoW) Short term temporary effects on views		Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Short term/ temporary effects on views	Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.	Measure GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive	Measure GP87 of the CEMP (Document 7.4) which is	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and applicable to do so in relation to construction works.	secured through Requirement 6 of the DCO (Document 2.1).
	Short to Long term/ permanent effects on views through	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

views through

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	the introduction of the Proposed Development		Tree and Hedgerow Protection Strategy in which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify trees and hedgerows for removal. All retained trees and hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction	Measure TH13 of the CEMP (Document 7.4) which is	

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		of roots by plant and machinery.	secured through Requirement 6 of the DCO (Document 2.1).		
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	Measure TN14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).		
		 A Boundary Features Protection Strategy will be produced; this will include: Identification of all Cloddiau within the Order Limits to be 	Measure TN21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO		

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 removed and retained; a schedule of all boundaries to be removed; A photographic record of all boundaries to be removed so that they can be reinstated accordingly; a schedule of all boundaries to be retained including specification for temporary physical protection; A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and details of an auditable system of compliance. 	(Document 2.1).		
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out of land within working areas. Where required this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Measure R2 of the (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1).		

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).	
		Reinstatement will include making good of any damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	Measure R3 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
			Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1).	
			Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			(Document 2.1).	
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Cycle Routes	Short term/ temporary effects on views	Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be	Measure GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.			
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and applicable to do so in relation to	Measure GP87 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		construction works.		
Short to Long term/ permanent effects on views through the introduction of the Proposed Development	Short to Long term/ permanent effects on views through the introduction of the Proposed	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
	of the Proposed Development	An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow	

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		trees and hedgerows for removal. All retained trees and hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).		
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction of roots by plant and machinery.	Measure TH13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; 	Measure TN14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7		

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	and Requirement 12 of the DCO (Document 2.1).	
		A Boundary Features Protection Strategy will be produced; this will include:		
		 Identification of all Cloddiau within the Order Limits to be removed and retained; 		
		 a schedule of all boundaries to be removed; 	Measure TN21 of the CEMP	
		• A photographic record of all boundaries to be removed so that they can be reinstated accordingly;	secured through Requirement 6 of the DCO	
		 a schedule of all boundaries to be retained including specification for temporary physical protection; 	(Document 2.1).	
		• A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and		
		details of an auditable system of compliance.		
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out of land within working	Measure R2 of the (Document 7.4) which is secured through	
Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
--	---------------------	---	--	--
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		areas. Where required, this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which hare secure by Requirement 6 of the DCO (Document 2.1).	
		Reinstatement will include making good of any damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	Measure R3 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13	

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which hare secure by Requirement 6 of the DCO (Document 2.1).	
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Promoted Viewpoints	Short term/ temporary effects on views	Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Page	67
------	----

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.	Measure GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive	Measure GP87 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and applicable to do so in relation to construction works.		
	Short to Long term/ permanent effects on views through the introduction of the Proposed Development	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify trees and hedgerows for removal. All retained trees and hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction of roots by plant and machinery.	Measure TH13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; 	Measure TN14 of the CEMP (Document 7.4) which is	

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).		
		 A Boundary Features Protection Strategy will be produced; this will include: Identification of all Cloddiau within the Order Limits to be removed and retained; a schedule of all boundaries to be removed; A photographic record of all boundaries to be removed so that they can be reinstated accordingly; a schedule of all boundaries to be retained including specification for temporary physical protection; 	Measure TN21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and details of an auditable system of compliance. 		
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out within working areas. Where required, this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Measure R2 of the (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1)	

Reinstatement will include making good of any damage or

Page 71

Indicative Reinstatement Plans (Document 7.4.1.1)

Requirement 6 of the DCO

Measure R3 of the CEMP

which are secured by

(Document 2.1)

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1)	
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Trig Points		Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Short term/ temporary effects on views	Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.	Measure GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive	Measure GP87 of the CEMP (Document 7.4) which is	

			Faye 74
Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures			
	Source of		M/hara the Mitigation is

Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and applicable to do so in relation to construction works.	secured through Requirement 6 of the DCO (Document 2.1).
	Short to Long term/ permanent effects on views through	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
the i of th Dev	the introduction of the Proposed Development		Tree and Hedgerow Protection Strategy in which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify trees and hedgerows for removal. All retained trees and hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 Requirement 12 of the DCO (Document 2.1).	
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction	Measure TH13 of the CEMP (Document 7.4) which is	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		of roots by plant and machinery.	secured through Requirement 6 of the DCO (Document 2.1).	
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	Measure TN14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		A Boundary Features Protection Strategy will be produced; this will include:Identification of all Cloddiau within the Order Limits to be	Measure TN21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 removed and retained; a schedule of all boundaries to be removed; A photographic record of all boundaries to be removed so that they can be reinstated accordingly; a schedule of all boundaries to be retained including specification for temporary physical protection; A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and details of an auditable system of compliance. 	(Document 2.1).	
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out within working areas. Where required this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Measure R2 of the (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1).	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).	
		Reinstatement will include making good of any damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	Measure R3 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
			Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1).	
			Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			(Document 2.1).
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
Tourist Attractions	Short term/ temporary effects on views	Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be	Measure GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.		
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and applicable to do so in relation to	Measure GP87 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		construction works.		
	Short to Long term/ permanent effects on views through the introduction of the Proposed	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy in which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
	Development	An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		trees and hedgerows for removal. All retained trees and hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	Protection Strategy in which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction of roots by plant and machinery.	Measure TH13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; 	Measure TN14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7	

able 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	and Requirement 12 of the DCO (Document 2.1).	
		A Boundary Features Protection Strategy will be produced; this will include:		
		 Identification of all Cloddiau within the Order Limits to be removed and retained; 		
		 a schedule of all boundaries to be removed; A photographic record of all boundaries to be removed so that they can be reinstated accordingly; 	(Document 7.4) which is secured through Requirement 6 of the DCO	
		 a schedule of all boundaries to be retained including specification for temporary physical protection; 	(Document 2.1).	
		 A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and 		
		details of an auditable system of compliance.		
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out within working areas. Where	Measure R2 of the (Document 7.4) which is secured through	

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		required this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).	
		Reinstatement will include making good of any damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	Measure R3 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13	

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).	
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Roads & Rail	Short term/ temporary effects on views	Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.	Measure GP85 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to reduce glare and nuisance to residents. Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting which is not towards sensitive receptors.	Measure GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
		Implementation will comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005) in so far as it is reasonably practicable and applicable to construction works. When lighting is necessary, appropriate lighting and luminaires will be used to reduce the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive	Measure GP87 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		watercourses, hedgerows and woodland edges to avoid disturbance to wildlife. Guidance for the reduction of obtrusive light issued by the Institute of Lighting Professionals and guidance to help minimise the impact of artificial lighting on bats will be followed in so far as it is reasonably practicable and applicable to do so in relation to construction works.			
	Short to Long term/ permanent effects on views through the introduction of the Proposed Development	A Tree and Hedgerow Protection Strategy will be produced; this will be in accordance with the Trees and Hedgerows Potentially Affected Plans (Document 4.11).	Measure TH11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).		

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		An Arboricultural Clerk of Works will be appointed and will be responsible for overseeing and monitoring all arboricultural measures. All trees and hedgerows to be retained are shown on the Trees and Hedgerows Potentially Affected Plans (Document 4.11). These plans will be refined prior to construction by the Arboricultural Clerk of Works to identify trees and hedgerows for removal. All retained trees and hedgerows will be protected in accordance with the Tree and Hedgerow Protection Strategy.	Measure TH12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).			
		Retained hedgerows and trees will be protected by clearly defined root protection areas to prevent damage/ compaction of roots by plant and machinery.	Measure TH13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
		 The Tree and Hedgerow Protection Strategy will include: a schedule of all trees and hedgerows to be removed; 	Measure TN14 of the CEMP (Document 7.4) which is			

Table 3 Summar	y of Visual Asses	sment Control and Management Measures & Mitigation Measures	asures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 a schedule of all trees which require pruning coppicing or pollarding; a schedule of all trees and hedgerows to be retained including specification for temporary physical protection including clearly defined root protection areas to prevent damage / compaction of roots by machinery; A reinstatement plan and schedule showing locations and types of planting; and details of an auditable system of compliance. 	secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).
		 A Boundary Features Protection Strategy will be produced; this will include: Identification of all Cloddiau within the Order Limits to be removed and retained; a schedule of all boundaries to be removed; A photographic record of all boundaries to be removed so that they can be reinstated accordingly; a schedule of all boundaries to be retained including specification for temporary physical protection; 	Measure TN21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Receptor

Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	 A reinstatement plan for all boundaries which will include the Technical Specification for Welsh Cloddiau; and details of an auditable system of compliance. 	
	To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out within working areas. Where required this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	Measure R2 of the (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1)
		Indicative Reinstatement

Table 3 Summary	y of Visual Asses	sment Control and	d Management M	leasures & Mit	igation Measures	
						_

where agreed, carried out within working areas. Where required this will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.	secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).
Reinstatement will include making good of any damage or	Measure R3 of the CEMP

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1).		
		Trees, hedgerows and boundary features will be reinstated in accordance with TH11, TH12, TH13, TH14 and TH21.	Measure R4 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
Properties identified as having both major and moderate visual effects during the operational stage of the Proposed Development	Long term/ permanent effects on views through the introduction of the Proposed Development	Properties would be able to opt into the Voluntary Residential Planting Scheme which would look to reduce visual effects through screening planting. Details of this scheme can be found in the Enhancement Strategy (Document 7.13).	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12- 5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).		
Communities Lo po ef vi th of D	Long term/ permanent effects on views through the introduction of the Proposed Development	Section 1.2 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to retain conifer hedge in Section C.	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Section 1.13 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments in relation to restricting the movements of pylons within the Limits of Deviation (LoD)			

Table 3 Summar	Fable 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		Landscape mitigation planting at Carrog Isa adjacent the sewage works as illustrated on Figure 7.3 (Document 5.7.1.13) to reduce visual effects for the Bodewryd community	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12- 5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).			
		Landscape mitigation planting as illustrated on Figure 7.3 (Document 5.7.1.13) to mitigate for loss of woodland copse in Cefniwrch;	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Document 5.7.1.12- 5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).			
		Landscape mitigation planting as illustrated on Figure 7.13 (Document 5.7.1.13) to mitigate for loss of trees within Gylched Covert.	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-			

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
			5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).		
		Landscape mitigation planting as illustrated on Figure 7.15 (Document 5.7.1.15) to mitigate the effects of Tŷ Fodol THH & CSEC.	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12- 5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).		
		Landscape mitigation planting as illustrated on Figure 7.16 (Document 5.7.1.16) to mitigate the effects of the extension to Pentir Substation.	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12- 5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).		

Table 3 Summar	Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		 Reinstatement of trees and hedgerows directly affected by access tracks will occur at the following locations: south-west edge of Cemaes; north-east of Tregel; southern edge of Bodewryd; eastern edge of Llanfefni; Rhosgoch and Four Crosses; Carreglefn; Rhosybol; Llandyfrydog (reinstatement will additionally occur under the overhead line); Hebron & Maenaddwyn (reinstatement will additionally occur under the overhead line); Capel Coch (reinstatement will additionally occur under the overhead line and the trees lost along the boundaries within the Order Limits would be replaced); 	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12- 5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).			

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		Cefni;			
		Gaerwen;			
		 Penmynydd (reinstatement will additionally occur under the overhead line and the trees lost along the boundaries within the Order Limits would be replaced); 			
		 Talwrn (reinstatement will additionally occur under the overhead line and the trees lost along the boundaries within the Order Limits would be replaced); 			
		 Star (reinstatement will additionally occur under the overhead line and the trees lost along the boundaries within the Order Limits would be replaced); 			
		 Llanddaniel Fab (reinstatement will additionally occur under the overhead line and the trees lost along the boundaries within the Order Limits would be replaced); 			
		 Pentir (reinstatement will additionally occur under the overhead line and the trees lost along the boundaries within the Order Limits would be replaced); 			
		 at bellmouth locations A10, B1, B2, B4, B5, B8, B9, C1, C2, C4, C5, C10, D1, D4, E1, E2, E3, E4, E7, F1, F3, 			

Table 3 Summary	y of Visual Asses	ssment Control and Management Measures & Mitigation Me	asures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		F10, F11, F6, F7, F8, F9, F14	
Wales Coast Path		Section 1.2 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to retain conifer hedge in Section C.	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of
PRoW Cycle Routes	Long term/ permanent effects on views through the introduction of the Proposed Development	Section 1.13 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments in relation to restricting the movements of pylons within the Limits of Deviation (LoD)	the DCO (Document 2.1).
Promoted Viewpoints		Section 1.15 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments regarding certain properties not being occupied.	
Trig Points			

Table 3 Summary of Visual Assessment Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
Tourist Attractions						
Roads & Rail						

4 Ecology and Nature Conservation

4.1 INTRODUCTION

4.1.1 Control and management measures and mitigation measures required to mitigate the potential ecology and nature conservation effects from the construction, operation, maintenance and decommissioning of the Proposed Development are set out in section 9 of Chapter 9 Ecology and Nature Conservation (**Document 5.9**) and Table 4 identifies where each of these measures are secured.

Relevant Mitigation by Design

- 4.1.2 Mitigation by design has been integral to reducing the ecology and nature conservation effects of the Proposed Development. Measures that have been incorporated into the design have included:
 - implementation of the tunnelling methodology beneath the marine SAC Menai Strait and Conwy Bay;
 - commencing tunnelling either side of the areas of significant woodland, including ancient woodland, along the Menai Strait;
 - routeing around Anglesey Fens/Cors Erddreiniog SAC/Ramsar/ SSSI/NNR and other designated sites;
 - micrositing of pylons; and
 - paralleling the OHL with the existing OHL (with the exception of where the existing is routed through the above designated sites) in order to reduce the risk of collision impacts.
- 4.1.3 Whilst there is some flexibility afforded by the LOD, commitments have been made in the Schedule of Environmental Commitments (**Document 7.4.2.1**) to avoid areas where locating temporary or permanent works would be likely to have more significant effects than those reported in this section.
- 4.1.4 There are no mitigation measures for collision risk

4.2 ECOLOGY AND NATURE CONSERVATION CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

4.2.1 Table 4 identifies where each of these measures are secured.
Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Corsydd Mon/Anglesey Fens Special Area of Conservation (SAC), Corsydd Môn a Llyn/Anglesey and Llyn Fens Ramsar and Cors Erddreiniog Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR).	Direct loss of habitat (though note that qualifying features are avoided)	CEMP measures AE11, AE12, AE13, AE14, AE21, AE41, SM11, SM12, WE11, WE21, WE22, WE23, WE31, WE41, WE51, EW54, WE55, WE57, WE58, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC27, BNC29 to BNC211, TN11 to TN14, TN21, R1 to R6. In addition to the measures committed in Chapter 11, Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk Chapter 12 (Document 5.12), Chapter 13 Traffic and Transport (Document 5.13) and Chapter 14 Air Quality (Document 5.14), the following additional measures would be implemented: • Where habitat within the designated sites is	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Outline Construction Traffic Management Plan (OCTMP) (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1). Outline Soil Management Plan (OSMP) (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). The Pollution Incident Control Plan (PICP) is secure by	
	Temporary disturbance/ displacement/ degradation (qualifying features avoided) – small areas of the SAC/Ramsar/SSSI/NNR			
	Temporary disturbance/ displacement/ degradation (qualifying features avoided) from changes in air quality			

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Hydrological Alteration (small scale temporary drainage works in connection with the perimeter drain on the western boundary of the site)	 required to be removed/managed due to conductor swing, this would be done with care to avoid damaging ground habitats, such as by soft felling the trees and avoiding taking vehicles on the designated site where possible. The permanent drainage in effect during the operation of the Proposed Development would be designed to maintain the existing hydrological regime. 	Requirement 7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secure by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
Eryri/Snowdonia SAC	Temporary disturbance/ displacement/ degradation (qualifying features avoided)	All the relevant CEMP General Principle measures and CEMP measures AE21, AE41. The measures set out in Chapter 13, Traffic and Transport (Document 5.13) and Chapter 14 Air Quality (Document 5.14) would be implemented.	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours secure by Requirement 8 of the DCO (Document 2.1). OCTMP (Document 7.5) is secured by Requirement 6 of the	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			DCO (Document 2.1).	
Tre'r Gof SSSI	Temporary disturbance /displacement/degradati on	All the relevant CEMP General Principle measures and CEMP measures AE11, AE12, AE 14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25. The measures set out in Chapter 11, Geology, Hydrogeology and Ground Conditions Chapter 11 (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12), Chapter 13, Traffic and Transport (Document 5.13) and Chapter 14 Air Quality (Document 5.14) would be implemented.	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours are secured by Requirement 8 of the DCO (Document 2.1). OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
	Temporary disturbance/ displacement/ degradation	 All the relevant CEMP General Principle measures and CEMP measures AE11, AE12, AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, EM14, BS11, relevant BS 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Caeau Talwrn SSSI	Hydrological Alteration	measures between BS21 to BS202, BS401, BS403, BNC11 to BNC113, BNC21 to BNC25. The measures committed in Chapter 11 Geology,	Construction hours are secured by Requirement 8 of the DCO (Document 2.1).	
		 Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12), Chapter 13, Traffic and Transport (Document 5.13) and Chapter 14 	OCTMP (Document 7.5) is secured by Requirement 6 of the DCO (Document 2.1).	
		Air Quality (Document 5.14), would be	OSMP (Document 7.10) which is	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		implemented.	secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Poquirement 7 and Poquirement	
			12 of the DCO (Document 2.1).	
Livo Alaw SSSI	Temporary disturbance/ displacement/ degradation	• All the relevant CEMP General Principle measures and CEMP measures WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS91 to BS92,	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
LIYII Alaw 3351		BNC11 to BNC13, BNC21. The measures committed in Chapter 11 Geology, Hydrogeology and Ground Conditions (Document	Construction hours are secured by Requirement 8 of the DCO (Document 2.1).	
		5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and Chapter 14 Air	OSMP (Document 7.10) which is	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Quality (Document 5.14), would be implemented.	secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
SSSIs not subject to direct loss but within 200 m of Order Limits and construction traffic routes.	Temporary disturbance/ displacement/ degradation	 All the relevant CEMP General Principle measures and CEMP measures AE11, AE12, AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13. The measures committed in Chapter 11 Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours are secured by Requirement 8 of the DCO (Document 2.1). OCTMP (Document 7.5) which is	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Flood Risk (Document 5.12) and Chapter 14 Air Quality (Document 5.14), would be implemented.	secured by Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
Menai Strait and Conwy Bay SAC and Glannau Porthaethwy SSSI	Habitat loss and contamination - TBM blow-outs.	• CEMP measure WE511, BS11, BS301, BS401, BS403	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Lleyn Peninsula and the Sarnau SAC / North Anglesey Marine and West Wales Marine cSACs / Cardigan Bay SAC	Disturbance of fauna (EMF)	 CEMP measure NV32, NV33, BS11, BS301, BS301, BS401, BS403, BNC28 Mitigation listed in NPS EN-3 states that a cable buried at depths greater than 1.5 m below the sea bed impacts are likely to be negligible. Therefore EMF would be mitigated through design, as the tunnel is a minimum of 10 m below the bed of the Menai Strait 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Afon Gwyrfai a Llyn Cwellyn SAC	Habitat loss and contamination - TBM blow-outs. Disturbance of individuals or direct effects (noise and vibration) Disturbance of	 CEMP measure NV32, NV33, WE511, BNC28 Mitigation for EMF is provided through mitigation by design, as the tunnel is a minimum of 10 m below the bed of the Menai Strait (Not Significant) 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	individuals or direct effects (EMF)			
Glannau Porthaethwy SSSI	Habitat Contamination - TBM blow-outs.	 CEMP measure WE511, BS11, BS301, BS401, BS403 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Gylched Covert	Direct loss of habitat	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE21 to WE22, WE41, WE56, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, TN11 to TN14, R1 to R4. In addition to the measures committed in Chapter 	All the measures are set out in the CEMP (Document 7.4) which	
Site (CWS)	Temporary disturbance/ displacement/		AE21, AE41, SM11, SM12, WE21 to WE22, WE41, WE56, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, is secured thro	is secured through Requirement 6 of the DCO (Document 2.1).
			Construction hours are secured by Requirement 8 of the DCO	
	Severance and Fragmentation		In addition to the measures committed in Chapter (Document 2.4)	(Document 2.1).
	Hydrological Alteration	11 Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and Chapter 14 Air Quality (Document 5.14), the	OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 4 Summary	of Ecology and Nature C	conservation Control and Management Measures 8	Mitigation Measures
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 following additional measures would be implemented. The existing seed bank in the woodland top soil would be maintained through being stored separately from soils of other habitats. Mitigation planting would be included within the gap in the west side of the woodland (Figure 7.13 (Document 5.7.1.13)). Mitigation planting mixes would be tailored to the existing CWS, existing Annex 1 of the Habitats Directive woodland community for both the replacement woodland planting and the planting beneath the OHL, including scrub habitat, to provide good connectivity to other woodland blocks in the locations available. These would comprise native species of local provenance where possible. This would be tailored to support LBAP targets where possible. 	OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		• Future habitat management of Gylched Covert in line with maintaining and improved the quality of this CWS woodland (maintaining this W8e community where possible) to be agreed as part of the draft DCO (Document 2.1). Outline of this is provided in the BMS (Document 7.7), but full details would be provided in a management plan.	
Coed Nant y Garth cCWS	Direct loss of habitat Temporary disturbance/ displacement/ degradation	• All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS401,	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours are secured
	Severance and Fragmentation	 BS403, BNC11 to BNC13, BNC21 to BNC25, TN11 to TN14, TN21, R1 to R6. In addition to the measures committed in Chapter 11 Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and 	by Requirement 8 of the DCO (Document 2.1). OCTMP (Document 7.5) which is secured by Requirement 6 of the

Page	1	1	2
· age			-

Table 4 Summary	of Ecology and Nature C	Conservation Control and Management Measures 8	Mitigation Measures
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 Chapter 14 Air Quality (Document 5.14), the following additional measures would be implemented. Habitat replacement of CWS/cCWS habitats and improvement where appropriate in quality and mix of species, maintaining existing seed bank in top soil. Mitigation planting would ensure no net loss of trees, and be as close as possible in location to that lost, and where not possible, to provide good connectivity to other woodland blocks. Maintain existing seed bank and soil type by storage of the top soil of each grassland habitat kept separate to that of other grassland habitat types. Avoid use of weed killer on these top soil areas during construction period where appropriate, and would be of mixes appropriate to each grassland type in each location. Seed mixes would comprise native species of 	 DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy in which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 local provenance where possible, and would be of mixes appropriate to each grassland type in each location. Mitigation planting mixes at Pentir Substation would be tailored to the existing cCWS habitats, including scrub habitat, to provide good connectivity to other woodland blocks. These would comprise native species of local provenance where possible. 		
		 Management of the ancient woodland section of the Pentir Substation cCWS where it falls within the Order Limits to maintain and improve the quality of this cCWS woodland. This would be tailored to support LBAP targets where possible. Maintain existing drainage on completion where the drainage mitigation area falls within the cCWS Coed Ty'n-llwyn. 		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Coed Rhos-fawr cCWS	Direct loss of habitat	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours in which are	
	Temporary disturbance/ displacement/ degradation			
	Severance and Fragmentation	BS403, BNC11 to BNC13, BNC21 to BNC25, TN11 to TN14, TN21, R1 to R6.	secured by Requirement 8 of the DCO (Document 2.1).	
		In addition to the measures committed in Chapter 11 Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and	OCTMP (Document 7.5) which is by through Requirement 6 of the DCO (Document 2.1).	
		Chapter 14 Air Quality (Document 5.14), the following additional measures would be	OSMP (Document 7.10) which is secured by Requirement of the	

implemented. DCO (Document 2.1). • Habitat replacement of CWS/cCWS habitats PICP is secured by Requirement and improvement where appropriate in quality 7 of the DCO (Document 2.1). and mix of species, maintaining existing seed Tree and Hedgerow Protection bank in top soil.

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Mitigation planting would ensure no net loss of trees, and be as close as possible in location to that lost, and where not possible, to provide good connectivity to other woodland blocks. Maintain existing seed bank and soil type by storage of the top soil of each grassland habitat kept separate to that of other grassland habitat types. Avoid use of weed killer on these top soil areas during construction period where appropriate, and would be of mixes appropriate to each grassland type in each location. Seed mixes would comprise native species of local provenance where possible, and would be of mixes appropriate to each grassland type in each location. Mitigation planting mixes at Pentir Substation would be tailored to the existing cCWS habitats, including scrub habitat, to provide good connectivity to other woodland blocks. These would comprise native species of local 	Strategy in which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 provenance where possible. Management of the ancient woodland section of the Pentir Substation cCWS where it falls within the Order Limits to maintain and improve the quality of this cCWS woodland. This would be tailored to support LBAP targets where possible. Maintain existing drainage on completion where the drainage mitigation area falls within the cCWS Coed Ty'n-llwyn. 		
Pentir Substation cCWS	Direct loss of habitat Temporary disturbance/ displacement/ degradation Severance and	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, TN11 to TN14, TN21, R1 to R6. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours in which are secured by Requirement 8 of the DCO (Document 2.1).	
	Fragmentation	In addition to the measures committed in Chapter	OCTMP (Document 7.5) which is	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		11 Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and Chapter 14 Air Quality (Document 5.14), the following additional measures would be implemented.	secured by Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).
		 Habitat replacement of CWS/cCWS habitats and improvement where appropriate in quality and mix of species, maintaining existing seed bank in top soil. Mitigation planting would ensure no net loss of trees, and be as close as possible in location to that lost, and where not possible, to provide good connectivity to other woodland blocks. Maintain existing seed bank and soil type by storage of the top soil of each grassland habitat kept separate to that of other grassland habitat types. Avoid use of weed killer on these top soil areas during construction period where 	PICP is secured by Requirement 7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy is a strategy stipulated in Requirement 7 and is also secured by Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme (Document 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		appropriate, and would be of mixes appropriate to each grassland type in each location.	
		• Seed mixes would comprise native species of local provenance where possible, and would be of mixes appropriate to each grassland type in each location.	
		 Mitigation planting mixes at Pentir Substation would be tailored to the existing cCWS habitats, including scrub habitat, to provide good connectivity to other woodland blocks. These would comprise native species of local provenance where possible. 	
		 Management of the ancient woodland section of the Pentir Substation cCWS where it falls within the Order Limits to maintain and improve the quality of this cCWS woodland. This would be tailored to support LBAP targets where possible. 	
		Maintain existing drainage on completion where	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		the drainage mitigation area falls within the cCWS Coed Ty'n-llwyn.	
Coed Ty'n-llwyn CWS	Direct loss of habitat Temporary disturbance/ displacement/ degradation	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours in which are secured by Requirement 8 of the
	Fragmentation	TN11 to TN14, TN21, R1 to R6. In addition to the measures committed in Chapter 11 Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and Chapter 14 Air Quality (Document 5.14), the following additional measures would be implemented.	 DCO (Document 2.1). OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).
		Habitat replacement of CWS/cCWS habitats and improvement where appropriate in quality	PICP is secured by Requirement

Table 4 Summary	of Ecology and Nature C	Conservation Control and Management Measures 8	Mitigation Measures
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 and mix of species, maintaining existing seed bank in top soil. Mitigation planting would ensure no net loss of trees, and be as close as possible in location to that lost, and where not possible, to provide good connectivity to other woodland blocks. Maintain existing seed bank and soil type by storage of the top soil of each grassland habitat kept separate to that of other grassland habitat types. Avoid use of weed killer on these top soil areas during construction period where appropriate, and would be of mixes appropriate to each grassland type in each location. Seed mixes would comprise native species of local provenance where possible, and would be of mixes appropriate to each grassland type in each location. Mitigation planting mixes at Pentir Substation would be tailored to the existing cCWS habitats, 	7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy in which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		including scrub habitat, to provide good connectivity to other woodland blocks. These would comprise native species of local provenance where possible.		
		• Management of the ancient woodland section of the Pentir Substation cCWS where it falls within the Order Limits to maintain and improve the quality of this cCWS woodland. This would be tailored to support LBAP targets where possible.		
		Maintain existing drainage on completion where the drainage mitigation area falls within the cCWS Coed Ty'n-llwyn.		
CWS with indirect effect only within 200 m of Order Limits	Temporary disturbance/ displacement/ degradation	• All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, BS11,	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
and construction	Hydrological Alteration	relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to	Construction hours in which are	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
traffic routes.		BNC25. The measures set out in Chapter 11 Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and Chapter 14 Air Quality (Document 5.14) would be implemented.	 secured by Requirement 8 of the DCO (Document 2.1). OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy is a strategy stipulated in Requirement 7 and is also secured by Requirement 12 of the DCO (Document 2.1). 	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Ancient Woodland	Direct loss of habitat	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE41, BS11 relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, TN11 to TN14, R1 to R4. In addition to the measures committed to in Chapter 7, Landscape Assessment (Document 5.7), Chapter 11, Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality Resources and Flood Risk (Document 5.12) and Chapter 14, Air Quality (Document 5.14), the following additional measures would be implemented: The importance of protecting ancient woodland would be highlighted in tool box talks given to construction staff. 	All the measures are set out in the CEMP (Document 7 4) which	
vvoodiand	Temporary disturbance/ displacement/		is secured through Requirement 6 of the DCO (Document 2.1).	
	Severance and Fragmentation		OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1).	
			OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).	
			PICP is secured by Requirement 7 of the DCO (Document 2.1).	
			Tree and Hedgerow Protection Strategy in which is secured by Requirement 7 and Requirement	
		Replacement of loss with woodland habitat	12 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 where appropriate, including through respreading of top-soil with existing seed bank from lost areas of ancient woodland to gaps within and surrounding the woodland, as well as allowing natural regeneration. Replacement planting of trees on previously planted areas of ancient woodland to include native species suitable for ancient woodlands, of local provenance where possible, and designed to provide good shelter and food sources for notable species. 	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Management of the ancient woodland section of the Pentir Substation cCWS, where it falls within the Order Limits, to maintain and improve the quality of this cCWS woodland. This would be tailored to achieve LBAP targets where possible. Outline details of this are provided in the BMS (Document 7.7), but full details would be provided in a management plan. Section 1.2 of the Environmental Commitments 		

Table 4 Summary	Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		Register (Document 7.4.2.1) makes commitments to retain and reduce as far as practicable groups of trees.			
Non-Ancient Woodland	Direct loss of habitat	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE41, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, 	All the measures are set out in the CEMP (Document 7.4) which		
VVOodiand	Temporary disturbance/ displacement/		is secured through Requirement 6 of the DCO (Document 2.1).		
	Severance and	BNC11 to BNC13, BNC21 to BNC25, TN11 to TN14, R1 to R4. In addition to the measures committed to in	OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1).		
		Chapter 7, Landscape Assessment (Document 5.7), Chapter 11, Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk	OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).		
		(Document 5.12) and Chapter 14, Air Quality (Document 5.14), the following additional measures would be implemented	PICP is secured by Requirement 7 of the DCO (Document 2.1).		
		Habitat replacement and improvement where	Tree and Hedgerow Protection Strategy in which is secured by		

Table 4 Summary	Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 appropriate. Maintaining existing seed bank in top soil of woodland by keeping it separate from topsoil of other habitats. Where trees and woodland would be lost beneath the OHL, replacement planting would be located as close to that lost as possible, with alternative planting in these areas to include scrub in order to prevent fragmentation of habitats and loss of food sources, and to provide good connectivity to other woodland blocks in the locations available. Landscape mitigation planting would ensure no net loss of trees, with as much replacement planting as possible within the Order Limits. Planting mixes would comprise native species of local provenance where possible, and designed to provide good shelter and food sources for notable species. This would be 	Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures					
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 tailored to support BAP targets where possible. Section 1.2 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to retain and reduce as far as practicable groups of trees. 			
Improved Grassland and Arable	Direct loss of habitat Temporary disturbance/ displacement/ degradation Severance and Fragmentation	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE41, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21, BNC24, BNC25, R1 to R3. In addition to the measures set out in the Chapter 14, Air Quality (Document 5.14), the following additional measures would be implemented: Habitat replacement and improvement where appropriate. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Requirement 6 of the DCO (Document 2.1).	
Semi-Improved, Marshy	Direct loss of habitat	• All the relevant CEMP General Principle measures and CEMP measures, AE11 to AE14,	All the measures are set out in the CEMP (Document 7.4) which	
Grassland, Neutral and Acid Grassland	Temporary disturbance/ displacement/ degradation	AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE41, WE51, WE52, WE54 to WE56, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, R1 to R3. In addition to the measures set out in Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and Chapter 14, Air Quality (Document 5.14), the following additional measures would be implemented:	is secured through Requirement 6 of the DCO (Document 2.1).	
	Severance and Fragmentation		OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).	
	Hydrological Alteration		PICP is secured by Requirement 7 of the DCO (Document 2.1). Schedule of Environmental	
		• Maintain existing seed bank and soil type by storage of the top soil of each grassland habitat kept separate to that of other grassland habitat types. Avoid use of weed killer on these top soil areas during construction period.	Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Habitat replacement and improvement where appropriate. Seed mixes would comprise native species of local provenance where possible, and would be of mixes appropriate to each grassland type in each location. Protect habitats during installation of the pilot wire where this occurs outside of main areas of works including those areas protected by the Schedule of Environmental Commitments (Document 7.4.2.1). 		
Scrub	Direct loss of habitat Temporary disturbance/ displacement/ degradation Severance and	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE41, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21, BNC23, BNC25, R1 to R4. In addition to the measures set out in Chapter 7, 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Fragmentation	 Landscape Assessment (Document 5.7) and Chapter 14, Air Quality (Document 5.14), the following additional measures would be implemented: Habitat replacement and improvement where appropriate. Use of scrub and short tree species within the landscape mitigation planting where woodland habitat is fragmented due to the OHL in order to help maintain habitat connectivity between these habitats, in particular to provide continued cover for species present. Replacement planting to comprise mixes of native species of local provenance where possible, and designed to provide good shelter and food sources for notable species. 	OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
Acid Dry Dwarf Schub Heath	Temporary direct loss of habitat	• All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to	All the measures are set out in the CEMP (Document 7.4) which	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures					
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
	Temporary disturbance/ displacement/ degradation	 WE23, WE51, WE52, WE54, WE56 BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, R1 to R3. In addition to the measures set out in Chapter 12, Water Quality Resources and Flood Risk (Document 5.12) and Chapter 14, Air Quality (Document 5.14), the following additional measures would be implemented: Habitat replacement and improvement where appropriate. If required seed mixes would comprise native species of local provenance where possible, and would be of a mix appropriate to this habitat. Natural regeneration is the preference for recolonisation of areas temporarily affected, but planting/seeding may be required to assist regeneration or for new areas of permanent planting. 	 is secured through Requirement 6 of the DCO (Document 2.1). OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the 		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Ensure the top soil is kept separate from top soil of other habitats. If presence of species which are sensitive to correct orientations are identified through preconstruction surveys then scattered boulders would be carefully moved to outside of the area of works under a watching brief by the ECoW and should be laid in the same orientation as existing. 	DCO (Document 2.1).	
Ruderal	Direct loss of habitat Temporary disturbance/ displacement/ degradation	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE41, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21, BNC23, BNC25, R1 to R3. In addition to the above, specific measures required include: 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Severance and	Habitat replacement and improvement where	(Document 7.4.1.1) which are	

Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Severance and Fragmentation	 Habitat replacement and improvement where appropriate, which may be through allowed natural regeneration. 	 (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).
Hedgerows (Important and Non Important)	Direct temporary loss of habitat	• All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement
	Direct permanent loss of hedgerows at THH/CSECs	WE23, WE41, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, TN11 to TN14, TN21, R1 to R4.	6 of the DCO (Document 2.1). OCTMP (Document 7.5) which is secured by Requirement 6 of the
	Temporary disturbance/ displacement/	In addition to the measures committed to in Chapter 7, Landscape Assessment (Document	DCO (Document 2.1).

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures						
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
	degradation	5.7) and Chapter 14, Air Quality (Document 5.14), the following additional measures would be implemented:	OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).			
Fragmentation	Habitat replacement and improvement where appropriate.Maintain existing seed bank for hedgerows in	PICP is secured by Requirement 7 of the DCO (Document 2.1).				
		 separate top soil spoils to that of other habitats. Plant hedgerows along the inside of the visibility splays to minimise the gaps where safe to do so. 	Tree and Hedgerow Protection Strategy in which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).			
		 Cut back hedgerows on visibility splays to above ground level to maintain/protect the hedgerow and ground flora, allowing to grow back on completion of that area of works. 	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is			
		 Protect hedgerows from damage during construction such as through installing scaffolding for installation of OHL over roads and footpaths and when passing the pilot wire over the hedgerow. 	secured through Requirement 9 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document			

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures						
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		 Replace defunct and species poor hedgerows with intact and species rich hedgerows with trees, to replace and improve connectivity. Hedgerows would be included within the landscape planting scheme of the THH/CSEC 	7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).			
		 areas. Replace cloddiau on a like for like basis. Section 1.3 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to reduce as far as practicable temporary loss of important hedgerows. 				
		• Section 1.5 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to reduce as far as practicable temporary loss of Potential Cloddiau and ensure re instatement is undertaken in accordance with the Technical Specification for Welsh Cloddiau.				
Ponds	Temporary disturbance/	All the relevant CEMP General Principle	All the measures are set out in			

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures						
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
	displacement/ degradation	 measures and CEMP measures WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56 BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC24, R6. In addition to the measures set out in Chapter 11, Geology, Hydrogeology and Ground Conditions (Document 5.11) and Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12), the following additional measures would be implemented: 	the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
	Potential temporary loss on one pond (Pond A254)		OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).			
	Hydrological Alteration		PICP is secured by Requirement 7 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).			
		• Replacement of Pond A254 at Braint THH following construction as part of the landscape mitigation. Mitigation planting in this area would avoid fully surrounding this habitat and overshading.				
		 Although created as part of the drainage mitigation (SuDS), the new ponds would be planted/or allowed to colonise naturally with 				
Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures						
--	---	---	---	--		
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		 aquatic vegetation. Section 1.9 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments in relation to great crested newts such as reduce the temporary loss of suitable GCN habitat and avoiding ponds. 				
Watercourses and Drains	Direct temporary loss of habitat Temporary disturbance/ displacement/ degradation	 All the relevant CEMP General Principle measures and CEMP measures WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56 FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC24, R1 to R3, R5, R6. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of			
	Severance and Fragmentation Hydrological Alteration	In addition to the measures set out in Chapter 11, Geology, Hydrogeology and Ground Conditions (Document 5.11) and Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12), the	the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).			
		implemented:	PICP is secured by Requirement			

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Inclusion of importance of protection of watercourses within tool box talks. Reinstatement of the habitat on removal of the temporary crossings to maintain the existing course and watercourse habitat and bed at each location. Replacement of temporary loss of habitat through planting or natural regeneration. This includes that the bed, morphology and in channel functioning of the watercourse should be reinstated to at least the existing. Section 1.8 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments as to which watercourses are to be crossed with clear span bridges. Section 1.11 of the Environmental Commitments In relation to water vole watercourses including undertaking 	7 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 construction in accordance with the mitigation measures set out in the BMS (Document 7.9). Section 1.12 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments in relation to otter watercourses including undertaking construction in accordance with the mitigation measures set out in the BMS (Document 7.9). 		
Woodland W6 and W8 Communities	 Woodland W6 and W8 Communities Permanent and temporary direct loss of habitat All the relevant CEMP General Principle measures and CEMP measures AE11 to AE² AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE41, BS11, relevant BS measures 	All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to WE23, WE41, BS11, relevant BS measures	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Temporary disturbance/ displacement/ degradation	between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, TN11 to TN14, R1 to R4.	OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1).	
	Severance and fragmentation	Chapter 7, Landscape Assessment (Document 5.7), Chapter 11, Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12,	OSMP (Document 7.10) which is secured by Requirement of the	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Water Quality, Resources and Flood Risk (Document 5.12) and Chapter 14, Air Quality (Document 5.14), the following additional measures would be implemented:	DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
		 Habitat replacement and improvement where appropriate, maintaining existing seed bank in top soil of woodland kept separate to that of other habitats. Where trees and woodland would be lost beneath the OHL, replacement planting would be located as close to that lost as possible, with 	Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set out on the Indicative Landscape	
		alternative planting in these areas to include scrub in order to prevent fragmentation of habitats and loss of food sources, and to provide good connectivity to other woodland blocks in the locations available.	Plans (Documents 5.7.1.12- 5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
		 Where trees and woodland would be lost beneath the OHL, landscape mitigation planting would be as close as possible to that lost, and where not possible, to provide good connectivity 		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 to other woodland blocks in the locations available. Landscape mitigation planting would ensure no net loss of trees, with as much replacement planting as possible within the Order Limits. Planting would occur within Gylched Covert and Carrog Isa woodlands. Planting mixes would be tailored to the existing Annex 1 woodland communities (with the exception of ash) and comprise native species of local provenance where possible. This would be tailored to help support LBAP targets where possible. Management of Gylched Covert in line with maintaining this W8e community where possible. 		
Annex 1 Fen Meadow	Direct loss through permanent and temporary loss of	All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, SM11, SM12, WE11, WE21 to	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Communities	habitat Temporary disturbance/displaceme nt/degradation Hydrological alteration	 WE23, WE41, WE51, WE52, WE54 to WE56BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, R1 to R3. In addition to the measures set out in Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and Chapter 14, Air Quality (Document 5.14), the following additional measures would be implemented: Habitat replacement and improvement where appropriate, maintaining existing seed bank in top soil of each type kept separate to that of other habitats. Ensure continuity of hydrological connectivity with this habitat. 	 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Indicative Reinstatement Plans (Document 7.4.1.1) which are secured by Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). 	
Badger	Direct loss of habitat	 All the relevant CEMP General Principle measures and CEMP measures AE11, AE12, AE14, AE21, AE41, NV11, NV14, NV32, NV33, 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement	

Table 4 Summary	of Ecology and Nature C	Conservation Control and Management Measures 8	Mitigation Measures
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	displacement/ degradation	NV36, WE11, WE21 to WE23, WE31, WE41, BS402, BNC11 to BNC13, BNC21 to BNC24, BNC29 to BNC211, TH21, R1 to R6.	6 of the DCO (Document 2.1). Construction hours are secured
	Operational noise.	In addition to the measures set out in Chapter 15, Construction Noise and Vibration (Document 5.15)	by Requirement 8 of the DCO (Document 2.1).
	Severance and Fragmentation	and Chapter 16, Operational Noise and Vibration (Document 5.16), the following additional measures would be implemented:	OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1).
	Risk of Direct Impact Loss of damage to shelter	• Pre-construction surveys would be required throughout the Proposed Development to ensure that no new setts are created within 30 m of the working areas prior to both	Noise and Vibration Management Plan (NVMP) (Document 7.9) which is secured by Requirement
		DNO as each may differ in timings in some locations by a few years. If an active badger sett was discovered at this time within or up to 30 m from the Order Limits, a revised mitigation	OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).
		strategy would be required, which could amend the permitted location/timing/method of construction activities and require a licence	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents

able 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 from NRW. Replacement of temporary loss of habitats, improved where appropriate, for example replacing with intact hedgerows where defunct hedgerows are temporarily lost, would be of benefit to badger. Trees within the Order Limits through the ravine at Coed Nant Y Garth would be managed to above ground level only and not fully removed where possible but in particular within 30 m of a 	5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
		 badger sett. Where trees and woodland would be lost beneath the OHL, replacement planting would be located as close to that lost as possible, with alternative planting in these areas to include scrub in order to prevent fragmentation of habitats and loss of food sources potentially used by badger. Landscape planting around the THH/CSECs 		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 and Pentir Substation has been designed to improve on existing habitats where possible. Ty Fodol THH area is currently improved grassland and although a smaller area of replacement habitat would be provided due to presence of structures, the landscaping would provide more suitable foraging habitat for badger than the existing, for example hedgerows and scrub. This would be of benefit to badger. 		
Water vole	Temporary direct loss of habitat Temporary disturbance/ displacement/ degradation	 All the relevant CEMP General Principle measures and CEMP measures AE11, AE12, AE14, AE21, AE41, NV11, NV14, WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC24, BNC27, 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours are set out in Requirement 8 of the DCO	
	Severance and Fragmentation	BNC29 to BNC211, R1 to R3, R5, R6. In addition to the measures set out in Chapter 11, Geology, Hydrogeology and Ground Conditions	(Document 2.1). OCTMP (Document 7.5) which is	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Direct Impact	(Document 5.11) and Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12), the	secured by Requirement 6 of the DCO (Document 2.1).	
	Loss or damage to shelter, protection and/or breeding habitat	 following additional measures would be implemented: Pre-construction surveys would be required on watercourses throughout the Proposed Development to check the working areas prior to construction. If further burrows were discovered at this time, a revised mitigation strategy would be required, which could amend the permitted location/timing/method of construction activities and require a licence from NRW. Vegetation removal/degradation would include staged habitat degradation to encourage water voles to remain outside the working area and stay within suitable remaining habitat. This could also apply should they have been found to be active within working areas following preconstruction surveys. Maintenance of the 	Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		habitat would be undertaken throughout construction to ensure that it remained unsuited to water voles under the supervision of the ecological clerk of works.	(Document 2.1).	
		• Watching brief by an ecological clerk of works would be undertaken during vegetation removal/degradation, reinstating habitats and during maintenance and decommission works where required.		
		• No works would be conducted within 3 m of a watercourse unless a crossing is being installed, with a buffer of 5 m required for sections of watercourse found to have presence of water voles prior to construction in addition to that already known.		
		 As stated in Chapter 4, Construction, Operation, Maintenance and Decommissioning (Document 5.4), consent for the detailed culvert design would be sought from NRW post grant of the DCO (Document 2.1), therefore 		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		culverts would be designed to allow the safe passage of water voles where the Proposed Development crosses watercourses in accordance with CIRIA (2010).		
		• Replacement of temporary loss of habitat through planting or natural regeneration. This includes that the bed, morphology and in channel functioning of the watercourse should be reinstated to at least the existing.		
		• Section 1.11 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments in relation to water vole watercourses including undertaking construction in accordance with the mitigation measures set out in the BMS (Document 7.9).		
Otter	Temporary direct loss of habitat	 All the relevant CEMP General Principle measures and CEMP measures AE11, AE12, AE14, AE21, AE41, NV11, NV14, NV32, NV33, 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement	
	Temporary disturbance/	NV36, WE11, WE21 to WE23, WE31, WE41,		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	displacement/ degradation Severance and Fragmentation	WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC24, BNC27, BNC29 to BNC211, R1 to R3, R5, R6.	6 of the DCO (Document 2.1). Construction hours are secured by Requirement 8 of the DCO (Document 2.1).	
	Direct Impact	 In addition to the measures set out in Chapter 11, Geology, Hydrogeology and Ground Conditions (Document 5.11) and Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12), Chapter 15, Construction Noise and Vibration (Document 5.15) and Chapter 16, Operational Noise and Vibration (Document 5.16), the following additional measures would be implemented: Pre-construction surveys would be required on watercourses throughout the Proposed Development to check the working areas prior to construction. If holts/resting places were 	Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
		discovered at this time, a revised mitigation	Schedule of Environmental	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		strategy would be required, which could amend the permitted location/timing/method of construction activities and require a licence from NRW.	Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Vegetation removal/degradation would encourage otter to remain outside the area and stay within suitable remaining habitat. Maintenance of the habitat would be undertaken throughout construction to ensure that it remained unsuited to otter under the supervision of an ecological clerk of works. 		
		• A watching brief by an ecological clerk of works would be undertaken during vegetation removal/degradation and when reinstating any during maintenance and decommission works where required.		
		 No works would be conducted within 3 m of a watercourse unless a crossing is being installed, with a buffer of 5 m required for sections of watercourse found to have presence 		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		of otter prior to construction in addition to that already known. Larger buffers would apply should any otter resting place or holt be found.		
		through planting or natural regeneration. This includes that the bed, morphology and in channel functioning of the watercourse should be reinstated to at least the existing.		
		 Section 1.12 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments in relation to otter watercourses including undertaking construction in accordance with the mitigation measures set out in the BMS (Document 7.9). 		
Bats	Permanent disturbance/ displacement /degradation	All the relevant CEMP General Principle measures and CEMP measures including GP85 to GP87, AE11 to AE14, AE21, AE41, NV11, NV12, NV14, NV32, NV33, NV36, SM11,	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Direct loss of roosting	SM12, FM14, BS11, BS403, BNC11 to BNC13,		

Table 4 Summa	Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
	habitat	BNC21 to BNC24, BNC26, BNC211, TH11 to TH14, TH21, R1 to R6	Construction hours are secured by Requirement 8 of the DCO		
	Temporary disturbance/	In addition to the measures committed to in	(Document 2.1).		
	displacement/ degradation	Chapter 7, Landscape Assessment (Document 5.7), Chapter 14, Air Quality (Document 5.14), Chapter 15, Construction Noise and Vibration	OCTMP (Document 7.5) which is secured through Requirement 6		
	Severance and Fragmentation	(Document 5.15) and Chapter 16, Operational Noise and Vibration (Document 5.16) the following additional measures would be implemented	OSMP (Document 7.10) which is		
	Permanent loss of foraging habitat	Specific measures also required include:	DCO (Document 2.1).		
	Temporary loss of	 A European Protection Species Mitigation Licence from NRW would be required prior to the potential loss of one bat roost (W-5032-1-B) 	7 of the DCO (Document 2.1).		
	Toraging habitat	and potential disturbance of W-1991-7-C and W-1991-7-E and W-2039-12-B. Mitigation required would be replacement of this roost by means of installation of bat boxes on trees	Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).		
		within the Order Limits, located as close as possible to the existing roost sites.	Mitigation planting scheme as set out on the Indicative Landscape		

Table 4 Summary	of Ecology and Nature C	Conservation Control and Management Measures 8	Mitigation Measures
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 A European Protected Species Mitigation Licence from NRW would be required should buildings B2 and B4 be affected. Mitigation required would be replacement of these roosts by means of installation of bat boxes within the Order Limits, located as close as possible to the existing roost sites. Habitat replacement and improvement where appropriate, for example with intact hedgerows where defunct hedgerows are temporarily lost. Replanting of woodland as near as possible to that lost and creating links between areas of woodland to maintain or improve foraging and commuting corridors/linear features for bats. Where trees and woodland would be lost within the Order Limits, replacement planting would be located as close to that loss as possible, with alternative planting in these areas to include scrub in order to prevent fragmentation of habitats and maintain foraging and commuting 	Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 corridor features for bats. Any bat boxes provided as compensation for either confirmed roost or potential roosting feature loss/disturbance, primarily affecting the lost woodland habitat such as Gylched Covert and Pentir Substation cCWS woodland, would be installed prior to the loss of the roosts (tree removal) and maintained in accordance with the BMS and woodland management plans in order to ensure that they remain in post development. Replacement of lost woodland within Gylched Covert and the habitat management within the woodland would result in a short term change of foraging habitat for bats which would create edge and glade habitats and would result in an improvement for foraging and commuting bats. Hedgerows and linear stretches of vegetation would be maintained as lines of scrub whore 		
		such features are crossed by the OHL to maintain or improve foraging and commuting		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 corridors/linear features for bats. Landscape planting around the THH/CSEC and Pentir Substation would be designed to improve on existing quality of habitats for bats where possible. Both Braint and Ty Fodol THH/CSEC sites are currently improved grassland and although a smaller area of replacement habitat would be provided due to presence of structures, the landscaping would provide suitable habitat for bats such as woodland, hedgerows and scrub. All hedgerow, woodland and trees planted and all woodland areas coppiced would be maintained for 5 years after planting to ensure successful establishment, including replanting where required. The bat boxes would be monitored by checking once annually as part of the bat licence and 		
		management plans for five years following their erection, between May and September each		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 year. Section 1.10 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments in relation to bats such as avoiding removal of a bat barn and bat roosts. 		
Red squirrel	Direct loss of habitat Temporary disturbance/ displacement/ degradation	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, NV11, NV12, NV14, NV32, NV33, NV36, BS11, BS71, BS72, BS403, BNC11 to BNC13, BNC21 to BNC24, BNC26, BNC210, BNC211, TH11 to TH14, TH21, R4 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).	
	Severance and Fragmentation	In addition to the measures committed to in Chapter 7, Landscape Assessment (Document 5.7), Chapter 14, Air Quality (Document 5.14),		
	Operational noise.	Chapter 15, Construction Noise and Vibration (Document 5.15) and Chapter 16, Operational Noise and Vibration (Document 5.16), the	secured by Requirement 6 of the DCO (Document 2.1).	
	Risk of Direct Impact	following additional measures would be implemented:	Tree and Hedgerow Protection Strategy which is secured by	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Pre-construction surveys would be required throughout the Proposed Development to check the working areas for active dreys prior to vegetation removal. No active dreys are known within the Order Limits to date. Discussions would be held with NRW and RSTW should this change prior to any works that could affect an active drey, including if necessary discussion with NRW in order to obtain a licence. Programme of works would include for appropriate timing of clearance of trees. Replacement of temporary loss of habitats, improved where appropriate, for example replacing with intact hedgerows where defunct hedgerows are temporarily lost. Replanting of woodland as near as possible to that lost (e.g. Gylched Covert) and creating stepping stones between areas of woodland would be lost beneath the OHL, replacement planting would 	Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 be located as close to that lost as possible, with alternative planting in these areas to include scrub in order to prevent fragmentation of red squirrel habitats. 		
		 Landscape planting around the THH/CSEC and substation has been designed to improve on existing quality of these habitats for red squirrels where possible. Both Braint and Ty Fodol THH areas are currently improved grassland and hedgerows, and although a smaller area of replacement habitat would be provided due to presence of structures, the landscaping would include suitable habitat for red squirrel such as woodland, hedgerows, scrub and species rich grassland. 		
Brown Hare and Polecat	Direct loss of habitat	• All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14,	All the measures are set out in the CEMP (Document 7.4) which	
	Temporary disturbance/ displacement/	AE21, AE41, NV11, NV12, NV14, NV32, NV33, NV36, SM11, SM12, BS11, BS403, BNC11 to	is secured through Requirement	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	degradation	BNC13, BNC21 to BNC26, BNC29 to BNC211, TH11 to TH14, TH21, R1 to R4.	6 of the DCO (Document 2.1).	
	Operational noise.	In addition to the measures committed to in Chapter 7, Landscape Assessment (Document	Construction hours which are secured by Requirement 8 of the DCO (Document 2.1)	
	Severance and	5.7), Chapter 14, Air Quality (Document 5.14),		
	Fragmentation	(Document 5.15) and Chapter 16, Operational	OCTMP (Document 7.5) which is secured by Requirement 6 of the	
	Risk of Direct Impact	Noise and Vibration (Document 5.16), the following additional measures would be	DCO (Document 2.1).	
		implemented:	OSMP (Document 7.10) which is	
		 Pre-construction surveys would be required throughout suitable habitat to check the working 	secured by Requirement 7 of the DCO (Document 2.1).	
		areas for presence prior to vegetation removal, in particular for leverets.	NVMP (Document 7.9) which is secured by Requirement 6 of the	
		 Stock proof fencing design would not prevent access for mammals such as brown hare for the 	DCO (Document 2.1).	
		duration of construction.	Tree and Hedgerow Protection	
		 Programme of works would include appropriate timing of clearance of vegetation where 	Strategy which is secured by Requirement 7 and Requirement	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		possible.	12 of the DCO (Document 2.1).	
		 Replacement of temporary loss of habitat, improved where appropriate, for example replacing with intact hedgerows where defunct hedgerows are temporarily lost. Replanting of woodland near as possible to that lost (e.g. Gylched Covert) and creating stepping stones between areas of woodland. 	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
		• Where trees and woodland would be lost beneath the OHL, replacement planting would be located as close to that lost as possible, with alternative planting in these areas to include scrub in order to prevent fragmentation of habitats.		
		• Landscape planting around the THH/CSEC and substation has been designed to improve on existing habitats where possible. Both Braint and Ty Fodol THH areas are currently improved grassland and although a smaller area of replacement habitat would be provided due to		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		presence of structures, the landscaping would provide suitable habitat for brown hare and polecat such as woodland, hedgerows scrub and species rich grassland.		
Great Crested Newt	Direct loss of habitat	All the relevant CEMP General Principle measures and CEMP measures AE11, AE12, AE14, AE21, AE41, , NV11, NV14, SM11, SM12, WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, BNC27, BNC210 to BNC211, TH11 to TH14, TH21, R1 to R6. In addition to the measures committed to in Chapter 7, Landscape Assessment (Document 5.7), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12). Chapter 14. Air	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Temporary disturbance/ displacement/ degradation			
	Severance and		Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).	
	Risk of Direct Impact		OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1).	
		Quality (Document 5.14), and Chapter 15, Construction Noise and Vibration (Document 5.15), the following additional measures would be	OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 implemented: Pre-construction GCN surveys would be required on ponds within 250 m of the Proposed Development to check the populations prior to construction and licence. European protected species mitigation licences would be secured from NRW to enable GCN fencing to be installed where working areas (not all of the Order Limits) fall within 250 m of known GCN ponds. Vegetation removal would include staged habitat degradation to encourage GCN to vacate the area and moved towards suitable remaining habitat. Pit fall traps would be used to clear GCN from these working areas for a duration dependent of the metapopulation sizes in each area. Investigation would be made of the potential for use of gated sections within a long stretch of GCN fencing to allow passage to the opposite side of the working area due to the duration of 	PICP is secured by Requirement 7 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		the fencing installation.		
		 Hand searches and watching brief by an ecological clerk of works would be undertaken during vegetation removal and working in key habitats within the GCN mitigation areas. This would also include when dismantling of cloddiau, and when replacing them following the works. 		
		• Replacement of temporary loss of habitats, improved where appropriate, for example intact hedgerows where defunct hedgerows are temporarily lost. Replanting of woodland and scrub as near as possible to that lost, creating stepping stones for GCN between areas of woodland and rebuilding of cloddiau to facilitate movement of GCN.		
		• Where trees and woodland would be lost beneath the OHL, replacement planting would be located as close to that lost as possible, with alternative planting in these areas to include		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 scrub in order to prevent fragmentation of GCN habitats. Landscape planting around the THH/CSEC and substation has been designed to improve on existing habitats where possible, and include installation of SuDS. Although GCN are not currently known in these areas, this improved habitat could encourage them into the area, although they would not be designed specifically for GCN but for the purpose of SUDs. Section 1.9 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments in relation to great crested newts such as reduce the temporary loss of suitable GCN habitat and avoiding ponds. 		
Other Amphibians	Direct loss of habitat	All the relevant CEMP General Principle measures and CEMP measures AE11, AE12,	All the measures are set out in the CEMP (Document 7.4) which	
	Temporary disturbance/	AE14, AE21, AE41, NV11, NV14, SM11, SM12,	is secured through Requirement	

Table 4 Summa	ry of Ecology and Nature	Conservation Control and Management Measures 8	Mitigation Measures
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	displacement/ degradation	WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE56, FM14, BS11, relevant BS measures between BS21 to BS202, BS401,	6 of the DCO (Document 2.1). Construction hours which are
	Severance and Fragmentation	BS403, BNC11 to BNC13, BNC21 to BNC25, BNC27, BNC210 to BNC211, TH11 to TH14, TH21, R1 to R6.	secured by Requirement 8 of the DCO (Document 2.1).
	Risk of Direct Impact	In addition to the measures committed to in Chapter 7, Landscape Assessment (Document 5.7), Chapter 12, Water Quality, Resources and	secured by Requirement 6 of the DCO (Document 2.1).
		Flood Risk, (Document 5.12), Chapter 14, Air Quality (Document 5.14), and Chapter 15, Construction Noise and Vibration (Document	OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1).
		 5.15), the following additional measures would be implemented: GCN specific mitigation through the European 	PICP is secured by Requirement 7 of the DCO (Document 2.1).
		protected species licence would benefit other amphibian species in these areas.	Mitigation planting scheme as set out on the Indicative Landscape
		Habitat replacement and improved where appropriate, for example replacing with intact hedgerows where defunct hedgerows are	5.7.1.12-5.7.1.16) which is secured through Requirement 9

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		temporarily lost. Replanting of woodland and scrub near as possible to that lost and creating stepping stones between areas of woodland. Rebuilding of cloddiau.	of the DCO (Document 2.1).	
		 Avoidance of loss if possible/replacement if loss would be unavoidable, of Pond A254 at Braint THH following construction as part of the landscape mitigation. Mitigation planting in this area would avoid fully surrounding and overshading this habitat. 		
		• Where trees and woodland would be lost beneath the OHL, replacement planting would be located as close to that lost as possible, with alternative planting in these areas to include scrub suitable for other amphibians in order to prevent fragmentation of habitats.		
		 Landscape planting around the THH/CSEC and substation has been designed to improve on the suitability of existing habitats of other amphibians where possible, and include 		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		installation of SUDs.		
		 Hibernacula and refugia for other amphibians would be created along the edges of woodland such as Gylched covert, Pentir CWS (where within the Order Limits), and within the THH/CSEC sites. 		
Reptiles	Direct loss of habitat	 All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, NV11, NV14, SM11, SM12, WE11, WE21 to WE23, WE41, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25, BNC210 to BNC211, TH11 to TH14, TH21, R1 	All the measures are set out in	
	Temporary disturbance/ displacement/ degradation		is secured through Requirement 6 of the DCO (Document 2.1).	
			Construction hours which are secured by Requirement 8 of the	
	Severance and Fragmentation	to R4.	DCO (Document 2.1).	
	Risk of Direct Impact	In addition to the measures committed to in Chapter 7, Landscape Assessment (Document 5.7), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12), Chapter 14, Air	OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1).	
		Quality (Document 5.14), Chapter 15, Construction	NVMP (Document 7.9) which is	

Table 4 Summary	Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 Noise and Vibration (Document 5.15) and Chapter 16, Operational Noise and Vibration (Document 5.16), the following additional measures would be implemented: Pre-construction reptile surveys would be required in the high quality areas of potential habitat which would be directly affected within the Order Limits, to establish if there is a change in the reptile species present and estimated populations. Vegetation removal would include staged habitat degradation to encourage reptiles to vacate the area and moved towards suitable remaining habitat. Maintenance of the habitat degraded would be undertaken throughout construction to ensure that it remained unsuited to reptiles under the supervision of an ecological clerk of works. Hand searches and watching brief by an ecological clerk of works would be undertaken 	secured through Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set out in the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		during vegetation removal and working in key habitats. This would also include when dismantling of cloddiau, and when replacing it following the works.		
		 Replacement of temporary loss of habitat suitable for reptiles, improved where possible, for example replacing intact hedgerows where defunct hedgerows are temporarily lost. Rebuilding of cloddiau. Rebuilding of cloddiau. 		
		• Where trees and woodland would be lost beneath the OHL, replacement planting would be located as close to that lost as possible, with alternative planting in these areas to include scrub in order to prevent fragmentation of habitats suitable for reptiles.		
		• Landscape planting around the THH, CSEC and substation has been designed to improve on existing habitats where possible. Both Braint and Ty Fodol THH areas are currently improved grassland and although a smaller area of		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 replacement habitat would be provided due to presence of structures, landscaping would provide suitable cover habitat for reptiles such as hedgerows and scrub. Hibernacula and refugia would be created along the edges of woodland such as Gylched covert, Pentir Substation cCWS (where within the Order Limits), and within the THH/CSEC sites. 	
Terrestrial invertebrates (butterflies, dragonflies and damselflies)	Direct loss of habitat Temporary disturbance/ displacement/ degradation	• All the relevant CEMP General Principle measures and CEMP measures AE11 to AE14, AE21, AE41, NV11, NV14, SM11, SM12, WE11, WE21 to WE23, WE41, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC25,	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	Severance and Fragmentation	BNC211, TH11 to TH14, TH21, R1 to R4. In addition to the measures committed to in Chapter 7, Landscape Assessment (Document	secured by Requirement 8 of the DCO (Document 2.1).
	Risk of Direct Impact	5.7), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12), Chapter 14, Air	secured by Requirement 6 of the

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Quality (Document 5.14), Chapter 15, Construction Noise and Vibration (Document 5.15) and Chapter 16, Operational Noise and Vibration (Document 5.16), the following additional measures would be implemented:	DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1).	
		 Habitat replacement and improvement where possible suitable for terrestrial invertebrates, for example replacing with intact hedgerows where defunct hedgerows are temporarily lost. Replanting of woodland as near as possible to that lost (e.g. Gylched Covert) and creating stepping stones between areas of woodland where possible. 	OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1).	
		 Where trees and woodland would be lost beneath the OHL, replacement planting would be located as close to that lost as possible, with alternative planting in these areas to include scrub in order to prevent fragmentation of habitats potentially suitable for terrestrial invertebrates. 	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		• Landscape planting around the THH/CSEC and substation has been designed to improve on existing habitats where possible. Both Braint and Ty Fodol THH areas are currently mainly improved grassland and although a smaller area of replacement habitat would be provided due to presence of structures, the landscaping would provide suitable habitat for terrestrial invertebrates such as woodland, hedgerows, scrub and species-rich grassland as well as SuDS.		
Aquatic invertebrates	Direct loss of habitat	 All the relevant CEMP General Principle measures and CEMP measures WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE58, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC24, BNC27. 	All the measures are set out in the CEMP (Document 7.4) which	
	Temporary disturbance/ displacement/ degradation		is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are	
	Risk of direct impact	BNC211, R2, R3, R5, R6. In addition to the measures committed to in	secured by Requirement 8 of the	
Table 4 Summary	Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
-----------------	--	---	--	--
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Severance and Fragmentation	 chapters Chapter 11, Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and Chapter 15, Construction Noise and Vibration (Document 5.15), the following additional measures would be implemented: As stated in Chapter 4 (Document 5.4), consent for the detailed culvert design would be sought from NRW post grant of the DCO, therefore culverts would be designed to allow the safe passage of aquatic invertebrates where the Proposed Development crosses watercourses in accordance with CIRIA (2010). Replacement of temporary loss of aquatic habitat through planting or natural regeneration. This includes that the bed, morphology and in channel functioning and design of the watercourse would be reinstated to at least the existing. 	 DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1). 	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
Freshwater Fish	Direct loss of habitat	All the relevant CEMP General Principle measures and CEMP measures NV11, NV14,	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	Temporary disturbance/ displacement/	NV32, NV33, NV36, WE11, WE21 to WE23, WE31, WE41, WE51, WE52, WE54 to WE58, FM14, BS11, relevant BS measures between BS21 to BS202, BS401, BS403, BNC11 to BNC13, BNC21 to BNC24, BNC27, BNC211, R2, R3, R5, R6.	
	Risk of direct impact		Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).
	Severance and Fragmentation	In addition to the measures set out in Chapter 11, Geology, Hydrogeology and Ground Conditions (Document 5.11), Chapter 12, Water Quality, Resources and Flood Risk (Document 5.12) and	Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1).
		Chapter 15, Construction Noise and Vibration (Document 5.15), the following additional measures would be implemented:	OCTMP (Document 7.5) which is secured by Requirement 6 of the DCO (Document 2.1).
		• Pre-construction fish habitat surveys may be required on watercourses crossing points throughout the Proposed Development to check the working areas prior to construction. If suitable habitat were discovered at that time on	NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1).

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 watercourses with known populations of fish, a revised mitigation strategy could be required, which could amend the permitted location/method of construction activities. As stated in Chapter 4, Construction, Operation, Maintenance and Decommissioning (Document 5.4), consent for the detailed culvert design would be sought from NRW post grant of the DCO, therefore culverts would be designed to allow the safe passage of fish where the Proposed Development crosses watercourses in accordance with CIRIA (2010). Watching brief by an ecological clerk of works would be undertaken during vegetation removal/degradation and crossing installation, reinstating habitats potentially suitable for freshwater fish and during maintenance and decommissioning works. Replacement of temporary loss of fish habitat through reinstatement of channel sediments, 	SMP (Document 7.10) is a plan stipulated in Requirement 7 of the DCO (Document 2.1). PICP is a plan stipulated in Requirement 7 of the DCO (Document 2.1).

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		planting of bankside habitat or natural regeneration. This includes the reinstatement of the bed, morphology and in channel functioning of the watercourse to at least the existing condition.	
Whooper swan	Direct loss of habitat Temporary disturbance/ displacement/	 All the relevant CEMP General Principle measures and CEMP measures NV11 to NV14, BNC11 to BNC13, BNC21, BNC22, BNC24, R1 to R3. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	Collision Effects	Phasing of work in the area of Bryn Dyfrydog (between pylons 4AP032 and 4AP034) so that vegetation clearance, establishment of working areas and habitat restoration as much as possible are completed outside of the months September – April. Where work cannot be avoided during this period, a watching brief by an experienced ornithologist would be undertaken to monitor potential impacts on whooper swan which would record vigilance levels of foraging birds and flight/startle responses using standard methods to	Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). Management Plan (NVMP) (Document 7.11) which is secured by Requirement 6 of the DCO (Document 2.1).

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 record percentage time feeding/preening/observing and, if applicable, recording triggers to flight responses including proximity to source. Temporary exclusion zones would be imposed on work should adverse impacts be detected. No mitigation required for collision risk 	
Mute Swan	Collision Effects	No mitigation required for collision risk	
Greylag goose	Direct loss of habitat Temporary disturbance/ displacement/ degradation	 CEMP Measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13, R1 to R3. No mitigation required for collision risk 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Collision Effects		secured by Requirement 13 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1).
Shelduck	Collision Effects	No mitigation required for collision risk	
Mallard	Collision Effects	• CEMP Measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13,	All the measures are set out in the CEMP (Document 7.4) which
	Temporary disturbance/ displacement/ degradation	R1 to R3.No mitigation required for collision risk	is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1).
			NVMP (Document 7.9) which is secured by Requirement 6 of the

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			DCO (Document 2.1).
Shoveler	Collision Effects	No mitigation required for collision risk	
Wigeon	Collision Effects	 CEMP Measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13, 	All the measures are set out in the CEMP (Document 7 4) which
	Temporary disturbance/ displacement/ degradation	 R1 to R3.GP813, NV11 - 14, BNC11 – 13, R1 - R3. No mitigation required for collision risk 	 is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the
			DCO (Document 2.1).
Teal	Collision Effects	CEMP Measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13, R1 to R3.	All the measures are set out in the CEMP (Document 7.4) which
	Temporary disturbance/		is secured through Requirement

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	displacement/ degradation	 Phase work so that vegetation clearance, establishment of working areas and habitat restoration within 500m of inland waterbodies at Wylfa, Bryn Dyfrydog and Cors Erddreiniog are completed outside of the breeding bird season (March-September for most bird species). Where this is not possible all potential breeding habitat to be removed would be checked by an experienced ornithologist prior to removal to ensure that teal are not breeding. This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). No mitigation required for collision risk 	6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1).
Tufted Duck	Collision Effects	No mitigation required for collision risk	
Gadwall	Collision Effects	No mitigation required for collision risk	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Cormorant	Collision Effects	No mitigation required for collision risk		
Little Egret	Collision Effects	No mitigation required for collision risk.		
Grey Heron	Collision Effects	CEMP measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13,	All the measures are set out in the CEMP (Document 7.4) which	
	Direct habitat loss at breeding sites	 R1 to R3. Phase work so that vegetation clearance, establishment of working areas and habitat restoration are completed outside of the breeding bird season (February – July) if this nest is used at the time of construction. Where 	is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1).	
	Damage or destruction of a nest			
	Temporary disturbance/ displacement/ degradation	 this is not possible all potential breeding habitat to be removed would be checked by an experienced ornithologist prior to removal to ensure that grey heron are not breeding .This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). Working areas set up at the onset of 	NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		construction should be strictly adhered to in order to prevent additional losses of breeding habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on works should a high likelihood of impacts be detected.	
Red Kite	Collision Effects	No mitigation required for collision risk	
Marsh Harrier	Collision Effects	No mitigation required for collision risk	
Hen Harrier	Collision Effects	No mitigation required for collision risk	
Kestrel	Collision Effects Temporary habitat loss	 CEMP measures GP11, GP44, GP83 - 87, GP813, NV11 - 14, NV31, BNC11 – 13, TH11 – 14, TH21, R1 – 4. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement
	at possible breeding sites	 Phase work so that vegetation clearance, establishment of working areas and habitat restoration are completed outside of the broading bird coopen (March September) 	6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the
	Permanent habitat	breeding bitd season (march-September).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	losses from nesting areas Temporary disturbance and displacement from	Where this is not possible all potential breeding habitat to be removed would be checked by an experienced ornithologist prior to removal to ensure that kestrel are not breeding. This would ensure compliance with the Wildlife and Countryside Act 1081 (as amended)	DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
	Destruction and / or damage of the nests	 Working areas set up at the onset of construction should be strictly adhered to in order to prevent additional losses of breeding habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on work should a high likelihood of impacts be detected. No mitigation required for collision risk 	
Hobby	Collision Effects	No mitigation required for collision risk	
Peregrine falcon	Collision Effects	No mitigation required for collision risk	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
Merlin	Collision Effects	No mitigation required for collision risk	
Lapwing	Temporary disturbance/ displacement/ degradation Collision Effects Potential for Destruction/Damage of Nests	 CEMP Measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13, BNC211, R1 to R3. Phase work so that vegetation clearance within the Order Limits where the Proposed Development passes the southern end of Cors Erddreiniog is completed and working areas are established outside of the breeding bird season (March-September). Where this is not possible all potential breeding habitat to be removed would be checked by an experienced ornithologist prior to removal to ensure that lapwing are not breeding. This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). Working areas set up at the onset of 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1).
		order to prevent additional loss of breeding and	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 wintering bird habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on work should a high likelihood of impacts be detected. No mitigation required for collision risk 		
Curlew	Direct loss of foraging habitat	 CEMP Measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13, BNC211, R1 to R3. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1).	
	Temporary disturbance/ displacement/ degradation	 Pre – construction survey of the very small number of potential breeding sites within section C within 800 m of the Order Limits and visual and noise screening measures put in 		
	Collision Effects	place around working areas adjacent to any active nests that are found.		
	Potential for Destruction/Damage of Nests	• Phase work so that vegetation clearance within the Order Limits where they pass the southern end of Cors Erddreiniog is completed and working areas are established outside of the breeding bird season (March-September) in		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 areas that support breeding curlew. Where this is not possible all potential breeding habitat to be removed would be checked by an experienced ornithologist prior to removal to ensure that curlew are not breeding. This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). Reinstatement of habitats removed for temporary access tracks and working areas Working areas set up at the onset of 		
		 construction should be strictly adhered to in order to prevent additional loss of breeding and wintering bird habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on work should a high likelihood of impacts be detected. No mitigation required for collision risk 		
Snipe	Direct loss of habitat	CEMP Measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13,	All the measures are set out in	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Temporary disturbance/ displacement/ degradation Collision Effects	 BNC211, R1 to R3. Phase work so that vegetation clearance within the Order Limits where they pass the southern end of Cors Erddreiniog is completed and working areas are established outside of the breeding bird season (March-September) in areas that support habitat suitable for breeding snipe and where snipe have been reported as breeding. If this is not possible all potential breeding habitat to be removed from these areas would be checked by an experienced ornithologist prior to removal to ensure that snipe are not breeding. This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). Working areas set up at the onset of construction should be strictly adhered to in order to prevent additional loss of breeding and wintering bird habitat. ECoW to advise operations during the construction phase and 	the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 temporary exclusion zones on work should a high likelihood of impacts be detected. Reinstatement of habitats removed for temporary access tracks and working areas. No mitigation required for collision risk 		
Chough	Collision Effects	No mitigation required for collision risk		
Barn Owl	Temporary disturbance/ displacement/ degradation	• CEMP measures: all relevant General Principle measures, NV11 to NV14, NV31, NV32, BNC11 to BNC13, R1 to R4.	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours are set out in Requirement 8 of the DCO (Document 2.1).	
	Temporary habitat loss Potential for Destruction/Damage of	 Pre – construction survey of potential breeding sites within 100m of the Order Limits where possible and visual and noise screening measures put in place around working areas adjacent to any active nests or roosts that are 		
	Nests	 found. Vegetation management/clearance at Ty Fodol would be completed outside of the breeding season (March – September), and where 	NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor Po	otential Source of ffect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 possible, the establishment of working areas; Where landowner access can be agreed, for each confirmed nest site within 100 m of the Order Limits, at least one barn owl would be installed, in advance of all site clearance and construction work, in an undisturbed location to be determined by the ECoW appointed by National Grid. This measure is not relied on within the assessment. Working areas set up at the onset of construction should be strictly adhered to in 		
		order to prevent additional loss of breeding and wintering bird habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on work should a high likelihood of impacts be detected.		
Farmland, Di Hedgerow, ar	Pirect loss of foraging nd breeding habitat	 CEMP measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13, 	All the measures are set out in the CEMP (Document 7.4) which	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Woodland and Scrub Breeding Assemblage (Passerines of High Conservation Concern) – Entirety of Order Limits	Temporary disturbance/ displacement/ degradation Birds - Potential for Destruction/Damage of Nests	 TH11 – 14, TH21, R1 to R4. Phase work so that vegetation clearance, establishment of working areas and habitat restoration are completed outside of the breeding bird season (March-September for most bird species). Where habitat cannot be removed during this period it would be checked prior to removal by an experienced ornithologist to ensure that no active nests are present prior to removal. This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). Full reinstatement or replacement of all woodland, scrub hedgerow, grassland, wetland, bedgerow and grassland babitats removed or 	 is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). 	
		 managed to accommodate the temporary construction compounds, temporary access and working areas. Replacement of hedgerows lost permanently to ansure point loss of hedgerow habitat and 	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 planting of an additional 3,893 m² of woodland in areas other than the THH/CSECs or Gylched Covert. Habitat reinstatement and replacement to be initiated upon completion of works in a given section or area of the Proposed Development. Where possible, new habitat creation should occur in advance of or at the same time as construction work. 	of the DCO (Document 2.1).	
		• Working areas set up at the onset of construction should be strictly adhered to in order to prevent additional loss of breeding and wintering bird habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on work should a high likelihood of impacts be detected.		
Woodland Breeding Bird Assemblage	Direct loss of habitat	CEMP measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13,	All the measures are set out in the CEMP (Document 7.4) which	
	Temporary disturbance/	TH11 – 14, TH21, R1 to R4.	is secured through Requirement	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
(passerines of high conservation concern) – Wylfa	displacement/ degradation Birds - Potential for Destruction/Damage of Nests	 Phase work in this area so that vegetation clearance, establishment of working areas and habitat restoration are completed outside of the breeding bird season (March-September for most bird species). Where this is not possible all potential breeding habitat to be removed would be checked by an experienced ornithologist prior to removal to ensure that no active nests are present prior to removal. This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). Woodland habitat planting within the Order Limits to replace woodland lost. Working areas set up at the onset of construction would be strictly adhered to in order to prevent additional loss of breeding bird habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on work should a high likelihood of impacts be detected. 	6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set out on the indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Woodland Breeding Bird Assemblage (passerines of high conservation concern) – Gylched Covert	Direct loss of habitat Temporary disturbance/ displacement/ degradation Birds - Potential for Destruction/Damage of Nests	 CEMP measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13, TH11 – 14, R1 to R4. Phase work in this area so that vegetation clearance, establishment of working areas and habitat restoration are completed outside of the breeding bird season (March-September for most bird species). Where this is not possible all potential breeding habitat to be removed would be checked by an experienced ornithologist prior to removal to ensure that that no active nests are present prior to removal. This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). Woodland habitat planting (3,160 m²) within the Order Limits to replace woodland lost on a like for like basis where possible. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Working areas set up at the onset of construction should be strictly adhered to in order to prevent additional loss of breeding bird habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on work should a high likelihood of impacts be detected. Future habitat management of Gylched Covert in line with maintaining and improved the quality of this CWS woodland to be agreed as part of the draft DCO (Document 2.1). Outline of this is provided in the BMS (Document 7.7), but full details would be provided in a management plan. 	5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
Breeding Bird Assemblage (passerines of	Temporary direct loss of foraging and breeding habitat	 CEMP measures all relevant General Principle measures, NV11 to NV14, BNC11 to BNC13, TH11 – 14, TH21, R1 to R4. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement	
high conservation	Permanent direct loss of	 Phase work in this area so that vegetation clearance, establishment of working areas and 	6 of the DCO (Document 2.1).	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
concern) – Pentir Sub Station	foraging and breeding habitat	habitat restoration are completed outside of the breeding bird season (March-September for most bird species). Where habitat cannot be	Construction hours are secured by Requirement 8 of the DCO (Document 2.1).	
	Temporary disturbance/ displacement/ degradation	 removed during this period it would be checked prior to removal by an experienced ornithologist to ensure that no active nests are present prior to removal. This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). Full reinstatement or replacement of all woodland, hedgerow, dry dwarf shrub heath and grassland habitats removed or managed to 	NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Permanent disturbance Birds - Potential for Destruction/Damage of		Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and is also secured by Requirement 12 of	
	Nests	accommodate the temporary construction compounds, temporary access and working areas, other than where there is permanent infrastructure.	Mitigation planting scheme as set out on the Indicative Landscape Mitigation Pans (Documents	
		 Replacement of hedgerows lost permanently within the Order Limits to ensure no net loss of hedgerow habitat. 	5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
		 Planung of nedgerows where there are currently 		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 none on field boundaries and along the edges of access tracks to provide a net habitat gain and/or to offset hedgerow losses elsewhere. Planting of additional woodland over land that is 	
		currently improved pasture and subject to compulsory land acquisition.	
		 Working areas set up at the onset of construction should be strictly adhered to in order to prevent additional loss of breeding bird habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on work should a high likelihood of impacts be detected. 	
Farmland/Hedger ow Breeding Assemblage	Temporary direct loss of foraging and breeding habitat	 CEMP measures all relevant General Principle measures, NV11 to NV14, NV31, NV32, BNC11 to BNC13, TH11 – 14, TH21, R1 to R4. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement
(Passerines of High Conservation	Permanent direct loss of foraging and breeding	 Phase work in this area so that vegetation clearance, establishment of working areas and habitat restoration are completed outside of the 	6 of the DCO (Document 2.1). Construction hours which are

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Concern) – Braint Tunnel Head House / Cable Sealing End Compound	habitat Temporary Disturbance/ displacement/ degradation Birds - Potential for Destruction/Damage of Nests	 breeding bird season (March-September for most bird species). Where habitat cannot be removed during this period it would be checked prior to removal by an experienced ornithologist to ensure that no active nests are present prior to removal. This would ensure compliance with the Wildlife and Countryside Act 1981 (as amended). Full reinstatement of all hedgerow and grassland habitats removed to accommodate the construction compound and working areas. Replacement of hedgerows lost permanently to ensure no net loss of hedgerow habitat. Planting of hedgerows around the perimeter of the THH/CSEC to provide a net habitat gain and/or to offset hedgerow losses elsewhere. Working areas set up at the onset of an and a set of the set of	secured by Requirement 8 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured by Requirement 6 of the DCO (Document 2.1). Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement 12 of the DCO (Document 2.1). Mitigation planting scheme as set on the Indicative Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
		order to prevent additional loss of breeding and		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		wintering bird habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on work should a high likelihood of impacts be detected.		
Farmland/Hedger ow Breeding Assemblage (Passerines of	Temporary direct loss of foraging and breeding habitat	 CEMP measures NV11 to NV14, NV31, NV32, BNC11 to BNC13, TH11 – 14, TH21, R1 to R4. Phase work in this area so that vegetation clearance, establishment of working areas and 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1)	
(Passerines of High Conservation Concern) – Ty Fodol Tunnel Head House / Cable Sealing End Compound	Permanent direct loss of foraging and breeding habitat	habitat restoration are completed outside of the breeding bird season (March-September for most bird species). Where habitat cannot be removed during this period it would be checked prior to removal by an experienced ornithologist to ensure that no active nests are present prior to removal. This would ensure compliance with the Wildlife and Countryside Act 1981 (as	Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).	
	Temporary disturbance/ displacement/ degradation		NVMP (Document 7.9 which is secured by Requirement 6 of the DCO (Document 2.1).	
	Birds - Potential for Destruction/Damage of	 amended). Reinstatement of all hedgerow and grassland habitats removed to accommodate the 	Tree and Hedgerow Protection Strategy which is secured by Requirement 7 and Requirement	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor Pote Effe	tential Source of ect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Nes	sts	 temporary construction/decommissioning compound and working areas other than where there is permanent infrastructure. Planting of hedgerows around the perimeter of the Braint THH/CSEC to provide a net habitat gain and/or to offset hedgerow losses elsewhere. Working areas set up at the onset of construction should be strictly adhered to in order to prevent additional loss of breeding and wintering bird habitat. ECoW to advise operations during the construction phase and temporary exclusion zones imposed on work should a high likelihood of impacts be detected. 	12 of the DCO (Document 2.1). Mitigation planting scheme as set out on the Indicative Landscape Mitigation Plans (Documents 5.7.1.12-5.7.1.16) which is secured through Requirement 9 of the DCO (Document 2.1).	
Waterfowl TBN utilising Menai Strait marine and inter-tidal habitat	M blowout	CEMP measure WE511.	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement	

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
within the Order Limits			6 of the DCO (Document 2.1).	
Dyfi Estuary SPA	Collision effects	No mitigation required for collision risk		
Liverpool Bay SPA	Collision effects	No mitigation required		
	Temporary disturbance/ displacement/ degradation			
Lavan Sands and	Collision Effects	No mitigation required		
	Temporary disturbance/ displacement/ degradation			
Puffin Island SPA	Collision Effects	No mitigation required for collision risk		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures				
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Cemlyn Bay SSSI	Collision Effects	No mitigation required		
	Temporary disturbance/ displacement/ degradation			
Llyn Alaw SSSI	Collision effects	No mitigation required		
	Temporary disturbance/ displacement/ degradation			
Malltraeth Marsh (Cors Ddyga) SSSI	Collision effects	No mitigation required for collision risk		
Cors Tregarnedd Fawr CWS	Collision effects	No mitigation required for collision risk		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
Cemlyn NWWTR	Collision effects	No mitigation required for collision risk	
	Temporary disturbance/ displacement/ degradation		
Intertidal Habitats and associated species	TBM blow-outs causing habitat loss and contamination	• CEMP Measures WE511, BNC28, NV32, NV33.	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). 2.1).
Subtidal Habitats and associated species	TBM blow-outs causing habitat loss and contamination	• CEMP Measures WE511, BNC28, NV32, NV33.	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
Shellfish	TBM blow-outs causing habitat loss and	• CEMP Measures WE511, BNC28, NV32, NV33.	All the measures are set out in the CEMP (Document 7.4) which

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	contamination		is secured through Requirement 6 of the DCO (Document 2.1).
Marine Mammals	EMFs causing disorientation of individuals during migration.	 CEMP Measures WE511, BNC28, NV32, NV33. Mitigation for EMF is provided through mitigation by design, as the tunnel is a minimum of 10 m below the bed of the Menai Strait. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	Disturbance of individuals or direct effects from noise and vibration		
Fish (migratory and marine)	TBM blow-outs causing habitat loss and contamination	 CEMP Measures WE511, BNC28, NV32, NV33. Mitigation for EMF is provided through mitigation by design, as the tunnel is a minimum of 10 m below the bed of the Menai Strait. 	All the measures are set out in the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	Disturbance of individuals or direct effects from noise and		

Table 4 Summary of Ecology and Nature Conservation Control and Management Measures & Mitigation Measures			
Receptor	Potential Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	vibration		
	EMFs causing disorientation of individuals during migration.		

5 Historic Environment

5.1 INTRODUCTION

5.1.1 Control and management measures and mitigation measures required to mitigate the potential historic environment effects from the construction, operation, maintenance and decommissioning of the Proposed Development are set out in section 9 of Chapter 10 Historic Environment (**Document 5.10**) and Table 5 identifies where each of these measures are secured.

Relevant Mitigation by Design

5.1.2 The location of known and potential archaeological remains has been considered in the routeing and design of the Proposed Development in order to limit the effects as a result of direct loss or disturbance.

5.2 HISTORIC ENVIRONMENT CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

5.2.1 Table 5 identifies where each of these measures are secured.

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Surviving historic field boundaries, including 'important hedgerows' and cloddiau boundaries	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and watching Brief in areas of lesser archaeological interest. 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	
		The results of field investigations will be presented in a report for submission to the local historic environment record and also with provision for publication and dissemination. The physical and documentary archive will be deposited	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		with the relevant repository and Archaeological Data Services.	Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	
		 A Boundary Features Protection Strategy will be produced; this will include: identification of all Cloddiau and crawiau within the Order Limits to be removed and retained; a schedule of all boundaries to be removed; a photographic record of all boundaries to be removed so that they can be reinstated accordingly; a schedule of all boundaries to be retained including specification for temporary physical protection; reinstatement measures for all boundaries which will include the other than Technical Department for the World including specification for temporary physical protection; 	Measure TH21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Cloddiau ; anddetails of an auditable system of compliance.		
Enclosure at Dymchwa	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	
		The results of field investigations will be presented in a report for submission to the local historic environment	Measure AC61 of the CEMP (Document 7.4) which is	
Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
---	---	--	--	--
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		record and also with provision for publication and dissemination. The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services.	secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	
Former field boundaries and U- shaped feature at Pen-yr-orsedd	Direct loss or disturbance of asset	 Measures to ensure the physical protection of archaeological remains where this can be achieved will be: Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are outside of construction areas to be marked on plans for avoidance, or where there is a perceived risk of accidental disturbance to known archaeological deposits then 	Measure AC21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		these areas will be cordoned off with appropriate fencing that is passable to local wildlife where this is appropriate and signage used to highlight the area of archaeological interest. This fencing and signage will remain in place in that area for the duration of the construction programme; and		
		 should, for whatever reason, access be required into the cordoned off areas which would result in potential disturbance, consent will first be obtained from National Grid and appropriate archaeological monitoring and recording, in line with the Archaeological Strategy (Document 7.8), will be agreed before access is granted. 		
		 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 	(Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	
Former field boundaries at Gorslwyd	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6	

Table 5: Summary of	Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	of the DCO (Document 2.1)		
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)		

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
Possible enclosure/small hut circle at Pwlcoch	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1) Measure AC21 of the CEMP (Document 7.4) which is		
		be:	secured through Requirement 6 of the DCO		

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are outside of construction areas to be marked on plans for avoidance, or where there is a perceived risk of accidental 	(Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	

Encot		
	 Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are outside of construction areas to be marked on plans for avoidance, or where there is a perceived risk of accidental disturbance to known archaeological deposits then these areas will be cordoned off with appropriate fencing that is passable to local wildlife where this is appropriate and signage used to highlight the area of archaeological interest. This fencing and signage will remain in place in that area for the duration of the construction programme; and should, for whatever reason, access be required into the cordoned off areas which would result in potential disturbance, consent will first be obtained from National Grid and appropriate archaeological monitoring and recording, in line with the Archaeological Strategy (Document 7.8), will be agreed before access is granted. 	(Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	
Former field boundaries at Pwllcoch	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	of the DCO (Document 2.1)	
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	
Enclosure at Bryn Hyfryd	Direct loss or disturbance of	 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known 	Measure AC41 of the CEMP (Document 7.4) which is secured through	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	asset	 archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, 	Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		do not impact the proposed construction programme.		
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	
Enclosures at Bryn Goleu/Pant-y-mel	Direct loss or disturbance of asset	 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is	

Table 5: Summary of	Archaeology ar	nd Cultural Heritage Control and Management Measures	& Mitigation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 	secured by Requirement 6 of the DCO (Document 2.1)
		Post-excavation tasks will include:following a programme of post excavation	Measure AC61 of the CEMP (Document 7.4) which is secured through

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1)	
Holy Well, Clorach (HER3581)	Direct loss or disturbance of asset	 Measures to ensure the physical protection of archaeological remains where this can be achieved will be: Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are outside of construction areas to be marked on plans for avoidance, or where there is a perceived risk of accidental disturbance to known archaeological deposits then 	Measure AC21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1) Schedule of Environmental	

Table 5: Summary of	Archaeology a	nd Cultural Heritage Control and Management Measures	& Mitigation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 these areas will be cordoned off with appropriate fencing that is passable to local wildlife where this is appropriate and signage used to highlight the area of archaeological interest. This fencing and signage will remain in place in that area for the duration of the construction programme; and should, for whatever reason, access be required into the program bid base b	Commitments (Document 7.4.2.1) which is secured by Requirement 6 of the DCO (Document 2.1).
		the cordoned off areas which would result in potential disturbance, consent will first be obtained from National Grid and appropriate archaeological monitoring and recording, in line with the Archaeological Strategy (Document 7.8), will be agreed before access is granted.	
Former field boundaries east of Cae-Warring	Direct loss or disturbance of asset	 Measures to ensure the physical protection of archaeological remains where this can be achieved will be: Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are 	Measure AC21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy

ReceptorSource of EffectControl and Management Measures & MitigationWhere the Mitig Secured	
	gation is
 outside of construction areas to be marked on plans for avoidance, or where there is a perceived risk of accidental disturbance to known archaeological deposits then these areas will be cordoned off with appropriate fencing that is passable to local wildlife where this is appropriate and signage used to highlight the area of archaeological interest. This fencing and signage will remain in place in that area for the duration of the construction programme; and should, for whatever reason, access be required into the cordoned off areas which would result in potential disturbance, consent will first be obtained from National Grid and appropriate archaeological monitoring and recording, in line with the Archaeological Strategy (Document 7.8), will be 	B) which is quirement 6 ocument 2.1). (Document is secured by of the DCO I).
agreed before access is granted. The 'Strip, Map and Sample' will involve: Measure AC41 (Document 7.4)	of the CEMP i) which is

Table 5: Summary of	Archaeology ar	nd Cultural Heritage Control and Management Measures	& Mitigation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in 	secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).

Table 5: Summary of	Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme.		
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Former field boundaries/possible enclosure at Part-yr- ynys	Direct loss or disturbance of asset	 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains. 	Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).

do not impact the proposed construction programme.

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).
Relict Field System, Plas Llanfihangel (HER 61540)	Direct loss or disturbance of asset	 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6

Table 5: Summary of	Archaeology ar	nd Cultural Heritage Control and Management Measures	& Mitigation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 	of the DCO (Document 2.1).
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Table 5: Summary of	Archaeology ar	nd Cultural Heritage Control and Management Measures	& Mitigation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	(Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).
Former field system south of Maenaddwyn	Direct loss or disturbance of asset	 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 		
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		deposited with the relevant repository and Archaeological Data Services.	of the DCO (Document 2.1).	
Maen Addwyn Standing Stone (SM AN 069)	Direct loss or disturbance of asset	 Measures to ensure the physical protection of archaeological remains where this can be achieved will be: Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are outside of construction areas to be marked on plans for avoidance, or where there is a perceived risk of accidental disturbance to known archaeological deposits then these areas will be cordoned off with appropriate fencing that is passable to local wildlife where this is appropriate and signage used to highlight the area of archaeological interest. This fencing and signage will remain in place in that area for the duration of the construction programme; and 	Measure AC21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 should, for whatever reason, access be required into the cordoned off areas which would result in potential disturbance, consent will first be obtained from National Grid and appropriate archaeological monitoring and recording, in line with the Archaeological Strategy (Document 7.8), will be agreed before access is granted. 		
Former field boundaries at Ty Mawr	Direct loss or disturbance of asset	 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 	
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	secured by Requirement 6 of the DCO (Document 2.1).	
Former field boundaries at Capel Coch	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
		Post-excavation tasks will include:following a programme of post excavation	Measure AC61 of the CEMP (Document 7.4) which is secured through	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Requirement 6 of the DCO (Document 2.1).	
Former Field boundaries near Vaynol Covert	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of	Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Watching Brief in areas of lesser archaeological interest. 		
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Enclosure at Cors Erddreiniog	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	(Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Former field	Direct loss or	In order to appropriately preserve, either in situ or by	Measure AC11 of the CEMP	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
boundaries/field system at Bodwena	disturbance of asset	 formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
			 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	(Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Enclosure at Cefn- carrog	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
		Post-excavation tasks will include:	Measure AC61 of the CEMP	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Former field boundaries at Pen-y- Garreg	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of	Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 interest, and Watching Brief in areas of lesser archaeological interest. 			
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).		
Former field	Direct loss or	In order to appropriately preserve, either in situ or by	Measure AC11 of the CEMP		

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
boundaries at Bryntirion	disturbance of asset	 formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
		 Measures to ensure the physical protection of archaeological remains where this can be achieved will be: Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are 	Measure AC21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 outside of construction areas to be marked on plans for avoidance, or where there is a perceived risk of accidental disturbance to known archaeological deposits then these areas will be cordoned off with appropriate fencing that is passable to local wildlife where this is appropriate and signage used to highlight the area of archaeological interest. This fencing and signage will remain in place in that area for the duration of the construction programme; and should, for whatever reason, access be required into the cordoned off areas which would result in potential disturbance, consent will first be obtained from National Grid and appropriate archaeological monitoring and recording, in line with the Archaeological Strategy (Document 7.8), will be agreed before access is granted 	(Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Post-excavation tasks will include:following a programme of post excavation	Measure AC61 of the CEMP (Document 7.4) which is	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Enclosure and linear features at Hendre Hywell	Direct loss or disturbance of asset	 Measures to ensure the physical protection of archaeological remains where this can be achieved will be: Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are outside of construction areas to be marked on plans for avoidance, or where there is a perceived risk of accidental disturbance to known archaeological deposits then 	Measure AC21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1). Schedule of Environmental	
Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
---	---------------------	--	--	--
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		these areas will be cordoned off with appropriate fencing that is passable to local wildlife where this is appropriate and signage used to highlight the area of archaeological interest. This fencing and signage will remain in place in that area for the duration of the construction programme; and	Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 should, for whatever reason, access be required into the cordoned off areas which would result in potential disturbance, consent will first be obtained from National Grid and appropriate archaeological monitoring and recording, in line with the Archaeological Strategy (Document 7.8), will be agreed before access is granted. 		
		 Measures to ensure the physical protection of archaeological remains where this can be achieved will be: Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 outside of construction areas to be marked on plans for avoidance, or where there is a perceived risk of accidental disturbance to known archaeological deposits then these areas will be cordoned off with appropriate fencing that is passable to local wildlife where this is appropriate and signage used to highlight the area of archaeological interest. This fencing and signage will remain in place in that area for the duration of the construction programme; and should, for whatever reason, access be required into the cordoned off areas which would result in potential disturbance, consent will first be obtained from National Grid and appropriate archaeological monitoring and recording, in line with the Archaeological Strategy (Document 7.8), will be agreed before access is granted. 	(Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Post-excavation tasks will include:following a programme of post excavation	Measure AC61 of the CEMP (Document 7.4) which is	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Field system and enclosures at Ty'n-y- felin	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of	Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 Watching Brief in areas of lesser archaeological interest. 			
		 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).		

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 		
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Enclosures at Ceint	Direct loss or disturbance of	The 'Strip, Map and Sample' will involve:targeted 'Strip, Map and Sample' in advance of	Measure AC41 of the CEMP (Document 7.4) which is	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	asset	 construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains. 	secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		do not impact the proposed construction programme.	
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).
Feature south of Ceint	Direct loss or disturbance of asset	 In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
	Source of	Control and Management Measures & Mitigation	Whore the Mitigation is	

Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	secured by Requirement 6 of the DCO (Document 2.1).
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).
Former field boundaries/enclosure	Direct loss or disturbance of	In order to appropriately preserve, either in situ or by formal record, any remains of archaeological interest	Measure AC11 of the CEMP (Document 7.4) which is

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
at Fron Deg	asset	 within the Order Limits the following control measures will be adopted: physical protection where possible in order to avoid disturbance; and provision for archaeological recording through: a targeted programme of 'Strip, Map and Sample' recording of identified areas of archaeological interest, and Watching Brief in areas of lesser archaeological interest. 	secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	secured by Requirement 6 of the DCO (Document 2.1).	
Site of Building, Rhos Bothan, Llanddaniel Fab (HER 61563)	Direct loss or disturbance of asset	 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 		
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Possible pits at	Direct loss or	The 'Strip, Map and Sample' will involve:	Measure AC11 of the CEMP	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Rhosbothan	disturbance of asset	 targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays 	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme.	
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and The physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).
Braint	Direct loss or disturbance of asset	 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 	(Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
		Post-excavation tasks will include:	Measure AC61 of the CEMP (Document 7.4) which is	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Circular Cropmark, NW of Garth Farm (HER 58)	Direct loss or disturbance of asset	 Measures to ensure the physical protection of archaeological remains where this can be achieved will be: Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are outside of construction areas to be marked on plans for avoidance, or where there is a perceived risk of accidental 	Measure AC21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 disturbance to known archaeological deposits then these areas will be cordoned off with appropriate fencing that is passable to local wildlife where this is appropriate and signage used to highlight the area of archaeological interest. This fencing and signage will remain in place in that area for the duration of the construction programme; and should, for whatever reason, access be required into the cordoned off areas which would result in potential disturbance, consent will first be obtained from National Grid and appropriate archaeological monitoring and recording, in line with the Archaeological Strategy (Document 7.8), will be agreed before access is granted. 	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
Field boundaries and enclosure at Fodol	Direct loss or disturbance of asset	 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed 	Measure AC11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 	Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Part of Roman Road between Segontium and Aber (HER 17834)	Direct loss or disturbance of asset	 Measures to ensure the physical protection of archaeological remains where this can be achieved will be: Identified areas of archaeological interest which are identified in the Schedule of Environmental Commitments (Document 7.4.2.1) sensitivity that are outside of construction areas to be marked on plans for avoidance, or 	Measure AC21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 where there is a perceived risk of accidental disturbance to known archaeological deposits then these areas will be cordoned off with appropriate fencing that is passable to local wildlife where this is appropriate and signage used to highlight the area of archaeological interest. This fencing and signage will remain in place in that area for the duration of the construction programme; and should, for whatever reason, access be required into the cordoned off areas which would result in potential disturbance, consent will first be obtained from National Grid and appropriate archaeological monitoring and recording, in line with the Archaeological Strategy (Document 7.8), will be agreed before access is granted. 	of the DCO (Document 2.1). Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
		The 'Strip, Map and Sample' will involve:	Measure AC41 of the CEMP	
		 targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be 	(Document 7.4) which is secured through Requirement 6 of the DCO	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 	(Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
All receptors subject to strip, map and sample/ excavation	Creation of record of archaeological remains with dissemination of the results. The creation of an	Where construction will involve the disturbance to areas of known or potential archaeological interest then provision will be made for archaeological recording before or during construction. The detailed scope of and approach to this work is set out in the Archaeological Strategy (AS) (Document 7.8), which sets out in detail the methodology to be adopted for the Strip, Map and Sample and the Watching Brief.	Measure AC31 of the CEMP ((Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	archaeological record does		of the DCO (Document 2.1).	
	not fully mitigate the loss of the archaeological remains. However, it is appropriate compensation for the loss of such remains where such loss is unavoidable and justified.	 The 'Strip, Map and Sample' will involve: targeted 'Strip, Map and Sample' in advance of construction within identified areas of known archaeological significance or high potential to be undertaken by suitably qualified and appointed archaeological contractor, ensuring compliance with other receptors such as protected species mitigation, as set out in the BMS (Document 7.7); within the strip map sample areas topsoil will be stripped by mechanical excavator using a toothless ditching bucket under strict archaeological supervision to the natural strata, or where archaeological deposits are exposed, except where it can be demonstrated that there is a sufficient depth of material to preserve any underlying archaeology; exposed surfaces will be cleaned and excavation of features continued by hand following a sampling 	Measure AC41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 strategy detailed in the Archaeological Strategy; and a detailed timetable of works will be provided to ensure adequate time and resources are applied in order that the archaeological works, including delays caused by weather, or unexpectedly complex remains, do not impact the proposed construction programme. 		
		 Post-excavation tasks will include: following a programme of post excavation assessment, all the archaeological fieldwork shall be written up in a formal report for submission in to the local historic environment record and provision will be made for publication and dissemination in an appropriate journal or standalone monograph; and the physical and documentary archive will be deposited with the relevant repository and Archaeological Data Services. 	Measure AC61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Archaeological Strategy (Document 7.8) which is secured by Requirement 6 of the DCO (Document 2.1).	
Historic Cloddiau	Direct loss or disturbance of	Areas of potential Cloddiau identified and commitment to, reduce temporary loss as far as practicable and ensure	Schedule of Environmental Commitments (Document	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
boundaries	asset	reinstatement is undertaken in accordance with the Technical Specification for Welsh Cloddiau included in Section 1.5 of the Schedule of Environmental Commitments (Document 7.4.2.1)	7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
Known archaeological depostis	Direct loss or disturbance of asset	Areas of potential Cloddiau identified and commitment to, reduce temporary loss as far as practicable and ensure reinstatement is undertaken in accordance with the Technical Specification for Welsh Cloddiau included in Section 1.5 of the Schedule of Environmental Commitments (Document 7.4.2.1)	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
Sub surface remains of known heritage assets	Direct loss or disturbance of asset	Details of the assets to be protected by cordoned off with appropriate fencing and signage used to highlight the area of archaeological interest is provided in the Schedule of Environmental Commitments (Document 7.4.2.1).	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
Sub surface remains of previously	Direct loss or disturbance of	Areas to be avoided/ excavations avoided or limited/ ground disturbance to be limited are included in Section	Schedule of Environmental Commitments (Document	

Table 5: Summary of Archaeology and Cultural Heritage Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
unrecorded heritage assets	asset	1.4 of the Schedule of Environmental Commitments (Document 7.4.2.1)	7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	

6 Geology, Hydrogeology and Ground Conditions

6.1 INTRODUCTION

6.1.1 Control and management measures and mitigation measures required to mitigate the potential soils, geology and hydrogeology effects from the construction, operation, maintenance and decommissioning of the Proposed Development are set out in section 9 of Chapter 11 Geology, Hydrogeology and Ground Conditions (Document 5.11) and Table 6 identifies where each of these measures are secured.

Relevant Mitigation by Design

6.1.2 There are no mitigation by design measures specific to this chapter.

6.2 GEOLOGY, HYROGEOLOGY AND GROUND CONDIATIONS CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

6.2.1 Table 6 identifies where each of these measures are secured.

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Soils	Pollution of soils due to chemical spillages and leaks.	The contractors will undertake inspections on equipment and facilities to reduce to risk of incidents occurring. Inspections will generally be undertaken on a weekly basis unless specified in other plans or licences.	Measure GP51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Reduction of soil quality during handling and storage.	Contractors will develop and implement a Pollution Incident Control Plan (PICP) which will detail their control measures and response in the event of any incident onsite.	Measure GP61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Reduction of soil quality due to construction traffic.	An Outline Waste Management Plan (Document 7.11) has been produced. The OWMP sets the framework for the management of wastes generated during the construction of the Proposed Development. It documents the decisions taken	Measure GP814 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Disturbance of potentially contaminated soils, sediments	during the planning and design stages to minimise construction waste and sets objectives and targets for the main waste types. The contractors will prepare and submit a Site Waste Management Plan (SWMP) which will be in accordance with		

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	and waters	the OWMP.		
	soils Importation of contaminated aggregates posing a risk to underlying soils Dewatering leading to changes in soil hydrology	 Where required, an appropriate intrusive ground investigation will be undertaken in accordance with all relevant guidance and legislation including BS 10175:2011, Environment Agency/Defra CLR series of reports. The ground investigation will be undertaken to achieve the following objectives: determine the ground conditions to allow design of foundations and structures; determine the presence, if any, of shallow mine workings; a Coal Mining Risk Assessment Report will be completed once the ground investigation has taken place; determine the groundwater regime and assess the need for dewatering; assess the nature, extent and magnitude of any soil and groundwater contamination present; 	Measure CL11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 assess the risks (if any) from potential contaminants to human health and Controlled Waters; and, assess the ground gas regime. 		
		Where required a watching brief will be maintained during construction works to confirm the absence of potential sources of contamination such as Made Ground, visual or olfactory evidence of hydrocarbons. These areas of potentially contaminated ground and/ or water will be sampled and undergo appropriate sampling and laboratory analysis	Measure CL21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Any material imported to site, such as stone for access tracks/foundations, will be natural quarried stone or, if recycled, the material will undergo chemical testing. The suite of contaminants and site use criteria will be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does not pose a risk to construction workers or the environment.	Measure CL26 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 The DuMP will contain the following measures in relation to storage and handling of materials: handling and transfer of soil and dusty materials will be controlled to reduce dust generation. During material handling operations the number of handling operations will be kept to a minimum to ensure that dusty material is not moved or handled unnecessarily; sand and other aggregates will be covered, bulk cement and other fine powder materials will be delivered in enclosed tankers and stored with suitable emission control systems to prevent escape of material; for smaller supplies of fine powder materials bags will be sealed after use and stored appropriately to prevent dust; minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; 	Measure AE15 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		when loading vehicles in the vicinity of receptors and under		

Table 6: Sum Measures	Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 dry windy conditions conducive to dust dispersal, material handling methods will be used that minimise the generation of airborne dust. Drop heights will be kept to a minimum. Where there are visible dust issues and under prolonged dry conditions sources will be dampened down; soils will be managed in line with measure SM12; and avoid scabbling (roughening of concrete surfaces), if possible. 			
		A Pollution Incident Control Plan will be prepared and implemented. It will include, or cross-refer to, Environmental Emergency and Contingency Procedures. The PICP will be in place prior to the commencement of works, setting out procedures for pollution control and emergency response measures in the event of accidental spillage or leakage.	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Fuels and oils at the construction compounds, on site and at	Measure WE23 of the CEMP		

Table 6: Sum Measures	Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		work areas will be managed in accordance with the Water Resources (Control of Pollution) (Oil Storage) (Wales) Regulations 2016.	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Fuel will be stored within secure bunded fuel tanks with an impermeable bund capacity of 110% of the tank volume.		
		Chemicals will be stored in accordance with the Control of Substances Hazardous to Health Regulations i.e. in a secure COSHH Store including an impermeable storage area with secondary containment for spill management.		
		Suitable quantities of pollution control equipment such as sorbent pads, sorbent granules, booms or similar material to be readily available at the temporary construction compounds, on site and at work areas at all times and to be regularly checked		
		Spillage kits will be positioned across the site and at vulnerable locations as required and staff will be trained in their use. The		

Table 6: Sum Measures	mary of Geology	, Hydrogeology and Ground Conditions Control and Manag	gement Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		kits will be checked regularly and replaced after an event.	
		'Emergency Grab Packs' or spill kits to be carried in site vehicles and mobile plant and larger kits with fuel bowsers and emergency vehicles.	
		Emergency communications (mobile phones or radios) to be carried with relevant personnel.	
		All plant and equipment to be inspected before use on site and maintenance and servicing record will be kept and checked.	
		All static plant, such as pumps and generators, to have integral drip trays (be self bunded) where possible or, as a second preference, external drip trays, which are to be checked daily.	
		Mobile plant are to be maintained in good working order. Larger items of plant, such as excavators to undergo daily recorded inspections by a competent person (usually the	

Table 6: Sum Measures	mary of Geology	r, Hydrogeology and Ground Conditions Control and Manag	gement Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		operator) for any defects such as leaking hoses. Where defects are evident the item of plant shall be removed from site immediately and serviced or replaced as soon as possible.	
		No refuelling of mobile plant shall be undertaken within 10 m of a watercourse or waterbody, 50 m of a known abstraction borehole or within Flood Zone C2 without the prior agreement of NRW.	
		Where vehicle wash facilities are provided, no chemicals or grit will be used and silt traps/oil interceptors will be installed in accordance with PPG6 Working at Construction and Demolition Sites and GPP13 Vehicle Washing and Cleaning.	
		Appropriate method statements will be in place prior to undertaking maintenance of vehicles at designated areas in the temporary construction compounds.	
		For operations using concrete, grout and other cement-based	

Table 6: Sum Measures	Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		products, mixing of concrete and designated contained concrete washout areas will be provided in accordance with good practice guidance at least 10 m from any watercourse or waterbody or surface water drain to minimise the risk from pollution and located within Flood Zone A.		
		Use of corrosion resistant concrete formulas for pylon foundations will aid management of effects associated with changes to water quality through contamination. All concrete pours would be contained within shuttering or dry excavations (with geotextile) and pre-cast concrete will be used where possible;		
		Machinery which remains on site overnight will be kept more than 10 m from drains/watercourses or waterbodies, and outside Flood Zone C2, to reduce any risk of contamination;		
		Construction waste/debris will be prevented from entering any waterbody or sensitive habitats through observing the appropriate stand-off distances between works and		

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		watercourses		
		Works in or immediately adjacent to watercourses will be minimised as far as possible, and where not possible, periods of dry weather will be preferred for working. The scope and timing of all in channel works will be agreed with NRW and or LLFA.		
		Work areas will be constructed from semi-permeable aggregate to allow infiltration. Utilisation of Sustainable Drainage Systems (SuDS) principles for any areas requiring new systems;	Measure WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Any land temporarily used for the construction of the Proposed Development will be fully reinstated, in agreement with the relevant landowner.	Measure R1 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Reinstatement will include making good damage or	Measure R3 of the CEMP	
Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
---	------------------	--	---	--
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1).	
		Prior to construction, more site/soil specific measures to protect soils will be set out in a detailed Soil Management Plan (SMP), based upon the outline Soil Management Plan (Document 7.10) and supplemented, by additional survey data, where required.	Measure SM11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement 6 of the DCO (Document 2.1).	
		An OSMP (Document 7.10) has been produced and includes mitigation measures in accordance with Defra guidance.	Measure SM12 of the CEMP (Document 7.4) which is secured through Requirement	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement 6 of the DCO (Document 2.1).
Geology	gy Ground pollution due to chemical spillages and leaks. Disturbance of potentially contaminated	The contractors will undertake inspections on equipment and facilities to reduce to risk of incidents occurring. Inspections will generally be undertaken on a weekly basis unless specified in other plans or licences.	Measure GP51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Contractors will develop and implement a Pollution Incident Control Plan (PICP) which will detail their control measures and response in the event of any incident onsite.	Measure GP61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	soils, sediments and waters posing a risk to	An Outline Waste Management Plan (Document 7.11) has been produced. The OWMP sets the framework for the management of wastes generated during the construction of	Measure GP814 of the CEMP (Document 7.4) which is secured through Requirement

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	geology. Importation of contaminated aggregates posing a potential risk to	the Proposed Development. It documents the decisions taken during the planning and design stages to minimise construction waste and sets objectives and targets for the main waste types. The contractors will prepare and submit a Site Waste Management Plan (SWMP) which will be in accordance with the OWMP.	6 of the DCO (Document 2.1).	
	underlying geology. Foundations of pylons and other structures creating a preferential pathway for contaminants to migrate.	 Where required, an appropriate intrusive ground investigation will be undertaken in accordance with all relevant guidance and legislation including BS 10175:2011, Environment Agency/Defra CLR series of reports. The ground investigation will be undertaken to achieve the following objectives: determine the ground conditions to allow design of foundations and structures; determine the presence, if any, of shallow mine workings; a Coal Mining Risk Assessment Report will be completed once the ground investigation has taken place; determine the groundwater regime and assess the need for 	Measure CL11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Page	284
i ugo	201

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Requirement to remove spoil from tunnelling operations posing a potential risk to geology.	 dewatering; assess the nature, extent and magnitude of any soil and groundwater contamination present; assess the risks (if any) from potential contaminants to human health and Controlled Waters; and, assess the ground gas regime. 	
	Requirement to remove spoil from construction of pylon	Where required a watching brief will be maintained during construction works to confirm the absence of potential sources of contamination such as Made Ground, visual or olfactory evidence of hydrocarbons. These areas of potentially contaminated ground and/ or water will be sampled and undergo appropriate sampling and laboratory analysis.	Measure CL21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	foundations.	Where required a watching brief will be maintained during construction works to confirm the absence of potential sources of contamination such as Made Ground, visual or olfactory evidence of hydrocarbons. These areas of potentially contaminated ground and/ or water will be sampled and undergo appropriate sampling and laboratory analysis.	Measure CL22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		A risk assessment will be conducted to assess whether private water supplies could be affected by construction activities. Selected private water supplies will then be monitored before, during and after construction.	Measure CL23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Any material imported to site, such as stone for access tracks/foundations, will be natural quarried stone or, if recycled, the material will undergo chemical testing. The suite of contaminants and site use criteria will be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does not pose a risk to	Measure CL26 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		construction workers or the environment.		
		The DuMP will contain the following measures in relation to storage and handling of materials:		
		 handling and transfer of soil and dusty materials will be controlled to reduce dust generation. During material handling operations the number of handling operations will be kept to a minimum to ensure that dusty material is not moved or handled unnecessarily; 	Measure AE15 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 sand and other aggregates will be covered, bulk cement and other fine powder materials will be delivered in enclosed tankers and stored with suitable emission control systems to prevent escape of material; 		
		 for smaller supplies of fine powder materials bags will be sealed after use and stored appropriately to prevent dust; 		
		• minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate;		

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 when loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, material handling methods will be used that minimise the generation of airborne dust. Drop heights will be kept to a minimum. Where there are visible dust issues and under prolonged dry conditions sources will be dampened down; soils will be managed in line with measure SM12; and avoid scabbling (roughening of concrete surfaces), if 	
		possible.	
		Pollution prevention measures will be adopted in general accordance with the existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A Pollution Incident Control Plan will be prepared and implemented. It will include, or cross-refer to, Environmental Emergency and Contingency Procedures. The PICP will be in place prior to the commencement of works, setting out	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		procedures for pollution control and emergency response measures in the event of accidental spillage or leakage.	6 of the DCO (Document 2.1).	
		Fuels and oils at the construction compounds, on site and at work areas will be managed in accordance with the Water Resources (Control of Pollution) (Oil Storage) (Wales) Regulations 2016.		
		Fuel will be stored within secure bunded fuel tanks with an impermeable bund capacity of 110% of the tank volume.	Measure WE23 of the CEMP (Document 7.4) which is	
		Chemicals will be stored in accordance with the Control of Substances Hazardous to Health Regulations i.e. in a secure COSHH Store including an impermeable storage area with secondary containment for spill management.	6 of the DCO (Document 2.1).	
		Fuel and chemical storage to be located a minimum of 10 m away from any watercourse and 50 m from an abstraction		

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		borehole.		
		Spillage kits containing suitable quantities of pollution control equipment such as sorbent pads, sorbent granules, booms or similar material to be readily available at the temporary construction compounds, on site and at work areas at all times and to be regularly checked and replaced after an event. Staff will be trained in their use.		
		'Emergency Grab Packs' or spill kits to be carried in site vehicles and mobile plant and larger kits with fuel bowsers and emergency vehicles.		
		Emergency communications (mobile phones or radios) to be carried by relevant personnel.		
		All plant and equipment to be inspected before use on site and		

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		maintenance and servicing record will be kept and checked.		
		All static plant, such as pumps and generators, to have integral drip trays (be self bunded) where possible or, as a second preference, external drip trays, which are to be checked daily.		
		Mobile plant to be maintained in good working order. Larger items of plant, such as excavators to undergo daily recorded inspections by a competent person (usually the operator) for any defects such as leaking hoses. Where defects are evident the item of plant shall be removed from site immediately and serviced or replaced as soon as possible.		
		No refuelling of mobile plant shall be undertaken within 8 m of a watercourse or 50 m of an abstraction borehole without the prior agreement of NRW.		

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Where vehicle wash facilities are provided, no chemicals or grit will be used and silt traps/oil interceptors will be installed in general accordance with Environment Agency Pollution Prevention Guidance PPG6 and PPG13.		
		Appropriate method statements will be in place prior to undertaking maintenance of vehicles, and maintenance will only be allowed at designated areas in the temporary construction compounds.		
		For operations using concrete, grout and other cement-based products, mixing of concrete and designated contained concrete washout areas are to be located at least 8 m from any watercourse or surface water drain to minimise the risk from pollution. Where necessary to minimise pollution risks, ready mixed concrete will be used to avoid batching on site.		
		Work areas will be constructed from semi-permeable	Measure WE53 of the CEMP	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		aggregate to allow infiltration.	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Any land temporarily used for the construction of the Proposed Development will be fully reinstated, in agreement with the relevant landowner.	Measure R1 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Reinstatement will include making good damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	Measure R3 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		An OSMP (Document 7.4.2.2) has been produced and includes mitigation measures in accordance with Defra guidance.	Measure SM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			OSMP (Document 7.10) which is secured by Requirement 6 of the DCO (Document 2.1).
Groundwater G p c s le f g le c tr f g c s	Groundwater pollution due to chemical spillages and leaks. Reduction of groundwater levels due to construction	The contractors will undertake inspections on equipment and facilities to reduce to risk of incidents occurring. Inspections will generally be undertaken on a weekly basis unless specified in other plans or licences.	Measure GP51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Contractors will develop and implement a PICP which will detail their control measures and response in the event of any incident onsite.	Measure GP61 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	Disturbance of potentially contaminated soils, sediments	An Outline Waste Management Plan (Document 7.11) has been produced. The OWMP sets the framework for the management of wastes generated during the construction of the Proposed Development. It documents the decisions taken during the planning and design stages to minimise construction	Measure GP814 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Page	294
i aye	234

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	and waters posing a risk to groundwater.	waste and sets objectives and targets for the main waste types. The contractors will prepare and submit a SWMP which will be in accordance with the OWMP.		
	Importation of contaminated aggregates posing a potential risk to underlying groundwater quality. Disturbance of former underground coal mine workings posing a potential risk	 Where required, an appropriate intrusive ground investigation will be undertaken in accordance with all relevant guidance and legislation including BS 10175:2011, Environment Agency/Defra CLR series of reports. The ground investigation will be undertaken to achieve the following objectives: determine the ground conditions to allow design of foundations and structures; determine the presence, if any, of shallow mine workings; a Coal Mining Risk Assessment Report will be completed once the ground investigation has taken place; determine the nature, extent and magnitude of any soil and groundwater contamination present; 	Measure CL11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	to groundwater. Requirement for dewatering,	 assess the risks (if any) from potential contaminants to human health and Controlled Waters; and, assess the ground gas regime. 		
	reducing flow to groundwater abstractions and surface water bodies. Requirement for dewatering, reducing quality or levels of groundwater supporting sites protected under European and UK habitat legislation, such	Subsequently a risk assessment will be undertaken in accordance with the EA report 'Model Procedures for the Management of Land Contamination (CLR 11) to identify if these areas of potential contaminants pose a risk to construction workers or site operators and Controlled Waters. If areas of the site are shown to pose a risk, any remedial measures required will be implemented. A remediation strategy will be devised and agreed with the regulatory authorities prior to any remedial works. The determination of the risks through ground investigation and risk assessment, and the potential remediation of areas of the site may result in the reduction of the significance, or even removal, of some of the potential effects identified. Should any contaminated material that is considered to pose a risk be identified it will be treated and/ or disposed of appropriately.	Measure CL22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	as a RAMSAR Site or a SSSI Requirement to remove spoil	A risk assessment will be conducted to assess whether private water supplies could be affected by construction activities. Selected private water supplies will then be monitored before, during and after construction.	Measure CL23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
from tunnelling operations posing a potential risk to ground water. Requirement to remove spoil from	Any material imported to site, such as stone for access tracks/foundations, will be natural quarried stone or, if recycled, the material will undergo chemical testing. The suite of contaminants and site use criteria will be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does not pose a risk to construction workers or the environment	Measure CL26 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	construction of new pylons and OHL. Foundations of	A Dust Management Plan (DuMP) will be prepared and will include measures to control dust during the construction of the Proposed Development.	Measure AE13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	pylons and other structures creating a preferential pathway for contaminants to migrate.Importation of backfill material for tunnel shafts posing a potential risk to groundwater quality.	 The DuMP will contain the following measures in relation to site layout: plan site layout so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicably possible. Where practical remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site; and hard surfacing will be provided at all bellmouths. 	Measure AE14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 The DuMP will contain the following measures in relation to storage and handling of materials: handling and transfer of soil and dusty materials will be controlled to reduce dust generation. During material handling operations the number of handling operations will be kept to a minimum to ensure that dusty material is not moved or handled unnecessarily; sand and other aggregates will be covered, bulk cement 	Measure AE15 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		and other fine powder materials will be delivered in enclosed tankers and stored with suitable emission control systems to prevent escape of material;	
		 for smaller supplies of fine powder materials bags will be sealed after use and stored appropriately to prevent dust; 	
		 minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; 	
		 when loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, material handling methods will be used that minimise the generation of airborne dust. Drop heights will be kept to a minimum. Where there are visible dust issues and under prolonged dry conditions sources will be dampened down; 	
		 soils will be managed in line with measure SM12; and avoid scabbling (roughening of concrete surfaces), if possible. 	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Pollution prevention measures will be adopted in general accordance with the existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A Pollution Incident Control Plan will be prepared and implemented. It will include, or cross-refer to, Environmental Emergency and Contingency Procedures. The PICP will be in place prior to the commencement of works, setting out procedures for pollution control and emergency response measures in the event of accidental spillage or leakage.	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Stockpiles at construction compounds and construction areas	Measure WE31 of the CEMP

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		will be located at least 8 m away from watercourses and water bodies.	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Silt Management</i> : Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Any land temporarily used for the construction of the Proposed Development will be fully reinstated, in agreement with the relevant landowner.	Measure R1 of the CEMP (Document 7.4) which is secured through Requirement	

Table 6: Sum Measures	Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			6 of the DCO (Document 2.1).	
		An OSMP (Document 7.10) has been produced and includes mitigation measures in accordance with Defra guidance.	Measure SM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement 6 of the DCO (Document 2.1).	
Human Health	Pollution due to chemical spillages and leaks posing risk to construction workers.	 Where required, an appropriate intrusive ground investigation will be undertaken in accordance with all relevant guidance and legislation including BS 10175:2011, Environment Agency/Defra CLR series of reports. The ground investigation will be undertaken to achieve the following objectives: determine the ground conditions to allow design of foundations and structures; determine the presence, if any, of shallow mine workings; 	Measure CL11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Disturbance of potentially contaminated soils, sediments and waters posing a risk to construction workers. Importation of contaminated	 a Coal Mining Risk Assessment Report will be completed once the ground investigation has taken place; determine the groundwater regime and assess the need for dewatering; assess the nature, extent and magnitude of any soil and groundwater contamination present; assess the risks (if any) from potential contaminants to human health and Controlled Waters; and assess the ground gas regime. 	
	aggregates posing a potential risk to human health. Disturbance of	Contractors will prepare and implement a Construction Phase SHE Plan for each element of the Proposed Development.	Measure GP42 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	former	Staff, site visitors and delivery drivers will receive a project	Measure GP44 of the CEMP

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
	underground coal mine workings posing a potential risk to construction workers. Importation of contaminated aggregates posing a potential risk to human health Disturbance of former underground coal mine workings posing	induction from the contractors to ensure they are aware of site specific hazards and health, safety and environmental management requirements. Site staff will be briefed daily by the Contractor prior to work commencing. Site-specific risk assessments will be carried out to ensure the risk strategy of the frequently changing workplace remains relevant. The contractors will be required to carry out audits and inspections in line with section 2.8 of this CEMP.	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Site accesses, accesses to construction compounds and roads in the vicinity of site access points will be maintained and kept clean as required.	Measure GP82 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		On-site welfare facilities will be provided for all site workers	Measure GP811 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	a potential risk to construction workers Requirement to remove spoil from tunnelling operations posing a potential risk to human health. Requirement to remove spoil from	A DuMP will be prepared and will include measures to control dust during the construction of the Proposed Development.	Measure AE13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 The DuMP will contain the following measures in relation to site layout: plan site layout so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicably possible. Where practical remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site; and hard surfacing will be provided at all bellmouths. 	Measure AE14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
pylon foundati	pylon foundations.	 The DuMP will contain the following measures in relation to site layout: handling and transfer of soil and dusty materials will be controlled to reduce dust generation. During material 	Measure AE15 of the CEMP (Document 7.4) which is secured through Requirement	

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & MitigationMeasures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
	backfill material for tunnel shafts posing a	handling operations the number of handling operations will be kept to a minimum to ensure that dusty material is not moved or handled unnecessarily;	6 of the DCO (Document 2.1).		
	potential risk to human health.	 sand and other aggregates will be covered, bulk cement and other fine powder materials will be delivered in enclosed tankers and stored with suitable emission control systems to prevent escape of material; 			
		 for smaller supplies of fine powder materials bags will be sealed after use and stored appropriately to prevent dust; 			
		• minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate;			
		 when loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, material handling methods will be used that minimise the generation of airborne dust. Drop heights will be kept to a minimum. Where there are visible dust issues and under prolonged dry conditions sources will be dampened down; 			

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 soils will be managed in line with measure SM12; and 		
		 avoid scabbling (roughening of concrete surfaces), if possible. 		
		•		
		Where required a watching brief will be maintained during construction works to confirm the absence of potential sources of contamination such as Made Ground, visual or olfactory evidence of hydrocarbons. These areas of potentially contaminated ground and/ or water will be sampled and undergo appropriate sampling and laboratory analysis	Measure CL21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		A risk assessment will be conducted to assess whether private water supplies could be affected by construction activities. Selected private water supplies will then be monitored before, during and after construction.	Measure CL23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Piled foundations will be designed in accordance with the EA guidance document 'Piling and Penetrative Ground	Measure CL24 of the CEMP (Document 7.4) which is	

Table 6: Sum Measures	mary of Geology	r, Hydrogeology and Ground Conditions Control and Manag	gement Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention'	secured through Requirement 6 of the DCO (Document 2.1).
		All concrete pours would be contained within shuttering or dry excavations and pre-cast concrete would be used where possible	Measure CL26 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		An OSMP (Document 7.10) has been produced and includes mitigation measures in accordance with Defra guidance.	Measure SM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement 6 of the DCO (Document 2.1).
		Section 1.14 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to avoid excavation	Schedule of Environmental Commitments (Document

Table 6: Summary of Geology, Hydrogeology and Ground Conditions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		on an area of Section B and undertake appropriate ground investigation in an area of shallow coal mine workings in Section D.	7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	

7 Water Quality Resources and Flood Risk

7.1 INTRODUCTION

7.1.1 Control and management measures and mitigation measures required to mitigate the potential on water quality, resources and flood risk receptors from the construction, operation, maintenance and decommissioning of the Proposed Development are set out in section 9 of Chapter 12 Water Quality, Resources and Flood Risk (Document 5.12) and Table 7 identifies where each of these measures are secured.

Relevant Mitigation by Design

7.1.2 The careful siting of infrastructure has been a key consideration as part of the design process which has helped minimise or prevent potential impacts. As part of design evolution, the project team has sought to identify constraints and a range of appropriate solutions. Prior to Stage 3 consultation a review of the draft design proposals identified potential constraints to the proposed location of infrastructure. During the evolution of the Proposed Development, water quality, resources and flood risk effects have been considered during the design and siting of infrastructure in order to avoid significant effects as described for each of the proposed infrastructure elements below.

Substation

7.1.3 Substation work at Wylfa and Pentir clearly needs to be located at the existing substation location. The extension to the existing Substation at Pentir, and works within the existing site boundary at Wylfa is constrained by these existing activities.

<u> Tunnel (THH) Sites</u>

7.1.4 The proposals have sought to locate the THH sites at Braint and Tŷ Fodol in areas with the lowest possible flood risk, outside of the Flood Zones B and C. Details of this approach are provided in the Menai Strait Crossing Report (**Document 9.6**).

Construction Compounds

7.1.5 The proposals have also sought to locate each of the Construction Compounds at the Braint and Tŷ Fodol CSECs, and at Pentir and Penmynydd Road, in areas with the lowest possible flood risk, outside of Flood Zones B and C. During the design evolution the Compound at Penmynydd Road has been relocated to the west in order to avoid Flood Zone C.

OHL/Access Tracks

7.1.6 The DCO design has sought to minimise the areas of temporary and permanent OHL infrastructure within areas of flood risk. When designing temporary access tracks, consideration has been given to using existing watercourse crossings wherever possible, and to minimising the number of new temporary watercourse crossings. Although there is a necessary and proportionate degree of flexibility associated with the OHL, wherever infrastructure is located within the Order Limits, control and management mitigation has been incorporated as set out in Table 7.

7.2 WATER QUALITY, RESOURCES AND FLOOD RISK CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

- 7.2.1 Table 7 identifies where each of these measures are secured.
- 7.2.2 Table 4 identifies mitigation measures for ecological receptors potentially impacted from effects relating to water quality, resources and flood risk, and where each of these measures are secured.

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to reduce the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Tre'r Gof SSSI	Changes in watercourse morphology Changes in patterns and	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	rates of infiltration Changes in river baseflow	Specific Pollution Incident Control Plan (PICP) would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	arising from dewatering Surface Water Flow Obstruction		(Document 2.1). PICP which is secured by Requirement 7 of the DCO (Document 2.1).	
		A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		OHL and Substations: Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional	Measure WE41 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Requirement 6 of the DCO (Document 2.1).	
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management. Good industry practices have been	Measure WE55 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		outlined to help minimise sediment laden runoff	secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Land Drainage</i> : Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable. Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress. Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be leated at topographic law points to procence axisting 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
-

Measures	of water Qua	ality, Resources and Flood Risk Control and Managem	ient measures & mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Change in water quality through mobilisation of sediment	 flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk. General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. 	Measure WE11 of the CEMP (Document 7.4) which is
Llyn Alaw SSSI and DrWPA	Change in water quality through accidental contamination	 Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	secured through Requirement 6 of the DCO (Document 2.1).
	Changes in patterns and rates of infiltration	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

.....

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Changes in		(Document 2.1).
	river baseflow arising from dewatering Surface Water Flow Obstruction Changes in watercourse morphology	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse 	Measure WE31 of the CEMP (Document 7.4) which is secured through

Table 7: Summary o Measures	f Water	Quality,	Resources	and	Flood	Risk	Control	and	Management	Measures	&	Mitigation

Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		(except watercourse crossings and drainage mitigation works)	Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Permit regardless of the duration of the discharge activity.	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Inspections: Programme for routine checking and clearing	Measure WE54 of the CEMP

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	hent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		of drainage systems to be developed and implemented prior to installation	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Page	322
i ugo	022

Table 7: Summary Measures	y of Water Qua	lity, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	(Document 2.1).
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. Temporary trackway (i.e. interlocking panels) would be 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation	
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		• Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide.		
		• Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		Design of Watercourse Crossings:	Measure FM14 of the CEMP	
		• All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change.	(Document 7.4) which is secured through Requirement 6 of the DCO	
		• Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the	(Document 2.1).	

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		minimum size requirement based on the design flow criteria.	
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.	
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 	
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 	
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.	
		• Robust operations and maintenance (O&M) plans would be prepared covering, as a minimum, details as to how	

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC.	
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes; and 	
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability	
		that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).	
Cors Erddreiniog (Anglesey Fens SAC/SSSI)	Change in water quality through mobilisation of	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. 	Measure WE11 of the CEMP (Document 7.4) which is secured through
	Seuiment		

Table 7: Summary Measures	of Water Qua	lity, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Change in water quality through accidental contamination	 Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	(Document 2.1).
	Changes in patterns and rates of infiltration Changes in river baseflow arising from dewatering Surface Water Flow Obstruction	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
			PICP is secured by Requirement 7 of the DCO (Document 2.1).

Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits:	Measure WE43 of the CEMP (Document 7.4) which is

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	secured through Requirement 6 of the DCO (Document 2.1).	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			(Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the	Measure WE56 of the CEMP	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		protection of features (including PWS) have been outlined	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Cors Erddreiniog Drainage Management: Specific considerations have been outlined for seven areas within Section C where the Order Limits extend into the SAC, and a site specific DMP for temporary outfalls would be agreed with NRW prior to the commencement of works in these areas	Measure WE57 and WE58 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW.	()	
		Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either		

Γable 7: Summ Measures	able 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation easures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		IACC or Gwynedd Council).		
		Structures in the Floodplain:	Measure FM13 of the CEMP (Document 7.4) which is	
		 As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. 	secured through Requirement 6 of the DCO (Document 2.1).	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide.		
		 Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. 		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		• The Environmental Commitments Register Volume 7 (Document 7.4.2.1) avoids locating any infrastructure (other than temporary drainage connecting to the perimeter drain) in the Cors Erddreinog SAC.	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured by Requirement 6 of the DCO	
		• Where it is necessary to convey flows into the perimeter drain, temporary outfalls may be required. These would comprise of a temporary drainage pipe and glass reinforced concrete headwall inserted into the bank, which would be removed on completion of construction.	(Document 2.1).	
		The Schedule of Environmental Commitments in Volume 7 (Document 7.4.2.1) avoids locating any infrastructure (other than temporary drainage connecting to the perimeter drain) in the Cors Erddreinog SAC.	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			the DCO (Document 2.1).	
		Where it is necessary to convey flows into the perimeter drain, temporary outfalls may be required. These would comprise of a temporary drainage pipe and glass reinforced concrete headwall inserted into the bank, which would be removed on completion of construction.	Measure WE57 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Cross drains would be provided under the access track and stockpiles at regular intervals and low features.	Measure WE57 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Site specific siltation mitigation methods would be implemented to prevent increased flows or silt laden runoff entering the perimeter drain that forms the western boundary of the Cors Erddreiniog SAC. The appropriate measures would be installed to facilitate settlement and removal of sediment particles and contaminants prior to discharge. Priority would be given to the diversion of	Measure WE57 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

8.4141

Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		preferential pathways away from the perimeter drain and dispersion of runoff across vegetated land.		
Caeau Talwrn SSSI & Corsydd Mon/ Anglesey Fens SACChange in 	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
	arising from dewatering	Specific PICP would be prepared and implemented, including pollution control and emergency response	Measure WE22 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Surface Water Flow Obstruction Changes in watercourse morphology	measures	Requirement 6 of the DCO (Document 2.1). PICP is secure by Requirement 7 of the DCO (Document 2.1).	
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		OHL and Substations: Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural	Measure WE41 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	secured through Requirement 6 of the DCO (Document 2.1).	
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		A Drainage Management Plan (DMP) would be prepared	Measure WE51 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		prior to commencement of works	secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management: Good industry practices have been	Measure WE55 of the CEMP	

- **T** -

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		outlined to help minimise sediment laden runoff	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Tunnel Construction</i> : Specific DMP would be prepared by the Contractor for activities. This would include options for managing partially saline dewatered arisings and the controlled risk of blowout from Tunnel Boring Machine (TBM) operations. The provision of a separate designated pond with a control valve would be used to store the potentially saline tunnel water in a controlled manner separate from surface runoff. Sodium chloride levels would be tested prior to discharge to assess if it is acceptable for discharge into adjacent watercourses. If the tested sodium	Measure WE59, WE510 and WE511 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		chloride levels are not acceptable, tanker facilities would be provided for the water to be transported off site.	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		to impede flood flow conveyance.	
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 	
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.	
		 Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress. 	
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 	
		 Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. 	
		 Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk. 	

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 	(
		 Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert. 	
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 	
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 	

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.	
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 	
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes/. 	
		 Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse 	

Page 343

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		crossing works are carried out).	
		• Site specific siltation mitigation measures would be incorporated into the access track drainage design to attenuate flow from the impervious area, encouraging filtration to facilitate the settlement and removal of any sediments and contaminants between the access track and the Caeau Talwrn SSSI/Corsydd Mon SAC. The details on the type of flow attenuation measures would be developed by the appointed contractor, in agreement with NRW.	Measure WE57 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
Cors Tregarnedd Mawr Wildlife Site and Malltraeth Marshes SSSI	Change in water quality through mobilisation of sediment Change in water quality through	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed existing greenfield runoff rates. Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	accidental contamination	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the	Measure WE21 of the CEMP (Document 7.4) which is

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Changes in patterns and rates of	new GPPs	secured through Requirement 6 of the DCO (Document 2.1).
	Changes in river baseflow arising from dewatering Surface Water Flow Obstruction	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP which is secured by Requirement 7 of the DCO (Document 2.1).
	Changes in watercourse morphology Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Works within 8 m of watercourse bank tops would be	Measure WE31 of the CEMP

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Inspections: Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Permits and ConsentsNo works would be undertaken within 3 m of any	Measure FM12 of the CEMP (Document 7.4) which is secured through

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. 	Requirement 6 of the DCO (Document 2.1).
		 Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.	
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 	
		• Temporary trackway (i.e. interlocking panels) would be	

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		used in areas of Flood Zone C2 wherever practicable.	
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.	
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 	
		Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.	
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.	
		Design of Watercourse Crossings:	Measure FM14 of the CEMP (Document 7.4) which is
		• All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change.	secured through Requirement 6 of the DCO (Document 2.1).
		• Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 minimum size requirement based on the design flow criteria. Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert 			
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 			
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 			
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.			
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be 			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting 			
		 decisions to be made for FRAP and OWC purposes Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out). 			
Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay SAC	Change in water quality through mobilisation of sediment	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO		
	Change in	• Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate	(Document 2.1).		

Page 352

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
water quality through accidental contaminatio	water quality through accidental contamination	of 5 l/s in order to minimise the risk of blockage to outfall structures).Ensure routes of existing flows are not impacted.				
	Changes in patterns and rates of infiltration Changes in	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
river baseflow arising from dewatering Surface Water Flow Obstruction	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).				
	Changes in watercourse morphology	A list of good industry practices for the PICP has been	PICP is secured by Requirement 7 of the DCO (Document 2.1). Measure WE23 of the CEMP			
Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation			
------------------------------	---------------------------	--	---			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
	Fluvial flow impedance	outlined in the CEMP	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
		<i>Tunnel:</i> Dewatering from shafts would be treated as appropriate prior to discharge, and discharged in a	Measure WE42, of the CEMP (Document 7.4) which is secured through			

Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		controlled manner under Environmental Permit.	Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Water pumped from the tunnel and shafts could be partially saline. If this proves to be the case the following options will be developed in the tunnel specific drainage	Measure WE510, of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 management plan: The provision of a separate designated pond with a control valve could be used to treat the saline tunnel water in a controlled manner. Sodium chloride levels would be tested prior to discharge to assess if it is acceptable for discharge into adjacent watercourses; water will be discharged in the receiving watercourse when acceptable to do so within the limits stipulated as part of the Environmental Permit; and if the tested sodium chloride levels are not acceptable, tanker facilities would be provided for the water to be transported off site for use/disposal/ discharge elsewhere. 	(Document 2.1).
		The rock through which the Tunnel Boring Machine (TBM) would travel to create the tunnel is strong and of low porosity. Slurry will be used to balance the forces at the front of the TBM as it moves through the rock. In the unlikely situation that the slurry enters the surrounding rock, it is highly unlikely to pass upwards to ground level. To ensure that this does not occur the slurry will be closely	Measure WE511, of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		monitored and constantly measured. The TBM will be operated by the construction contractor in accordance with industry best practice, including appropriate monitoring and management of TBM operations. This would reduce, as far as possible, the occurrence of pressure imbalances and, therefore, the risk of a blowout that could lead to a pathway for pollutants to enter the surface water, groundwater or marine environment.	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).
		Drainage Design: DMP would specify design and control measures, developed following detailed drainage	Measure WE52 and WE53 of the CEMP (Document

Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		investigations and hydrological assessments	7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			(Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		• Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are places on either side of access tracks, the gaps should coincide.		
		Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		Design of Watercourse Crossings:	Measure FM14 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow 	secured through Requirement 6 of the DCO (Document 2.1).		
		 criteria. Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert. 			
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 			
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 			
		 Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended 			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		
		Tunnel drainage management during the operational	A Drainage Management	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		phase. Consistently with the construction-phase measure WE510 during the operation of the tunnel there would be the provision of a separate designated pond with a control valve used to store potentially saline water in a controlled manner separate from surface runoff. Sodium chloride levels would be tested prior to discharge to assess if it is acceptable for discharge into adjacent watercourses. If the tested sodium chloride levels are not acceptable, tanker facilities would be provided for the water to be transported off-site. The discharge permit would cover the construction and operational stages of the Proposed Development.	Plan which is secured by Requirement 7 of the DCO (Document 2.1).	
Non reportable WFD Water body adjacent to the Irish Sea GB110102059160	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Faye JUJ

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Changes in patterns and rates of infiltration Changes in	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	river baseflow arising from dewatering Surface Water Flow Obstruction Changes in watercourse morphology	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO
			(Document 2.1).
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			(Document 2.1).
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).
		Drainage Design: DMP would specify design and control measures, developed following detailed drainage	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured

Table 7: Summary Measures	Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		investigations and hydrological assessments	through Requirement 6 of the DCO (Document 2.1).		
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		watercourse crossings) should not provide a topographic barrier to the flow path.		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		• Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide.		
		• Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		Design of Watercourse Crossings:	Measure FM14 of the CEMP (Document 7.4) which is	
		• All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15%	secured through Requirement 6 of the DCO	

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		allowance for climate change.	(Document 2.1).
		• Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria.	
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.	
		• Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats.	
		• Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance-related flood risk effects.	
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 downstream of the working area. Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse 	
Afon Wygyr GB110102059170	Change in water quality through	 General Principles Prevent siltation and contamination of existing drainage 	Measure WE11 of the CEMP (Document 7.4) which is secured through

I age of I	Page	371
------------	------	-----

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	mobilisation of sediment Change in water quality through accidental contamination	 systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Requirement 6 of the DCO (Document 2.1).
Changes in patterns and rates of infiltration Changes in river baseflow arising from dewatering Surface Water Flow Obstruction	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	river baseflow arising from dewatering Surface Water Flow Obstruction	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Changes in watercourse		(Document 2.1).
	morphology Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Silt Management</i> : Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		would be located within the floodplain.	(Document 2.1).	
		 Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. 		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 		
		• Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.		
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 		
		• Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		normal to low flow conditions to avoid conveyance- related flood risk effects.		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Operations and maintenance (O&M) plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		
Alaw - upstream Llyn Alaw GB110102058982	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Changes in patterns and rates of infiltration Changes in river baseflow	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	arising from	Specific PICP would be prepared and implemented.	Measure WE22 of the CEMP	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Surface Water Flow Obstruction Changes in watercourse morphology	including pollution control and emergency response measures	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			(Document 2.1).	
		<i>Silt Management</i> : Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 		
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable. Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as 		
		timeframe, with stockpiled material being reinstated as the construction works progress.		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are places on either side of access tracks, the gaps should coincide. Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk. 			
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. Culverts would be installed with the invert set below the 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		natural bed level in order for a semi natural bed to			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		establish within the culvert.				
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 				
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 				
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.				
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 				
		Sufficient information will be provided to NRW and				

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		 LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out). 				
Llyn Alaw Reservoir GB31032538	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
	Changes in	Pollution Prevention measures would be adopted in general	Measure WE21 of the CEMP			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
patterns and rates of infiltration Changes in river baseflow arising from dewatering Surface Wate Flow Obstruction Changes in watercourse	patterns and rates of infiltration Changes in river baseflow	accordance with existing PPGs where still relevant and the new GPPs	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
	arising from dewatering Surface Water Flow Obstruction Changes in watercourse	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).		
	morphology Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
---	---------------------	--	---	--	
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.			
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).		
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
			the DCO (Document 2.1).		
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		watercourse crossings) should not provide a topographic barrier to the flow path.		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 		
		 Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. 		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		Design of Watercourse Crossings:	Measure FM14 of the CEMP (Document 7.4) which is	
		• All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15%	secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 	(Document 2.1).	
		 Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert. 		
		• Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats.		
		• Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance-related flood risk effects.		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		downstream of the working area.		
		• O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC.		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		
Goch Dulas GB110102059000	Change in water quality through	General PrinciplesPrevent siltation and contamination of existing drainage	Measure WE11 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	mobilisation of sediment Change in water quality through accidental contamination	 systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Requirement 6 of the DCO (Document 2.1).	
	Changes in patterns and rates of infiltration	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	river baseflow arising from dewatering Surface Water Flow Obstruction	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Changes in watercourse		(Document 2.1).	
morphology Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Inspections: Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Silt Management</i> : Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		would be located within the floodplain.	(Document 2.1).	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		 Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable. 		
		 Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress. 		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 		
		 Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. 		

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.	
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.	
		• Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats.	
		• Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of	

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		normal to low flow conditions to avoid conveyance- related flood risk effects.	
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.	
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 	
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes 	
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		
Cefni (Cefni Reservoir West) GB110102058790	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Changes in patterns and rates of infiltration Changes in	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	arising from dewatering	Specific PICP would be prepared and implemented, including pollution control and emergency response	Measure WE22 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
Surface Water Flow Obstruction Changes in watercourse	measures	secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		OHL and Substations: Discharge from excavations would	Measure WE41 of the CEMP

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A Drainage Management Plan (DMP) would be prepared	Measure WE51 of the CEMP

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		prior to commencement of works	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		<i>Silt Management</i> : Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Page 409	Page	409
----------	------	-----

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council).	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable. Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as 	
		 Sufficient gaps will be left in stockpiles so as to not 	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk. 		
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		• Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria.	()	
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.		

Measures	of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 	
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 	
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.	
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 	
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting 	

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 decisions to be made for FRAP and OWC purposes Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out). 	
Cefni (Cefni Reservoir East) GB110102058780	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	Changes in patterns and	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the	Measure WE21 of the CEMP (Document 7.4) which is

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	rates of infiltration Changes in	new GPPs	secured through Requirement 6 of the DCO (Document 2.1).
	river baseflow arising from dewatering Surface Water Flow Obstruction Changes in watercourse morphology	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		• Works within 8 m of watercourse bank tops would be	Measure WE31 of the CEMP

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).
		Drainage Design: DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Inspections: Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Permits and ConsentsNo works would be undertaken within 3 m of any	Measure FM12 of the CEMP (Document 7.4) which is secured through

Table 7: Summary Measures	of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. 	Requirement 6 of the DCO (Document 2.1).
		 Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.	()
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 	
		• Temporary trackway (i.e. interlocking panels) would be	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 		
		Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		Design of Watercourse Crossings:	Measure FM14 of the CEMP	
		• All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change.	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		• Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the		

Page 419

Table 7: Summary Measures	of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		minimum size requirement based on the design flow criteria.	
		 Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert. 	
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 	
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 	
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.	
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be 	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes 	
		 Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out). 	
Lligwy GB110102059070	Change in water quality through mobilisation of sediment	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO
	Change in	• Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate	(Document 2.1).

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	water quality through accidental contamination	of 5 l/s in order to minimise the risk of blockage to outfall structures).Ensure routes of existing flows are not impacted.	
	Changes in patterns and rates of infiltration Changes in river baseflow arising from dewatering Surface Water Flow Obstruction	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).
		A list of good industry practices for the PICP has been	Measure WE23 of the CEMP

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		outlined in the CEMP	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water	Measure WE43 of the CEMP (Document 7.4) which is secured through

Page 423

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Requirement 6 of the DCO (Document 2.1).		
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through		
Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
---	---------------------	--	---		
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
			Requirement 6 of the DCO (Document 2.1).		
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		to impede flood flow conveyance.		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		 Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress. 		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 		
		 Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. 		
		 Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk. 		

Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Ceint to Cefni Reservoir GB110102058770Change in water quality 	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
	arising from dewatering Surface Water	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Flow Obstruction Changes in watercourse		(Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
	morphology Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		OHL and Substations: Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional	Measure WE41 of the CEMP (Document 7.4) which is secured through	

-

0 B4111

Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Requirement 6 of the DCO (Document 2.1).	
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through	

.

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management: Good industry practices have been	Measure WE55 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		outlined to help minimise sediment laden runoff	secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		• Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council).		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.	(
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. Stockpiles would be located in areas that don't coincide 		
		 with mapped areas of surface water flood risk. Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert. 		
		Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 fragmentation of habitats. Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance-related flood risk effects. 		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes Following construction, temporary watercourse 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		
Ceint GB110102058940	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Changes in patterns and rates of infiltration	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Changes in		(Document 2.1).	
	river baseflow arising from dewatering Surface Water Flow Obstruction Changes in watercourse morphology	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse 	Measure WE31 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		(except watercourse crossings and drainage mitigation works)	Requirement 6 of the DCO (Document 2.1).	
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Permit regardless of the duration of the discharge activity.	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Inspections: Programme for routine checking and clearing	Measure WE54 of the CEMP

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		of drainage systems to be developed and implemented prior to installation	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	(Document 2.1).	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. 		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 		
		 Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. 		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% 	Measure FM14 of the CEMP (Document 7.4) which is secured through	
		 allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow 	(Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		criteria.		
		 Curverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert. 		
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 		
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic 		

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		inspection schedules, roles and responsibilities, details of associated FRAP or OWC.	
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes 	
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).	
Cefni Transitional GB521010102075	Change in water quality	General Principles	Measure WE11 of the CEMP (Document 7.4) which is
00	mobilisation of sediment	 Prevent siltation and contamination of existing drainage systems and natural water environments. 	secured through Requirement 6 of the DCO
	Change in water quality	• Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall	(Document 2.1).

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	through accidental contamination	structures).Ensure routes of existing flows are not impacted.		
	Changes in patterns and rates of infiltration Changes in	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	river baseflow arising from dewatering Surface Water Flow Obstruction Changes in watercourse	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
	Fluvial flow	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	(Document 2.1).	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).	
		Drainage Design: DMP would specify design and control	Measure WE52 and WE53	

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		measures, developed following detailed drainage investigations and hydrological assessments	of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigatic Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			(Document 2.1).
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 		
		Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		Design of Watercourse Crossings:	Measure FM14 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		• All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change.	secured through Requirement 6 of the DCO (Document 2.1).	
		 Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 		
		 Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert. 		
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 		
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 		
		 Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended 		

Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes. 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation

of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
Changes in patterns and rates of infiltration Changes in river baseflow	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
arising from dewatering Surface Water	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through
	Source of Effect Change in water quality through mobilisation of sediment Change in water quality through accidental contamination Changes in patterns and rates of infiltration Changes in river baseflow arising from dewatering Surface Water	Source of EffectControl and Management Measures & Mitigation MeasuresChange in water quality through mobilisation of sedimentGeneral PrinciplesChange in water quality through motilisation of sedimentGeneral PrinciplesChange in water quality through accidental contaminationGeneral PrinciplesChange in water quality through accidental contaminationGeneral PrinciplesPollution Prevent siltation and contamination of existing drainage systems and natural water environments.Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 1/s in order to minimise the risk of blockage to outfall structures).Changes in patterns and rates of infiltrationPollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPsChanges in river baseflow arising from dewateringSpecific PICP would be prepared and implemented, including pollution control and emergency response measures

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Flow Obstruction		(Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
		A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		OHL and Substations: Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional	Measure WE41 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Requirement 6 of the DCO (Document 2.1).	
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management. Good industry practices have been	Measure WE55 of the CEMP (Document 7.4) which is	

-

Measures	of water Qua	lifty, Resources and Flood Risk Control and Managem	lent measures & mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		outlined to help minimise sediment laden runoff	secured through Requirement 6 of the DCO (Document 2.1).
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

.

0 84141

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigatio Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		 flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk. 				
Braint Lower GB110102058660	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
	Changes in patterns and rates of infiltration	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
	Changes in river baseflow arising from dewatering Surface Water Flow Obstruction Changes in watercourse		(Document 2.1).			
		Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is a plan stipulated in Requirement 7 of the DCO (Document 2.1).			
Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).				
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse 	Measure WE31 of the CEMP (Document 7.4) which is secured through			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		(except watercourse crossings and drainage mitigation works)	Requirement 6 of the DCO (Document 2.1).			
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation			
------------------------------	---------------------	---	--			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		Permit regardless of the duration of the discharge activity.				
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).			
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
		Inspections: Programme for routine checking and clearing	Measure WE54 of the CEMP			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		of drainage systems to be developed and implemented prior to installation	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Measures	Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		• All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW.	(Document 2.1).	
		• Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council).		
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress. 		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 		
		Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	
		 allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the 	(Document 2.1).	
		minimum size requirement based on the design flow		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		criteria.		
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.		
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 		
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		inspection schedules, roles and responsibilities, details of associated FRAP or OWC.		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes. 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		
Braint Upper GB110102058690	Change in water quality	General Principles	Measure WE11 of the CEMP	
	through mobilisation of sediment	Prevent siltation and contamination of existing drainage systems and natural water environments.	secured through Requirement 6 of the DCO	
	Change in water quality	• Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall	(Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	through accidental contamination	structures).Ensure routes of existing flows are not impacted.		
	Changes in patterns and rates of infiltration Changes in	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
river baseflo arising from dewatering Surface Wat Flow Obstruction Changes in watercourse	river baseflow arising from dewatering Surface Water Flow Obstruction Changes in watercourse	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			secured through Requirement 6 of the DCO (Document 2.1).	
		A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: SummaryMeasures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		etc)	(Document 2.1).
		<i>Tunnel:</i> Dewatering from shafts would be treated as appropriate prior to discharge, and discharged in a controlled manner under Environmental Permit.	Measure WE42, of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented	Measure WE54 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		prior to installation	Requirement 6 of the DCO (Document 2.1).	
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Tunnel Construction</i> : Specific DMP would be prepared by the Contractor for activities. This would include options for managing partially saline dewatered arisings and the controlled risk of blowout from Tunnel Boring Machine (TBM) operations. The provision of a separate designated pond with a control valve would be used to store the	Measure WE59, WE510 and WE511 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		potentially saline tunnel water in a controlled manner separate from surface runoff. Sodium chloride levels would be tested prior to discharge to assess if it is acceptable for discharge into adjacent watercourses. If the tested sodium chloride levels are not acceptable, tanker facilities would be provided for the water to be transported off site.	(Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). 	Measure FM12 of the CEMP (Document 7.4) which is secured through	
		• All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW.	(Document 2.1).	
		 Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 		
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) 	Measure FM13 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		would be located within the floodplain.	Requirement 6 of the DCO	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.	(Document 2.1).	
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 		
		• Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.		
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 		
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		normal to low flow conditions to avoid conveyance- related flood risk effects.		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		• Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC.		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes. 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability		

Table 7: SummaryMeasures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).	
		Tunnel drainage management during the operational phase. Consistently with the construction-phase measure WE510, during the operation of the tunnel there would be the provision of a separate designated pond with a control valve used to store potentially saline water in a controlled manner separate from surface runoff. Sodium chloride levels would be tested prior to discharge to assess if it is acceptable for discharge into adjacent watercourses. If the tested sodium chloride levels are not acceptable, tanker facilities would be provided for the water to be transported off-site. The discharge permit would cover the construction and operational stages of the Proposed Development.	Measure WE510 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
Nant y Garth GB110065058490	Change in water quality through mobilisation of sediment	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Change in water quality through accidental contamination	 Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	(Document 2.1).	
	Changes in patterns and rates of infiltration Changes in river baseflow arising from dewatering Surface Water Flow Obstruction	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Changes in watercourse morphology		PICP is secured by Requirement 7 of the DCO (Document 2.1).	

Measures	of Water Qua	ality, Resources and Flood Risk Control and Managem	ient Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>Tunnel:</i> Dewatering from shafts would be treated as appropriate prior to discharge, and discharged in a	Measure WE42, of the CEMP (Document 7.4)

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		controlled manner under Environmental Permit.	which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through

Table 7: Summary Measures	Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management. Good industry practices have been	Measure WE55 of the CEMP (Document 7.4) which is	

C 144

0

Measures	of water Qua	ality, Resources and Flood Risk Control and Managem	ient measures & mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		outlined to help minimise sediment laden runoff	secured through Requirement 6 of the DCO (Document 2.1).
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>Tunnel Construction</i> : Specific DMP would be prepared by the Contractor for activities. This would include options for managing partially saline dewatered arisings and the controlled risk of blowout from Tunnel Boring Machine (TBM) operations. The provision of a separate designated pond with a control valve would be used to store the potentially saline tunnel water in a controlled manner separate from surface runoff. Sodium chloride levels would be tested prior to discharge to assess if it is acceptable for discharge into adjacent watercourses. If the tested sodium chloride levels are not acceptable, tanker facilities would be	Measure WE59, WE510 and WE511 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

.

•

Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		provided for the water to be transported off site.	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		• Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are places on either side of access tracks, the gaps should coincide.		
		 Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. 		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		Design of Watercourse Crossings:	Measure FM14 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. 	secured through Requirement 6 of the DCO (Document 2.1).	
		 Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 		
		 Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert. 		
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 		
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 		
		 Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Cegin GB110065058540	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Changes in patterns and rates of infiltration Surface Water	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Obstruction Changes in	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	watercourse morphology Fluvial flow impedance		(Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
		A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		OHL and Substations: Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional	Measure WE41 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Silt Management. Good industry practices have been	Measure WE55 of the CEMP (Document 7.4) which is

Measures	of water Qua	ality, Resources and Flood Risk Control and Managem	ient measures & mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		outlined to help minimise sediment laden runoff	secured through Requirement 6 of the DCO (Document 2.1).
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		• Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Menai Strait (GB681010120000)	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk. General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Changes in patterns and rates of infiltration	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Changes in		(Document 2.1).	
	river baseflow arising from dewatering Surface Water Flow Obstruction Changes in watercourse	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse 	Measure WE31 of the CEMP (Document 7.4) which is secured through	

Page 494

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		(except watercourse crossings and drainage mitigation works)	Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>Tunnel:</i> Dewatering from shafts would be treated as appropriate prior to discharge, and discharged in a controlled manner under Environmental Permit.	Measure WE42, of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	(Document 2.1).	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).	
		Drainage Design: DMP would specify design and control measures, developed following detailed drainage	Measure WE52 and WE53 of the CEMP (Document	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		investigations and hydrological assessments	7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	
Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
---	---------------------	--	---	--
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			(Document 2.1).	
		<i>Tunnel Construction</i> : Specific DMP would be prepared by the Contractor for activities. This would include options for managing partially saline dewatered arisings and the controlled risk of blowout from Tunnel Boring Machine (TBM) operations. The provision of a separate designated pond with a control valve would be used to store the potentially saline tunnel water in a controlled manner separate from surface runoff. Sodium chloride levels would be tested prior to discharge to assess if it is acceptable for discharge into adjacent watercourses. If the tested sodium chloride levels are not acceptable, tanker facilities would be provided for the water to be transported off site.	Measure WE59, WE510 and WE511 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Permit (FRAP) from NRW.		
		• Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council).		
		Structures in the Floodplain:	Measure FM13 of the CEMP (Document 7.4) which is	
		• As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain.	secured through Requirement 6 of the DCO (Document 2.1).	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 the construction works progress. Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk. 		
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for th e watercourse in addition to the minimum size requirement based on the design flow criteria. Culverts would be installed with the invert set below the 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		natural bed level in order for a semi natural bed to establish within the culvert.		
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 		
		• Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects.		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out). 		
Llyn Alaw Reservoir	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	Changes in patterns and rates of infiltration Changes in	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	river baseflow arising from dewatering Surface Water Flow Obstruction Changes in watercourse	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			(Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.		
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).	
		Drainage Design: DMP would specify design and control measures, developed following detailed drainage	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		investigations and hydrological assessments	through Requirement 6 of the DCO (Document 2.1).	
		Inspections: Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		watercourse crossings) should not provide a topographic barrier to the flow path.		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 		
		Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		Design of Watercourse Crossings:	Measure FM14 of the CEMP (Document 7.4) which is	
		• All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15%	secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		allowance for climate change.	(Document 2.1).	
		• Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria.		
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.		
		• Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats.		
		• Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance-related flood risk effects.		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse		

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		downstream of the working area.	
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 	
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes. 	
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).	
Cefni Reservoir	Change in water quality through	General PrinciplesPrevent siltation and contamination of existing drainage	Measure WE11 of the CEMP (Document 7.4) which is secured through

Table 7: Summary Measures	of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	mobilisation of sediment Change in water quality through accidental contamination	 systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Requirement 6 of the DCO (Document 2.1).
	Changes in patterns and rates of infiltration	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	river baseflow arising from dewatering Surface Water Flow Obstruction	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Changes in watercourse		(Document 2.1).
morphology Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managen	hent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			Requirement 7 of the DCO (Document 2.1).
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Page 514	Page	514	
----------	------	-----	--

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		would be located within the floodplain.	(Document 2.1).
		 Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. 	
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 	
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.	
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.	
		• Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplains storage/conveyance.	
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 	

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.	
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert. 	
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 	
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of 	

Table 7: SummaryMeasures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	ient Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		normal to low flow conditions to avoid conveyance- related flood risk effects.	
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.	
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 	
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes 	
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability	

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).	
Tyn Llan, Old Rectory S060ILLANE/1	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
Chai patte rat infil Chai	Changes in patterns and rates of infiltration Changes in	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
	arising from dewatering	Specific PICP would be prepared and implemented, including pollution control and emergency response	Measure WE22 of the CEMP (Document 7.4) which is

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Surface Water Flow Obstruction Changes in watercourse	measures	secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		OHL and Substations: Discharge from excavations would	Measure WE41 of the CEMP

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A Drainage Management Plan (DMP) would be prepared	Measure WE51 of the CEMP

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & MitigationMeasures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		prior to commencement of works	 (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1). 	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		<i>Silt Management</i> : Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Page	523

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council).	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. 	
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 	
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.	
		 Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress. 	
		Soil stockpiles would be located in Flood Zone A to	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		 minimise reductions in floodplains storage/conveyance. Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk. 			
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		 Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to patch list and the set of the set			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures Where the Mitigation is Secured		
		Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats.		
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 		
		 Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area. 		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 		
		Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 decisions to be made for FRAP and OWC purposes; and Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out). 		
Pandy, Rhosmeirch S060ORHOSM/1	Change in water quality through mobilisation of sediment Change in water quality through accidental contamination	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	Changes in	Pollution Prevention measures would be adopted in general	Measure WE21 of the CEMP	

Table 7: Summary Measures	/ of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	patterns and rates of infiltration Changes in	accordance with existing PPGs where still relevant and the new GPPs	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
river baseflow arising from dewatering Surface Water Flow Obstruction Changes in watercourse morphology	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
	Fluvial flow impedance	A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.		
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
			the DCO (Document 2.1).			
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance. Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		watercourse crossings) should not provide a topographic barrier to the flow path.			
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.			
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.			
		• Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplains storage/conveyance.			
		 Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. 			
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.			
		Design of Watercourse Crossings:	Measure FM14 of the CEMP (Document 7.4) which is		
		• All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15%	secured through Requirement 6 of the DCO		
Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
--	---------------------	--	---------------------------------	--	
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		allowance for climate change.	(Document 2.1).		
		• Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria.			
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.			
		• Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats.			
		• Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance-related flood risk effects.			
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 downstream of the working area. Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be 		
		minimum, details as to now blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated ERAP or OWC		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		
Glan Menai, Holyhead Road S060WHOLYH/1	Change in water quality through	General PrinciplesPrevent siltation and contamination of existing drainage	Measure WE11 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
	mobilisation of sediment Change in water quality through accidental contamination	 systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Requirement 6 of the DCO (Document 2.1).	
	Changes in patterns and rates of infiltration	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
	river baseflow arising from dewatering Surface Water Flow Obstruction	Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO	

Table 7: Summary Measures	of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Fluvial flow impedance		(Document 2.1).
		A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	hent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			Requirement 7 of the DCO (Document 2.1).
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		would be located within the floodplain.	(Document 2.1).	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		
		• Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide.		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigatior Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.		
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 		
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		normal to low flow conditions to avoid conveyance- related flood risk effects.		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability		

- **T** -

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		
Llanfachell STW CG0058201	watercourse morphology	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Specific PICP would be prepared and implemented, including pollution control and emergency response	Measure WE22 of the CEMP (Document 7.4) which is	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		measures	secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).	
		A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		OHL and Substations: Discharge from excavations would	Measure WE41 of the CEMP	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigatio Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A Drainage Management Plan (DMP) would be prepared	Measure WE51 of the CEMP

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		prior to commencement of works	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Page	547
i ugo	0.17

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		<i>Silt Management</i> : Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary Measures	of Water Qua	ality, Resources and Flood Risk Control and Managem	ent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council).	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 to impede flood flow conveyance. Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 	
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.	
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.	
		Sufficient gaps will be left in stockpiles so as to not	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide. Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance. Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk. 	
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 	(2000)
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 		
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 decisions to be made for FRAP and OWC purposes. Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out). 		
Llanfechell Pumping Station CG0058101	Changes in watercourse morphology	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed pre-development runoff rates (subject to a minimum rate of 5 l/s in order to minimise the risk of blockage to outfall structures). Ensure routes of existing flows are not impacted. 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the	Measure WE21 of the CEMP (Document 7.4) which is	

Table 7: Summary Measures	y of Water Qua	ality, Resources and Flood Risk Control and Managen	nent Measures & Mitigation
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		new GPPs	secured through Requirement 6 of the DCO (Document 2.1).
		Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).
		A list of good industry practices for the PICP has been outlined in the CEMP	Measure WE23 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		Works within 8 m of watercourse bank tops would be	Measure WE31 of the CEMP

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Environmental Permits: Where discharges to a watercourse are required, a water discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or	Measure WE43 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP which is secured by Requirement 7 of the DCO (Document 2.1).
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Inspections: Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Permits and ConsentsNo works would be undertaken within 3 m of any	Measure FM12 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		watercourse (other than for watercourse crossings).	Requirement 6 of the DCO	
		• All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW.	(Document 2.1).	
		 Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 		
		Structures in the Floodplain:	Measure FM13 of the CEMP	
		• As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain.	secured through Requirement 6 of the DCO (Document 2.1).	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.		
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		• Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide.		
		Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		
		• Stockpiles would be located in areas that don't coincide with mapped areas of surface water flood risk.		
		Design of Watercourse Crossings:	Measure FM14 of the CEMP	
		• All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change.	secured through Requirement 6 of the DCO (Document 2.1).	
		Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		minimum size requirement based on the design flow criteria.		
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.		
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 		
		 Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance- related flood risk effects. 		
		• Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be 		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes. 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre- installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such stability measures were in place before the watercourse crossing works are carried out).		
Third Party Receptors	Surface Water Flood Risk (increased runoff) Surface Water	 General Principles Prevent siltation and contamination of existing drainage systems and natural water environments. Ensure flows from construction areas do not exceed 	Measure WE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
	Obstruction Fluvial flow impedance	of 5 l/s in order to minimise the risk of blockage to outfall structures).Ensure routes of existing flows are not impacted.			
	Flood Storage Displacement	Pollution Prevention measures would be adopted in general accordance with existing PPGs where still relevant and the new GPPs	Measure WE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		Specific PICP would be prepared and implemented, including pollution control and emergency response measures	Measure WE22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). PICP is secured by Requirement 7 of the DCO (Document 2.1).		
		A list of good industry practices for the PICP has been	Measure WE23 of the CEMP		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		outlined in the CEMP	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Works within 8 m of watercourse bank tops would be avoided; and No works to be undertaken within 3 m of watercourse (except watercourse crossings and drainage mitigation works) 	Measure WE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>OHL and Substations</i> : Discharge from excavations would be discharged to adjacent grassed/vegetated agricultural away from watercourses as far as possible. Additional measures would be put in place (e.g. sediment fencing, check dams, SuDS, storage ponds, silt trapping systems etc)	Measure WE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Environmental Permits: Where discharges to a watercourse are required, a water	Measure WE43 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		discharge activity Environmental Permit will be obtained from NRW as required, dependent on the duration of the discharge activity and in consultation with NRW. In general, a permit is not required for groundwater dewatering activities of less than three months duration. However, in areas where discharges are located within, or less than 500 m upstream from a protected site there will be a requirement for a water discharge activity Environmental Permit regardless of the duration of the discharge activity.	Requirement 6 of the DCO (Document 2.1).		
		A Drainage Management Plan (DMP) would be prepared prior to commencement of works	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		<i>Drainage Design</i> : DMP would specify design and control measures, developed following detailed drainage investigations and hydrological assessments	Measure WE52 and WE53 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		<i>Inspections</i> : Programme for routine checking and clearing of drainage systems to be developed and implemented prior to installation	Measure WE54 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Silt Management: Good industry practices have been outlined to help minimise sediment laden runoff	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Land Drainage: Procedures outlined to ensure the protection of features (including PWS) have been outlined	Measure WE56 of the CEMP (Document 7.4) which is secured through	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Requirement 6 of the DCO (Document 2.1).	
		 A detailed Flood Management Plan (FMP) would be prepared and submitted to NRW and LLFAs for approval post grant of the DCO. The following measures would be implemented. 	Measure FM11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	
		• FMPs would apply equally to all sources of flooding, including main river and ordinary watercourses, surface water (external) and groundwater, together with internal sources of flood risk as appropriate.	(Document 2.1). The Flood Management Plan (FMP) is secured by	
		• The FMP would cover both construction and operational/maintenance phases as different receptor groups would be affected for each phase.	(Document 7 of the DCO	
		• The FMP would, as a minimum include details as to how frequently weather and stream flow observations would be made, how forecasts, alerts and actions would be disseminated, signage, roles and responsibilities, emergency response procedures, including detailed evacuation plan and procedures for making safe plant and equipment.		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		• Procedures would be presented to facilitate the periodic robust assessment of any potential floodplain and surface water flow obstructions, ensuring that activities do not coincide with those areas of mapped fluvial and surface water flood risk.		
		 Permits and Consents No works would be undertaken within 3 m of any watercourse (other than for watercourse crossings). All works within 8m of non-tidal Main River and 16 m of tidal Main River would be subject to a Flood Risk Activity Permit (FRAP) from NRW. Any works within 8m of an Ordinary Watercourse would be subject to an OWC from the relevant LLFA (either IACC or Gwynedd Council). 	Measure FM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 Structures in the Floodplain: As far as possible, no raised structures (such as access tracks, working areas and associated topsoil stockpiles) would be located within the floodplain. 	Measure FM13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO	

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		• Approaches to bridges and culverts in Flood Zone C2 would minimise ramping up to the bridge deck so as not to impede flood flow conveyance.	(Document 2.1).	
		 Access tracks that are shown to intersect areas of surface water flooding (exc. those coincident with watercourse crossings) should not provide a topographic barrier to the flow path. 		
		• Temporary trackway (i.e. interlocking panels) would be used in areas of Flood Zone C2 wherever practicable.		
		• Stockpiles would be present for the shortest practicable timeframe, with stockpiled material being reinstated as the construction works progress.		
		• Sufficient gaps will be left in stockpiles so as to not impede flood flow pathways. Stockpile gaps will be located at topographic low points to preserve existing flow paths. Where stockpiles are placed on either side of access tracks, the gaps should coincide.		
		Soil stockpiles would be located in Flood Zone A to minimise reductions in floodplain storage/conveyance.		
		• Stockpiles would be located in areas that don't coincide		

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures					
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
		with mapped areas of surface water flood risk.			
		 Design of Watercourse Crossings: All temporary watercourse crossings would be designed to safely convey the 1% AEP event plus a 15% allowance for climate change. Culverts would be designed with a pipe/openings of appropriate sizes for the watercourse in addition to the minimum size requirement based on the design flow criteria. 	Measure FM14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
		• Culverts would be installed with the invert set below the natural bed level in order for a semi natural bed to establish within the culvert.			
		 Culverts will be kept to the minimum size required, and access for wildlife would be maintained to prevent fragmentation of habitats. 			
		• Culverts would be installed in a dry channel isolated from upstream and downstream channel flow. These activities would need to take place during periods of normal to low flow conditions to avoid conveyance-			

Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 related flood risk effects. Flow would be diverted around the culvert working area by overpumping. Pumped water high in suspended 		
		solids would be pumped out into a sediment trap, before being discharged back into the watercourse downstream of the working area.		
		 Robust O&M plans would be prepared covering, as a minimum, details as to how blockages would be prevented/minimised/detected/removed, periodic inspection schedules, roles and responsibilities, details of associated FRAP or OWC. 		
		 Sufficient information will be provided to NRW and LLFAs to enable appropriate screening and permitting decisions to be made for FRAP and OWC purposes. 		
		• Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability		
		 decisions to be made for FRAP and OWC purposes. Following construction, temporary watercourse crossings will be removed and bed and bank material will be reinstated in the same general profile as the pre-installation state. Bed and bank profiles will be recreated with appropriate measures to ensure stability that do not involve hard engineering (unless such 		
Table 7: Summary of Water Quality, Resources and Flood Risk Control and Management Measures & Mitigation Measures				
---	---------------------	---	---	
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		stability measures were in place before the watercourse crossing works are carried out).		
		Section 1.7 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments to only permit drainage works only in stipulated areas within protected sites. In addition an area in Section C excludes permanent infrastructure with the exception of oversail of conductors. Section 1.8 of the Environmental Commitments Register (Document 7.4.2.1) makes commitments as to which	Schedule of Environmental Commitments (Document 7.4.2.1) which is secured through Requirement 6 of the DCO (Document 2.1).	
		watercourses are to be crossed with clear span bridges.		

8 Traffic and Transport

8.1 INTRODUCTION

8.1.1 Control and management measures and mitigation measures required to mitigate the potential effects arising from the traffic associated with the construction, operation, maintenance and decommissioning of the Proposed Development are set out in section 9 of Chapter 13 Traffic and Transport (Document 5.13) and Table 8 identifies where each of these measures are secured.

Relevant Mitigation by Design

8.1.2 Although not design as such, the Construction Traffic Routes and their selection for HGV or LGV only is considered to be a mitigation by design measure, to ensure that sensitive locations and smaller roads would be avoided.

8.2 TRAFFIC AND TRANBSPORT CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

8.2.1 Table 8 identifies where each of these measures are secured.

Table 8: Summary of Traffic and Transport Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
People at Home People in workplaces Sensitive groups (children, elderly and disabled) Sensitive locations People walking	Severance	 The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700 on Sundays. Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. Tunnelling works may take place outside of the core working hours subject to the following restrictions: blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 13:00 on Saturdays; and surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays. 	Measure GP11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).	
People cycling Open spaces,		Prescribed HGV and LGV Construction Routes. Only proposed construction traffic routes are to be used for the construction of the Proposed Development.	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 8: Summary of Traffic and Transport Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
recreational sites, shopping areas Road users		HGV Traffic Movement and Timing Restrictions, which could include restrictions on routes with schools, congested junctions (as determined in the TA (Document 5.13.2.1))	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Outline Construction Traffic Management Plan (Document 7.5)	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).	
Sensitive groups (children, elderly and disabled) Sensitive locations People walking	Pedestrian Delay	 The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700 on Sundays. Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. Tunnelling works may take place outside of the core working hours subject to the following restrictions: blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 13:00 on Saturdays; and surface drilling and curtain grouting associated with 	Measure GP11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).	

Page	573
	•••

Table 8: Summary of Traffic and Transport Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Open spaces, recreational sites, shopping		shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays.		
aleas		HGV Traffic Movement and Timing Restrictions, which could include restrictions on routes with schools, congested junctions (as determined in the TA (Document 5.13.2.1))	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Outline Construction Traffic Management Plan (Document 7.5)	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).	
		PRoW Management Plan (PRoWMP) (Document 7.6)	PRoWMP (Document 7.6) which is secured through Requirement 6 of the DCO (Document 2.1).	
People at	Fear and	The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700	Measure GP11 of the CEMP (Document 7.4)	

Table 8: Summary of Traffic and Transport Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Home	Intimidation	on Sundays.	which is secured through	
People in workplaces		Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays.	Requirement 6 of the DCO (Document 2.1).	
Sensitive		Tunnelling works may take place outside of the core working hours subject to the following restrictions:	Construction hours which are secured by	
groups (children,		 blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 	Requirement 8 of the DCO (Document 2.1).	
elderly and disabled)		13:00 on Saturdays; and		
Sensitive locations		 surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays. 		
People				
walking People cycling		Prescribed HGV and LGV Construction Routes. Only proposed construction traffic routes are to be used for the construction of the Proposed Development.	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO	
Open spaces,			(Document 2.1).	
recreational sites,		HGV Traffic Movement and Timing Restrictions, which could include restrictions on routes with schools, congested	OCTMP (Document 7.5) which is secured through	

Page	575
i ugo	010

Table 8: Summary of Traffic and Transport Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
shopping areas		junctions (as determined in the TA (Document 5.13.2.1)	Requirement 6 of the DCO (Document 2.1).
Road users		Outline Construction Traffic Management Plan (Document 7.5)	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).
People at Home		The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700 on Sundays.	Measure GP11 of the CEMP (Document 7.4) which is secured through
People in workplaces		Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays.	Requirement 6 of the DCO (Document 2.1).
Sensitive	Highway Safety	Tunnelling works may take place outside of the core working hours subject to the following restrictions:	Construction hours which are secured by
groups (children, elderly and		 blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 13:00 on Saturdays; and 	Requirement 8 of the DCO (Document 2.1).
Sensitive		 surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on 	

Table 8: Summary of Traffic and Transport Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
locations		Saturdays.		
People walking People cycling		National Grid, in consultation with the LHAs and Emergency Services, will promote and publicise Road Safety Information during the construction of the Proposed Development	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).	
Open spaces, recreational sites, shopping areas		HGV Traffic Movement and Timing Restrictions, which could include restrictions on routes with schools, congested junctions (as determined in the TA (Document 5.13.2.1)	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).	
Road users		Construction Traffic Management Plan (OCTMP) (Document 7.5)	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).	
People walking	PRoW	PRoW Management Plan (Document 7.6)	PRoWMP (Document 7.6) which is secured through Requirement 6 of the DCO	

Table 8: Summary of Traffic and Transport Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
People cycling			(Document 2.1).
- ,		Construction Traffic Management Plan (OCTMP) (Document 7.5)	OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).

9 Air Quality

9.1 INTRODUCTION

9.1.1 Control and management measures and mitigation measures required to mitigate the potential air quality effects from the construction, operation, maintenance and decommissioning of the Proposed Development are set out in section 9 of Chapter 14 Air Quality (**Document 5.14**) and Table 9 identifies where each of these measures are secured.

Relevant Mitigation by Design

9.1.2 No mitigation by design measures were considered necessary.

9.2 AIR QUALITY CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

- 9.2.1 Table 9 identifies where each of these measures are secured.
- 9.2.2 Ecologically sensitive receptors affected by air quality and emissions are additionally assessed in Chapter 9 Ecology (**Document 5.9**), please refer to Table 4 in this document.

Table 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Human Health Sensitive Receptors	Increase in pollutant concentrations due to construction phase road traffic emissions Increase in pollutant concentrations due to construction phase emergency generator emissions	 The Construction Traffic Management Plan (OCTMP) (Document 7.5) implements the control and management of vehicles to and from site including the delivery and removal of goods and materials. In addition to the OCTMP the following measures will be implemented: using low emission vehicles and plant fitted with catalysts, diesel particulate filters or similar devices where practicable; ensuring that plant is well maintained, with routine servicing of plant and vehicles to be carried out in accordance with manufacturer's recommendations; ensuring that all vehicles hold current certification and that they comply with the exhaust emission regulations for their class; ensuring all vehicles switch off engines when not in use (no idling vehicles); minimising the use of diesel or petrol powered generators and using mains electricity or battery powered equipment where practicable; and 	Measure AE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 9: Sumn	nary of Air Quality	and Emissions Control and Management Measures & Mitig	ation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		• producing a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).	
	Dust soiling from construction activity Increase in airborne PM ₁₀	A certain amount of dust may be produced during dry weather conditions but every effort will be made to keep this to a minimum. This will be achieved by visual assessment of dust emissions and application of control measures as appropriate. Precautions will also be taken to minimise the deposit of mud and dust on the public roads as a result of vehicles arriving and leaving site (referred to as 'track out'). When this cannot be avoided, appropriate control measures will be applied.	Measure AE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
conce that c risk to health	concentrations that could be a risk to human health	A DuMP will be prepared and will include measures to control dust during the construction of the Proposed Development.	Measure AE12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A DuMP will be prepared and will include measures to control dust during the construction of the Proposed	Measure AE13 of the CEMP (Document 7.4) which is

Table 9: Sumn	nary of Air Quality	and Emissions Control and Management Measures & Mitig	ation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Development.	secured through Requirement 6 of the DCO (Document 2.1). DuMP h is secured by Requirement 7 of the DCO (Document 2.1)
		 The DuMP will contain the following measures in relation to site layout: the site layout will be planned so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicable. Where practical materials that have a potential to produce dust will be removed from site as soon as possible, unless being re-used on site; and hard surfacing will be provided at access and egress points to the public highway. 	Measure AE14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DuMP which is secured by Requirement 7 of the DCO (Document 2.1)
		The DuMP will contain the following measures in relation to storage and handling of materials:handling and transfer of soil and dusty materials will be	Measure AE15 of the CEMP (Document 7.4) which is secured through Requirement

Table 9: Sumn	nary of Air Quality	and Emissions Control and Management Measures & Mitig	ation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 controlled to reduce dust generation. During material handling operations the number of handling operations will be kept to a minimum to ensure that dusty material is not moved or handled unnecessarily; sand and other aggregates will be covered, bulk cement and other fine powder materials will be delivered in enclosed tankers and stored with suitable emission control systems to prevent escape of material; for smaller supplies of fine powder materials bags will be sealed after use and stored appropriately to prevent dust; minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; when loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, material handling methods will be used that minimise the generation of airborne dust. Drop heights will be kept to a minimum. Where there are visible dust issues and under prolonged dry conditions sources will be dampened down; 	6 of the DCO (Document 2.1). DuMP which is secured by Requirement 7 of the DCO (Document 2.1)

Table 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 soils will be managed in line with measure SM12; and avoid scabbling (roughening of concrete surfaces), if 	

Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 soils will be managed in line with measure SM12; and 	
		 avoid scabbling (roughening of concrete surfaces), if possible. 	
	Any potential effects	 A Stakeholder Communication Plan will be implemented that will include engagement with the community before and during work on site. The Stakeholder Communication Plan will: display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary and also display the head or regional office contact information; record any dust and air quality complaints, identified causes and appropriate measures taken to reduce emissions. The contractor will make the complaints log 	Measure AE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 available to the respective local authority when asked, and record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book. 	

Table 9: Sumn	nary of Air Quality	and Emissions Control and Management Measures & Mitig	ation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	Non Compliance with the CEMP	 The contractor will undertake inspections, which will include monitoring compliance with the CEMP. Inspections and monitoring will include: Agree a representative dust monitoring scheme that is representative of the dust risk at relevant worksites. This could include dust deposition, dust flux, or real-time PM₁₀ continuous monitoring, which will be agreed with the Local Authority. Where possible commence baseline monitoring at least three months or as soon as practicable thereafter before work commences on site; Monitoring of dust, record inspection results, and make the log available to the relevant local authority when asked; and Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. 	Measure AE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
Ecologically Sensitive	Dust soiling from construction	A certain amount of dust may be produced during dry weather conditions but every effort will be made to keep this to a minimum. This will be achieved by visual assessment	Measure AE11 of the CEMP (Document 7.4) which is secured through Requirement

Table 9: Sumn	nary of Air Quality	and Emissions Control and Management Measures & Mitig	gation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
Receptors	activity	of dust emissions and application of control measures as appropriate. Precautions will also be taken to minimise the deposit of mud and dust on the public roads as a result of vehicles arriving and leaving site (referred to as 'track out'). When this cannot be avoided, appropriate control measures will be applied.	6 of the DCO (Document 2.1).
		A DuMP will be prepared and will include measures to control dust during the construction of the Proposed Development.	Measure AE12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DuMP which is secured by Requirement 7 of the DCO (Document 2.1)
		A DuMP will be prepared and will include measures to control dust during the construction of the Proposed Development.	Measure AE13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 9: Sum	mmary of Air Quality and Emissions Control and Management Measures & Mitigation Measures		
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			DuMP which is secured by Requirement 7 of the DCO (Document 2.1)
		 The DuMP will contain the following measures in relation to site layout: the site layout will be planned so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicable. Where practical materials that have a potential to produce dust will be removed from site as soon as possible, unless being re-used on site; and hard surfacing will be provided at access and egress points to the public highway. 	Measure AE14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DuMP which is secured by Requirement 7 of the DCO (Document 2.1)
		 The DuMP will contain the following measures in relation to storage and handling of materials: handling and transfer of soil and dusty materials will be controlled to reduce dust generation. During material handling operations the number of handling operations will be kept to a minimum to ensure that dusty material is not moved or handled unnecessarily; 	Measure AE15 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DuMP which is secured by Requirement 7 of the DCO

Page 507

Table 9: Sumn	nary of Air Quality	and Emissions Control and Management Measures & Mitig	ation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 sand and other aggregates will be covered, bulk cement and other fine powder materials will be delivered in enclosed tankers and stored with suitable emission control systems to prevent escape of material; for smaller supplies of fine powder materials bags will be sealed after use and stored appropriately to prevent dust; minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; when loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, material handling methods will be used that minimise the generation of airborne dust. Drop heights will be kept to a minimum. Where there are visible dust issues and under prolonged dry conditions sources will be dampened down; soils will be managed in line with measure SM12; and 	(Document 2.1)
		 avoid scabbling (roughening of concrete surfaces), if possible. 	
	Increase in	The Construction Traffic Management Plan (OCTMP)	Measure AE21 of the CEMP

Table 9: Sumn	nary of Air Quality	and Emissions Control and Management Measures & Mitig	ation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	pollutant concentrations due to construction phase road traffic emissions Increase in pollutant concentrations due to construction phase emergency generator emissions	 (Document 7.5) implements the control and management of vehicles to and from site including the delivery and removal of goods and materials. In addition to the OCTMP the following measures will be implemented: using low emission vehicles and plant fitted with catalysts, diesel particulate filters or similar devices where practicable; ensuring that plant is well maintained, with routine servicing of plant and vehicles to be carried out in accordance with manufacturer's recommendations; ensuring that all vehicles hold current certification and that they comply with the exhaust emission regulations for their class; ensuring all vehicles switch off engines when not in use (no idling vehicles); minimising the use of diesel or petrol powered generators and using mains electricity or battery powered equipment where practicable; and producing a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and 	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).

Page 589	Page	589
----------	------	-----

Table 9: Sumn	able 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		car-sharing).		
	Any potential effects	 A Stakeholder Communication Plan will be implemented that will include engagement with the community before and during work on site. The Stakeholder Communication Plan will: display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary and also display the head or regional office contact information; record any dust and air quality complaints, identified causes and appropriate measures taken to reduce emissions. The contractor will make the complaints log available to the respective local authority when asked; and record any exceptional incidents that cause dust and/or air amingiana either on ar effaite, and the action taken. 	Measure AE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		to resolve the situation in the log book.		
	Non Compliance with the CEMP	The contractor will undertake inspections, which will include monitoring compliance with the CEMP. Inspections and monitoring will include:	Measure AE41 of the CEMP (Document 7.4) which is secured through Requirement	

Table 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		• Agree a representative dust monitoring scheme that is representative of the dust risk at relevant worksites. This could include dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring, which will be agreed with the Local Authority. Where possible commence baseline monitoring at least three months or as soon as practicable thereafter before work commences on site;	6 of the DCO (Document 2.1).
		 Monitoring of dust, record inspection results, and make the log available to the relevant local authority when asked; and 	
		• Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	

Table 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Dust sensitive receptors	et sensitive eptors Dust soiling from construction activity	A certain amount of dust may be produced during dry weather conditions but every effort will be made to keep this to a minimum. This will be achieved by visual assessment of dust emissions and application of control measures as appropriate. Precautions will also be taken to minimise the deposit of mud and dust on the public roads as a result of vehicles arriving and leaving site (referred to as 'track out'). When this cannot be avoided, appropriate control measures will be applied.	Measure AE11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		A DuMP will be prepared and will include measures to control dust during the construction of the Proposed Development.	Measure AE12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		A DuMP will be prepared and will include measures to control dust during the construction of the Proposed Development.	Measure AE13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			DuMP which is secured by Requirement 7 of the DCO (Document 2.1)
		 The DuMP will contain the following measures in relation to site layout: the site layout will be planned so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicable. Where practical materials that have a potential to produce dust will be removed from site as soon as possible, unless being re-used on site; and hard surfacing will be provided at access and egress points to the public highway. 	Measure AE14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DuMP which is secured by Requirement 7 of the DCO (Document 2.1)
		 The DuMP will contain the following measures in relation to storage and handling of materials: handling and transfer of soil and dusty materials will be controlled to reduce dust generation. During material handling operations the number of handling operations will be kept to a minimum to ensure that dusty material is not moved or handled unnecessarily; 	Measure AE15 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DuMP which is secured by Requirement 7 of the DCO

Table 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 sand and other aggregates will be covered, bulk cement and other fine powder materials will be delivered in enclosed tankers and stored with suitable emission control systems to prevent escape of material; for smaller supplies of fine powder materials bags will be 	(Document 2.1)
		 for smaller supplies of the powder materials bags will be sealed after use and stored appropriately to prevent dust; 	
		 minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; 	
		 when loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, material handling methods will be used that minimise the generation of airborne dust. Drop heights will be kept to a minimum. Where there are visible dust issues and under prolonged dry conditions sources will be dampened down; 	
		 vehicle loads will be sheeted during the transportation of loose or potentially dusty material or spoil; 	
		 re-vegetate earthworks and exposed areas/soil stockpiles with an appropriate seed mix to the existing 	

I age JJH

Table 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		 habitat, to stabilise surfaces as soon as practicable; use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; 		
		 only remove the cover in small areas during work and not all at once; and avoid scabbling (roughening of concrete surfaces), if possible. 		
	Increase in pollutant concentrations due to construction phase road traffic emissions Increase in pollutant concentrations due to	 The Construction Traffic Management Plan (OCTMP) (Document 7.5) implements the control and management of vehicles to and from site including the delivery and removal of goods and materials. In addition to the OCTMP the following measures will be implemented: using low emission vehicles and plant fitted with catalysts, diesel particulate filters or similar devices where practicable; ensuring that plant is well maintained, with routine servicing of plant and vehicles to be carried out in accordance with manufacturer's recommendations; 	Measure AE21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OCTMP (Document 7.5) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
	phase emergency generator emissions	 that they comply with the exhaust emission regulations for their class; ensuring all vehicles switch off engines when not in use (no idling vehicles); minimising the use of diesel or petrol powered generators and using mains electricity or battery powered equipment where practicable; and producing a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). 	
	Any potential effects	 A Stakeholder Communication Plan will be implemented that will include engagement with the community before and during work on site. The Stakeholder Communication Plan will: display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary and also display the head or regional office contact information; record any dust and air quality complaints, identified causes and appropriate measures taken to reduce 	Measure AE31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 9: Sumn	ble 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures		
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 emissions. The contractor will make the complaints log available to the respective local authority when asked; and record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book. 	
	Non Compliance with the CEMP	 The contractor will undertake inspections, which will include monitoring compliance with the CEMP. Inspections and monitoring will include: Agree a representative dust monitoring scheme that is representative of the dust risk at relevant worksites. This could include dust deposition, dust flux, or real-time PM₁₀ continuous monitoring, which will be agreed with the Local Authority. Where possible commence baseline monitoring at least three months or as soon as practicable thereafter before work commences on site; Monitoring of dust, record inspection results, and make the log available to the relevant local authority when asked; and Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when 	Measure AE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Page	597
------	-----

Table 9: Summary of Air Quality and Emissions Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.		

10 Construction Noise & Vibration

10.1 INTRODUCTION

- 10.1.1 Control and management measures and mitigation measures required to mitigate the potential noise and vibration effects from the construction, , maintenance and decommissioning of the Proposed Development are set out in section 9 of Chapter 15 Construction Noise and Vibration (**Document 5.15**) and Table 10 identifies where each of these measures are secured.
- 10.1.2 In addition to the CEMP (**Document 7.4**) a NVMP (**Document 7.9**) has been produced which sets out the noise and vibration control measures, and other processes, in more detail that would be employed to minimise adverse noise and vibration effects.

Relevant Mitigation by Design

- 10.1.3 As construction effects are in general terms temporary, although works at the tunnelling sites will be longer terms, they have not been a prominent factor in the design of the Proposed Development, although some mitigation by design has been possible.
- 10.1.4 The Penmynydd Road Construction Compound would be sited in its proposed location, rather than the field directly adjacent which was include at Stage 3 Consultation, to increase the distance to the nearest residential property at Tyn y Felin.

10.2 CONSTRUCTION NOISE AND VIBRATION CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

10.2.1 Table 10 identifies where each of these measures are secured.

Page	599
i ugo	000

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
Receptors up to 500 m from the boundary of construction compounds	Noise from preparation and use of construction compounds for the OHL and substations, and construction of the substation extensions.	 The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700 on Sundays. Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. Tunnelling works may take place outside of the core working hours subject to the following restrictions: blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 13:00 on Saturdays; and surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays. 	Measure GP11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).
		These measures relate to community engagement and public information. They include the provision of a 24 hour free telephone hotline and a project website which would be established and managed by the community relations team. Also included is a procedure for dealing	Measures GP21 to GP27 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		with complaints. Full details are provided in the CEMP (Document 7.4).	NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		A NVMP (Document 7.9) has been produced which sets out the noise and vibration control measures and other processes, that would be employed by the contractor to minimise adverse noise and vibration effects.	Measure NV11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
			NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		Noise monitoring (and vibration monitoring where appropriate) would be carried out at or around residential properties or any other identified sensitive structures during the construction phase to check compliance with noise (and vibration) limits as set out in the CEMP (Document 7.4) and the NVMP (Document 7.9)	Measure NV12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			is secured through Requirement 6 of the DCO (Document 2.1).
		The proposed hours of work during the construction phase are set out in measure Section 2.18 and Requirement 8 (Document 2.1). If necessary, 'Prior consent for work on construction sites' would be sought by the contractor under the Section 61 process	Measures NV13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
			NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
			Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).
		• Standard best practice construction working methods would be adopted which include: all vehicles, plant and equipment associated with the construction works will be properly maintained in good efficient	Measure NV14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 working order, fitted with effective exhaust silencers and operated in such a manner to avoid causing excessive noise emissions; low noise generators and quieter plant and equipment will be used, as far as reasonably practicable; as far as reasonably practicable, all major compressors will be 'sound-reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers; static plant (such as pumps, compressors and generators) and equipment liable to create noise and/or vibration whilst in operation will, as far as reasonably practicable, be positioned so as to cause minimum noise disturbance, i.e. located away from 	2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		 sensitive receptors; audible warning systems, such as vehicle reversing sirens, will normally be set to as low a setting as is 	

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		compatible with safety requirements; white noise reversing alarms will be used where it is considered safe to do so;	
		 loading and unloading activities will be located as far a reasonably practicable away from sensitive receptors; 	
		 construction traffic movements will be undertaken in accordance with the Outline Construction Traffic Management Plan (Document 7.5); 	
		 access tracks will be well maintained during construction works and any potholes will be filled in and any uneven surfaces smoothed out as soon as reasonably practicable; 	
		 plant and equipment will be shut down when not in use; 	
		 drop heights of materials will be minimised; 	
		 employees, subcontractors and persons employed on site will not cause unnecessary noise from engine revving etc; and 	
		 temporary hoardings or noise barriers around worksites or noisy activities will be provided where 	

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		necessary to ensure the construction noise limits/thresholds specified in the NVMP (Document 7.9) are met.	
Receptors up to 500 m from the boundary of the substation working areas.	Noise from preparation and use of construction compounds for the OHL and substations.	 The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700 on Sundays. Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. Tunnelling works may take place outside of the core working hours subject to the following restrictions: blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 13:00 on Saturdays; and surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays. 	Measure GP11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).
		These measures relate to community engagement and public information. They include the provision of a 24	Measures GP21 to GP27 of the CEMP (Document 7.4)
Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
---	------------------	---	--
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		hour free telephone hotline and a project website which would be established and managed by the community relations team. Also included is a procedure for dealing with complaints. Full details are provided in the CEMP (Document 7.4).	which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		A NVMP (Document 7.9) has been produced which sets out the noise and vibration control measures and other processes, that would be employed by the contractor to minimise adverse noise and vibration effects.	Measure NV11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which
			Requirement 6 of the DCO (Document 2.1).
		Noise monitoring (and vibration monitoring where appropriate) would be carried out at or around residential properties or any other identified sensitive structures	Measure NV12 of the CEMP (Document 7.4) which is secured through Requirement

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		during the construction phase to check compliance with noise (and vibration) limits as set out in the CEMP (Document 7.4) and the NVMP (Document 7.9)	6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		The proposed hours of work during the construction phase are set out in measure Section 2.18 and Requirement 8 (Document 2.1). If necessary, 'Prior consent for work on construction sites' would be sought by the contractor under the Section 61 process	Measures NV13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
			NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Standard best practice construction working methods would be adopted which include: all vehicles, plant and equipment associated with the construction works will be properly maintained in 	Measure NV14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document

Page	607
. ~ge	

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 good efficient working order, fitted with effective exhaust silencers and operated in such a manner to avoid causing excessive noise emissions; low noise generators and quieter plant and equipment will be used, as far as reasonably practicable; as far as reasonably practicable, all major compressors will be 'sound-reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers; static plant (such as pumps, compressors and generators) and equipment liable to create noise and/or vibration whilst in operation will, as far as reasonably practicable, be positioned so as to cause minimum noise disturbance, i.e. located away from sensitive receptors; audible warning systems, such as vehicle reversing sizens, will normally be set to as low a setting as is 	2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		compatible with safety requirements; white noise reversing alarms will be used where it is considered safe to do so;	
		 loading and unloading activities will be located as far a reasonably practicable away from sensitive receptors; 	
		 construction traffic movements will be undertaken in accordance with the Outline Construction Traffic Management Plan (Document 7.5); 	
		 access tracks will be well maintained during construction works and any potholes will be filled in and any uneven surfaces smoothed out as soon as reasonably practicable; 	
		 plant and equipment will be shut down when not in use; 	
		 drop heights of materials will be minimised; 	
		• employees, subcontractors and persons employed on site will not cause unnecessary noise from engine revving etc; and	
		 temporary hoardings or noise barriers around worksites or noisy activities will be provided where 	

Table 10: Summary of	of Construction N	oise and Vibration Control and Management Measures	& Mitigation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		necessary to ensure the construction noise limits/thresholds specified in the NVMP (Document 7.9) are met.	
Receptors 250 m from the order limits excluding a small section around the Menai Strait where no access tracks are proposed.	Noise and Vibration from installation of access tracks, culverts and bridges.	 The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700 on Sundays. Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. Tunnelling works may take place outside of the core working hours subject to the following restrictions: blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 13:00 on Saturdays; and surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays. 	Measure GP11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).
		These measures relate to community engagement and public information. They include the provision of a 24	Measures GP21 to GP27 of the CEMP (Document 7.4)

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		hour free telephone hotline and a project website which would be established and managed by the community relations team. Also included is a procedure for dealing with complaints. Full details are provided in the CEMP (Document 7.4).	 which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1). 	
		A NVMP (Document 7.9) has been produced which sets out the noise and vibration control measures and other processes, that would be employed by the contractor to minimise adverse noise and vibration effects.	Measure NV11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		The proposed hours of work during the construction phase are set out in measure Section 2.18 and Requirement 8 (Document 2.1). If necessary, 'Prior consent for work on construction sites' would be sought by the contractor under Section 61 process	Measures NV13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through	

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Standard bast practice construction working methods	Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).	
		 standard best practice construction working methods would be adopted which include: all vehicles, plant and equipment associated with the construction works will be properly maintained in good efficient working order, fitted with effective exhaust silencers and operated in such a manner to avoid causing excessive noise emissions; low noise generators and quieter plant and equipment will be used, as far as reasonably practicable; 	(Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 as far as reasonably practicable, all major compressors will be 'sound-reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use 		

Table 10: Summary of	of Construction N	oise and Vibration Control and Management Measures	& Mitigation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		and all ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers;	
		 static plant (such as pumps, compressors and generators) and equipment liable to create noise and/or vibration whilst in operation will, as far as reasonably practicable, be positioned so as to cause minimum noise disturbance, i.e. located away from sensitive receptors; 	
		 audible warning systems, such as vehicle reversing sirens, will normally be set to as low a setting as is compatible with safety requirements; white noise reversing alarms will be used where it is considered safe to do so; 	
		 loading and unloading activities will be located as far a reasonably practicable away from sensitive receptors; 	
		 construction traffic movements will be undertaken in accordance with the Outline Construction Traffic Management Plan (Document 7.5); 	
		 access tracks will be well maintained during 	

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 construction works and any potholes will be filled in and any uneven surfaces smoothed out as soon as reasonably practicable; plant and equipment will be shut down when not in use; drop heights of materials will be minimised; employees, subcontractors and persons employed on site will not cause unnecessary noise from engine revving etc; and temporary hoardings or noise barriers around worksites or noisy activities will be provided where necessary to ensure the construction noise limits/thresholds specified in the NVMP (Document 7.9) are met. 	
Receptors up to 250 m from the edge of each pylon working area	Noise from installation of pylon working areas and works within,	The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700 on Sundays. Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays.	Measure GP11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
i (((((including pylon construction, conductor stringing and dismantling of existing pylons.	 Tunnelling works may take place outside of the core working hours subject to the following restrictions: blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 13:00 on Saturdays; and surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays. 	Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).	
		These measures relate to community engagement and public information. They include the provision of a 24 hour free telephone hotline and a project website which would be established and managed by the community relations team. Also included is a procedure for dealing with complaints. Full details are provided in the CEMP (Document 7.4).	Measures GP21 to GP27 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).	

Page	615
	•••

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		A NVMP (Document 7.9) has been produced which sets out the noise and vibration control measures and other processes, that would be employed by the contractor to minimise adverse noise and vibration effects.	Measure NV11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		A NVMP (Document 7.9) has been produced which sets out the noise and vibration control measures that would be employed by the contractor to minimise adverse noise and vibration effects.	Measure NV11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).

Page	616	
. ~g•	• • •	

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Noise monitoring (and vibration monitoring where appropriate) would be carried out at or around residential properties or any other identified sensitive structures during the construction phase to check compliance with noise (and vibration) limits as set out set out in the CEMP (Document 7.4) and the NVMP (Document 7.9).	Measure NV12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		The proposed hours of work during the construction phase are set out in Section 2.18 and Requirement 8 (Document 2.1). If necessary, 'Prior consent for work on construction sites' would be sought by the contractor under Section 61 process	Measures NV13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
			Construction hours which are

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			secured by Requirement 8 of the DCO (Document 2.1).
		 Standard best practice construction working methods would be adopted which include: all vehicles, plant and equipment associated with the construction works will be properly maintained in good efficient working order, fitted with effective exhaust silencers and operated in such a manner to avoid causing excessive noise emissions; low noise generators and quieter plant and equipment will be used, as far as reasonably practicable; as far as reasonably practicable, all major compressors will be 'sound-reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers; 	Measure NV14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		 static plant (such as pumps, compressors and 	

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		generators) and equipment liable to create noise and/or vibration whilst in operation will, as far as reasonably practicable, be positioned so as to cause minimum noise disturbance, i.e. located away from sensitive receptors;	
		 audible warning systems, such as vehicle reversing sirens, will normally be set to as low a setting as is compatible with safety requirements; white noise reversing alarms will be used where it is considered safe to do so; 	
		 loading and unloading activities will be located as far a reasonably practicable away from sensitive receptors; 	
		 construction traffic movements will be undertaken in accordance with the Outline Construction Traffic Management Plan (Document 7.5); 	
		 access tracks will be well maintained during construction works and any potholes will be filled in and any uneven surfaces smoothed out as soon as reasonably practicable; 	
		 plant and equipment will be shut down when not in 	

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 use; drop heights of materials will be minimised; employees, subcontractors and persons employed on site will not cause unnecessary noise from engine revving etc; and temporary hoardings or noise barriers around worksites or noisy activities will be provided where necessary to ensure the construction noise limits/thresholds specified in the NVMP (Document 7.9) are met. 	
		 Damage to or contamination of OHL conductors during the handling and stringing can lead to a potential increase in noise once the OHL is energised. To reduce the likelihood of damage of contamination of conductors the, following will be implemented: quality assurance through manufacturing and transportation to avoid damage to OHL conductors; 	Measure NV21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through
		 and ensuring that conductors are kept clean and free of surface contaminants during stringing / installation. 	Requirement 6 of the DCO (Document 2.1).

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		For whatever ground conditions and commensurate foundation construction is required for each pylon, the contractor will employ the quietest plant and methods of construction appropriate to the foundation type required for the ground conditions.	Measure NV22 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
Receptors 1 km from the edge of the TCC	Noise from activities within the TCC including preparation, construction of the shafts and works associated with tunnelling.	 The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700 on Sundays. Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. Tunnelling works may take place outside of the core working hours subject to the following restrictions: blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 13:00 on Saturdays; and 	Measure GP11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays. 	
		These measures relate to community engagement and public information. They include the provision of a 24 hour free telephone hotline and a project website which would be established and managed by the community relations team. Also included is a procedure for dealing with complaints. Full details are provided in the CEMP (Document 7.4).	Measures GP21 to GP27 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		A NVMP (Document 7.9) has been produced which sets out the noise and vibration control measures that would be employed by the contractor to minimise adverse noise and vibration effects.	Measure NV11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which
			Requirement 6 of the DCO

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			(Document 2.1).
		Noise and vibration monitoring will be carried out as appropriate at or around residential properties or any other identified sensitive structures during the construction phase to check compliance with noise and vibration limits and thresholds as set out in the NVMP (Document 7.9)	Measure NV12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		The proposed hours of work during the construction phase are set out in measure Section 2.18 and Requirement 8 (Document 2.1). If necessary, 'Prior consent for work on construction sites' would be sought by the contractor under Section 61 process.	Measures NV13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO

Table 10: Summary	of Construction N	oise and Vibration Control and Management Measures	& Mitigation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			(Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1).
		The proposed hours of work during the construction phase are set out in section 2.2 of the CEMP (Document 7.4) and Requirement 8 (Document 2.1). If necessary, consent will be sought by the contractor under Section 61 of the Control of Pollution Act 1974 (CoPA) as described in the NVMP (Document 7.9).	Measure NV12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		 Standard best practice construction working methods would be adopted, which include: all vehicles, plant and equipment associated with the construction works will be properly maintained in good efficient working order, fitted with effective 	Measure NV14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 exhaust silencers and operated in such a manner to avoid causing excessive noise emissions; low noise generators and quieter plant and equipment will be used, as far as reasonably practicable; as far as reasonably practicable, all major compressors will be 'sound-reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers; static plant (such as pumps, compressors and generators) and equipment liable to create noise and/or vibration whilst in operation will, as far as reasonably practicable, be positioned so as to cause minimum noise disturbance, i.e. located away from sensitive receptors; audible warning systems, such as vehicle reversing sirens, will normally be set to as low a setting as is compatible with safety requirements; white noise 	NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 reversing alarms will be used where it is considered safe to do so; loading and unloading activities will be located as far a reasonably practicable away from sensitive receptors; construction traffic movements will be undertaken in accordance with the Outline Construction Traffic Management Plan (Document 7.5); access tracks will be well maintained during construction works and any potholes will be filled in and any uneven surfaces smoothed out as soon as reasonably practicable; plant and equipment will be shut down when not in use; drop boights of matorials will be minimised; 	
		 drop heights of materials will be minimised; employees, subcontractors and persons employed on site will not cause unnecessary noise from engine revving etc; and temporary hoardings or noise barriers around worksites or noisy activities will be provided where necessary to ensure the construction noise 	

Table 10: Summary of	of Construction N	oise and Vibration Control and Management Measures	& Mitigation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		limits/thresholds specified in the NVMP (Document 7.9) are met.	
		Surface drilling and curtain grouting associated with shaft construction is limited to Monday to Fridays 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays.	Measure NV31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		 During the drill and blast activities, the following measures will be implemented to limit noise and vibration: During shaft construction a specially designed blast mat would be placed on the base of the shaft prior to each blast to confine the generated noise and vibration among other purposes. Blasting would only take place between 10:00 hrs 	Measure NV32 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		and 16:00 hrs Monday to Friday and between 10:00 hrs and 13:00 hrs on Saturdays as set in in GP11.	(Document 2.1).
		 Local residents and businesses would be given advanced warning of when periods of blasting would take place. 	
		 Vibration and air overpressure from blasting will be assessed and controlled by the appropriate contractor. 	
		 Air overpressure and vibration monitoring will be carried out to determine levels relative to any required noise or vibration limits as required. 	
		 Will be implemented to prevent exceedance of limits/thresholds as set out in the NVMP (Document 7.9). 	
		 Blast design measures will include refraining from simultaneous blasting (i.e. blasting from both ends of the tunnel at the same time), whilst beneath the Menai Strait. 	
		 Other design measures include not exceeding the maximum total blast weight per round for drill and blast of the tunnel will not exceed 300 kg under the 	

	Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured		
	 Menai Strait. As stipulated in the design, and not exceeding the maximum number of blasts for drill and blast of the tunnel per 24 hours will not exceed six. 			
	Ground vibration as a result of blasting, would be controlled such that it would not exceed a peak particle velocity (PPV) of 6 mm.s-1 in 95% of all blasts measured over any six month period at the nearest sensitive receptor. Additionally, no individual blast would exceed a PPV of 10 mm.s-1 at the nearest sensitive receptor. Limits will also be placed on blasting activity to ensure effects on marine mammals and fish are no greater than those reported in ES Chapter 9 (Document 5.9).	Measure NV33 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).		
	A power supply will be provided to the Braint and Tŷ Fodol construction compounds to power tunnelling activities. Generators will only be used as back up or in the case of an emergency.	Measure NV34 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).		
	of Effect	of EffectControl and Management Measures & Mitigation MeasuresMenai Strait.••As stipulated in the design, and not exceeding the maximum number of blasts for drill and blast of the tunnel per 24 hours will not exceed six.Ground vibration as a result of blasting, would be controlled such that it would not exceed a peak particle velocity (PPV) of 6 mm.s-1 in 95% of all blasts measured over any six month period at the nearest sensitive receptor. Additionally, no individual blast would exceed a PPV of 10 mm.s-1 at the nearest sensitive receptor. Limits will also be placed on blasting activity to ensure effects on marine mammals and fish are no greater than those reported in ES Chapter 9 (Document 5.9).A power supply will be provided to the Braint and Tŷ Fodol construction compounds to power tunnelling activities. Generators will only be used as back up or in the case of an emergency.		

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			is secured through Requirement 6 of the DCO (Document 2.1).
		Works within the construction compounds at Braint and $T\hat{y}$ Fodol, where 24-hour working will be required, will be subject to full noise predictions and consequential Section 61 applications which will demonstrate the applied BPM.	Measure NV35 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
			NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		Blasts will be designed to not exceed a level of 120 dB (Lin) at the closest NVSRs as far as is reasonably practicable.	Measure NV36 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
			NVMP (Document 7.9) which is secured through

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
			Requirement 6 of the DCO (Document 2.1).	
Receptors 50 m from the horizontal LOD for the tunnel for the TBM method and 100 m from the horizontal LOD for the D&B Method	Noise and vibration from underground tunnelling works.	Surface vibration from underground works, excluding TBM and drill and blast, but including the temporary construction railway, would be controlled such that it would not exceed noise and vibration a levels/thresholds at nearest sensitive receptors as set out in the NVMP (Document 7.9).	Measure NV36 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 The following measure will be applied to the temporary construction railway (TCR) within the tunnel where identified as being necessary: smooth rails (reconditioned or new rails without corrugations or discrete irregularities) will be installed at the start of the works with joints which won't exceed a variation in rail height difference of than 2 	Measure NV37 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO	

Table 10: Summary of	of Construction N	oise and Vibration Control and Management Measures	& Mitigation Measures
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 mm; adequate elasticity in the track support system will be provided in order to reduce the transmission of vibration and groundborne noise from the passage of rail vehicles, for example the use of resilient rail pads in the fastening system between the rails and the sleepers; the locomotive speed will be appropriately restricted; a maintenance programme will be instigated that ensures the condition of the track does not deteriorate over time thereby causing excess noise or vibration levels; and appropriate noise and vibration monitoring will be carried prior to and during tunnelling and during the initial use of the TCR. 	(Document 2.1).
		Residents within 100 m of the tunnel alignment will be provided with written notification in advance of the tunnelling activities	Measure NV38 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
			NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
Receptors 250 m from either side of each road link on which construction traffic would be generated.	Noise from traffic on the access tracks	 The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700 on Sundays. Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. Tunnelling works may take place outside of the core working hours subject to the following restrictions: blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 13:00 on Saturdays; and surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays. 	Measure GP11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction which are secured by Requirement 8 of the DCO (Document 2.1).

Table 10: Summary of	Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		These measures relate to community engagement and public information. They include the provision of a 24 hour free telephone hotline and a project website which would be established and managed by the community relations team. Also included is a procedure for dealing with complaints. Full details are provided in the CEMP (Document 7.4).	Measures GP21 to GP27 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).	
		A NVMP (Document 7.9) has been produced which sets out the noise and vibration control measures, and other processes, that would be employed by the contractor to minimise adverse noise and vibration effects.	Measure NV11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Noise and vibration monitoring will be carried out as appropriate at or around residential properties or any other identified sensitive structures during the construction phase to check compliance with the construction noise and vibration limits and thresholds as set out in the NVMP (Document 7.9).	Measure NV12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).
		The proposed hours of work during the construction phase are set out in section 2.2 of the CEMP (Document 7.4) and Requirement 8 (Document 2.1). If necessary, consent will be sought by the contractor under Section 61 of the Control of Pollution Act 1974 (CoPA) as described in the NVMP (Document 7.9).	Measures NV13 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 Standard best practice construction working methods would be adopted, which include: all vehicles, plant and equipment associated with the construction works will be properly maintained in good efficient working order, fitted with effective exhaust silencers and operated in such a manner to avoid causing excessive noise emissions; low noise generators and quieter plant and equipment will be used, as far as reasonably practicable; as far as reasonably practicable, all major compressors will be 'sound-reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers; static plant (such as pumps, compressors and generators) and equipment liable to create noise and/or vibration whilst in operation will, as far as reasonably practicable, be positioned so as to cause 	Measure NV14 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 minimum noise disturbance, i.e. located away from sensitive receptors; audible warning systems, such as vehicle reversing sirens, will normally be set to as low a setting as is compatible with safety requirements; white noise reversing alarms will be used where it is considered safe to do so; loading and unloading activities will be located as far a reasonably practicable away from sensitive receptors; construction traffic movements will be undertaken in accordance with the Outline Construction Traffic Management Plan (Document 7.5); access tracks will be well maintained during construction works and any potholes will be filled in and any uneven surfaces smoothed out as soon as reasonably practicable; plant and equipment will be shut down when not in use; drop heights of materials will be minimised; 	
	1		

Table 10: Summary of Construction Noise and Vibration Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
		 site will not cause unnecessary noise from engine revving etc; and temporary hoardings or noise barriers around worksites or noisy activities will be provided where necessary to ensure the construction noise limits/thresholds specified in the NVMP (Document 7.9) are met. 				
Receptors 250 m from either side of each road link on which construction traffic would be generated.	Noise from traffic on the access tracks	No Mitigation Required				

11 Operational Noise

11.1 INTRODUCTION

11.1.1 Control and management measures and mitigation measures required to mitigate the potential operational noise effects from the operation, of the Proposed Development are set out in section 9 of Chapter 16 Operational Noise (**Document 5.16**) and Table 11 identifies where each of these measures are secured.

Relevant Mitigation by Design

- 11.1.2 The potential for noise emission from the conductor system has been mitigated through the DCO design choice. The chosen configuration is one of the quietest conductor bundle formations that can be deployed on the National Grid transmission system that meets the rating requirements. Further justification for the chosen conductor system is given in the Design Report (**Document 7.17**) and Back Check Report (**Document 7.18**).
- 11.1.3 Consideration of operational noise impacts have been considered when determining the pylon siting and route alignment. Further details on the consideration of pylon siting is given in the Design Report (**Document 7.17**).

11.2 OPERATIONAL NOISE CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

11.2.1 Table 11 identifies where each of these measures are secured.

Table 11: Summary of Operational Noise and Vibration Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
Receptors in proximity to the route	Conductor Noise from OHL	 Damage to or contamination of overhead line (OHL) conductors during the handling and stringing can lead to a potential increase in operational noise once the OHL is energised. To reduce the likelihood of damage or contamination of conductors the following will be implemented: quality assurance through manufacturing and transportation to avoid damage to OHL conductors; and ensuring that conductors are kept clean and free of surface contaminants during stringing/installation. 	Measure NV21 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).			
Receptors in proximity to the route	Insulator and Conductor Noise from the OHL	All fixtures and fittings, including insulators that would be installed on the proposed OHL infrastructure would have undergone Type Registration. Best Practicable Means would be followed for the selection of the most appropriate insulator type, which will include consideration of hydrophobic coatings to reduce audible noise.	Whilst this is not secured directly within the DCO (Document 2.1). All fixtures and fittings would have undergone Type Registration in accordance with National Grids			

Table 11: Summary of Operational Noise and Vibration Control and Management Measures & Mitigation Measures						
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured			
			guidelines.			
Receptors within the THH study area	Operational noise effects from the THH	Mitigated through appropriate design and louvre orientation. Equipment at the THH, including fans, would be selected based on the noise emissions sufficient to meet the committed noise levels at receptors, with the application of attenuators as required for the tunnel and stairwell ventilation fans.	Requirement 19 of the DCO (Document 2.1)			
Receptors within the Pentir Substation study area	Operational noise effects from Pentir Substation	Noise from the shunt reactor would be minimised through design and selection, following guidance in National Grid's guidelines for procurement of new reactive plant. The shunt reactor will therefore not exceed the noise levels as set out in this assessment.	Whilst this is not secured directly within the DCO (Document 2.1). The shut reactor would be in accordance with National Grids guidelines for procurement of new reactive plant.			
12 Socio Economics

12.1 INTRODUCTION

- 12.1.1 There are no control and management measures and mitigation measures specific to potential socio-economic effects from the construction, operation, maintenance and decommissioning of the Proposed Development see section 9 of Chapter 17 Socio Economics and Tourism (**Document 5.17**).
- 12.1.2 Measures that would serve to mitigate the adverse effects of the Proposed Development are presented in sections 2-11 and 13 of this document. All of these measures relate to the various sources of effects considered by other technical chapters (construction noise, traffic and transport, etc), and given that the socio-economic assessment draws upon the residual (mitigated) effects reported in these chapters they are not repeated here.

Relevant Mitigation by Design

- 12.1.3 National Grid has published '*Our Approach to the Design and Routeing of New Electricity Transmission Lines*' (Ref 17.51). This document sets out how National Grid will deliver new infrastructure projects and the process for making and validating decisions based on detailed environmental assessment and feedback from the public and stakeholders.
- 12.1.4 Of critical importance to routeing new electricity infrastructure are the Holford Rules. The general principles of the rules are set out below:
 - avoid altogether, if possible, the major areas of highest amenity value by planning the general route of the line, even if total mileage is somewhat increased in consequence (National Parks, Areas of Outstanding Natural Beauty, Heritage Coasts and World Heritage sites);
 - avoid smaller areas of high amenity value, or scientific interest by deviation, provided that this can be done without using too many angle towers;

- where possible choose routes with the least impact on sites of cultural heritage; and
- avoid routeing close to residential areas.
- 12.1.5 The implementation of the approach to routeing is described in detail in the following DCO documents:
 - Draft Route Alignment report (**Document 9.5**);
 - Preferred Route Option Selection report (**Document 9.4**); and
 - Design Report (**Document 7.17**).
- 12.1.6 In addition to the approach outlined above, and specific to this project, National Grid has undertaken additional activities to seek to safeguard the unique nature of the area, including the importance of Welsh cultural identity and language, the valued regional landscape and the significance of tourism to the local economy.
- 12.1.7 In additional to this socio-economic assessment, the following activities and assessments have been completed:
 - The Welsh Language Impact Assessment (**Document 5.26**);
 - Well-being Assessment (**Document 5.27**), the development of which included engagement with key stakeholders;
 - A Visitor Survey (Appendix 17.3 (**Document 5.27.2.3**));
 - A Business Survey (Appendix 17.4 (**Document 5.27.2.4**));
 - Meeting local people to discuss their concerns; and
 - Three stages of Public Consultation.

12.2 SOCIO-ECONOMIC CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

- 12.2.1 No mitigation measures are required that are specific to the assessment of socio-economic effects.
- 12.2.2 A OCTMP is provided in **Document 7.5** which is secured by Requirement 6 of the DCO (**Document 2.1**).
- 12.2.3 Management measures for PRoW closure are provided in Table 3.2 of the Public Rights of Way Management Plan (**Document 7.6**). The DCO would grant the necessary powers to temporarily stop up a PRoW affected by the Proposed Development and put in place the diversions listed in draft DCO Schedule 8, although the intention is to keep the majority of routes open via management measures. Where temporary closure is required, National Grid would endeavour to ensure that durations are minimised as far as possible and that the PRoW would be reopened at the earliest opportunity.
- 12.2.4 Control and management measures and mitigation measures detailed in this section of the document relate to the various sources of effects considered by other technical chapters, and given the Socio-Economic chapters draws upon the residential (mitigated) effects reported by other technical chapters, they have not all been repeated here.
- 12.2.5 Some of the standard control and management measures that are included in the CEMP and relevant to the socio-economic receptors and effects are identified in Table 13. Only those measures relating to the Welsh Language (GP31 to GP34) are necessary for the mitigation of effects.
- 12.2.6 Safety measures would be implemented where required, including fencing, signage and traffic management measures.
- 12.2.7 Table 13 identifies where each of these measures are secured.

Table 13: Summary of Socio-Economic Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Receptors up to 500 m from the boundary of construction compounds, 250 m from the edge of each working area, 250 m from the order limits and 1 km from the edge of the TCC	Noise from preparation and use of construction compounds for the OHL and substations, and construction of the substation extensions.	 The core working hours will be between the hours of 0700 to 1900 hrs Monday to Saturday and between 0900 and 1700 on Sundays. Percussive piling works will be limited to 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. Tunnelling works may take place outside of the core working hours subject to the following restrictions: blasting at the tunnel shaft locations are limited to 10:00 to 16:00 hours Monday to Friday and 10:00 to 13:00 on Saturdays; and surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays. CEMP measures GP21-GP27 sets out communication measures, including a 24-hour free telephone and project 	Measure GP11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Construction hours which are secured by Requirement 8 of the DCO (Document 2.1). Measure GP21 – GP27 of the CEMP (Document 7.4) which is	
		website, which would be available throughout construction.	secured through Requirement 6 of the DCO (Document 2.1).	

Table 13: Summary of Socio-Economic Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
Communities, tourism, commercial receptors and residential receptors	Effects on the Welsh Language	The contractor will be a member of the Considerate Constructors Scheme (or similar) and will adhere to a Code of Conduct. The Code of Conduct will include sections on respecting the environment, respecting communities and respecting Welsh language and culture.	Measure GP31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Information will be provided to workers on language awareness, local linguistic and cultural context and how to demonstrate linguistic courtesy and cultural sensitivity.	Measure GP32 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		Site inductions and toolbox talks, will include information about Welsh language words and phrases, and information on resources for learning Welsh.	Measure GP33 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		The contractor will establish a process to monitor where workers are staying by type of accommodation and location. The results of this monitoring will be provided to National Grid	Measure GP34 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 13: Summary of Socio-Economic Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
VSAA	Direct change to landscape character Perceptual change to landscape character	CEMP measures GP85-GP86 sets out lighting and visual intrusion measures e.g. directional lighting.	Measure GP85 and GP86 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Human Health Receptors	Reduction of air quality disturbance to human human health receptors and residential properties	CEMP measures AE11 – AE41 sets out air quality measures e.g dust control measures.	Measure AE11 – AE41 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
Receptors up to 500 m from the boundary of construction	Noise disturbance during the construction stage i.e. from	CEMP measure NV11 – NV31 sets out noise control measures e.g. loading/unloading areas would be located as far as reasonably possible from residential properties.	Measure NV11-NV31 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 13: Summary of Socio-Economic Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
compounds	preparation and use of construction compounds for the OHL and substations, and construction of the substation extensions.		NVMP (Document 7.9) which is secured through Requirement 6 of the DCO (Document 2.1).	

13 Agriculture

13.1 INTRODUCTION

13.1.1 Control and management measures and mitigation measures required to mitigate the potential agricultural effects from the construction, operation, maintenance and decommissioning of the Proposed Development are set out in section 9 of Chapter 18 Agriculture (**Document 5.18**) and Table 12 identifies where each of these measures are secured.

Relevant Mitigation by Design

- 13.1.2 These are measures that have been incorporated into the design of the Proposed Development to minimise or prevent potential impacts. These measures include the routeing of the OHL and the site selection for THH/CSECs. For example, where there is an area of peat soil (Adventurers' 1) in Section C the proposed access track shown on the Construction Plans (**Document 5.4.1.1**) has been routed around the field, and the permanent infrastructure works within this field have been reduced as far as practicable to limit the amount of ground disturbance. This commitment is included in the Schedule of Environmental Commitments (**Document 7.4.2.1**).
- 13.1.3 Through the iterative design process, which also included a review of consultation responses, the Provisional ALC mapping information (Ref 18.10) was used in conjunction with the LandIS NATMAP data and Soils and their use in Wales to identify preferred temporary works locations in non-agricultural or non Best and Most Versatile (BMV) land as far as practicable, whilst also taking into account engineering and other environmental considerations. As a result, the majority of temporary disturbance occurs on non-BMV land. Due to the dominance of two soil types within the Study Area (accounting for 95% of soils within the Study Area), it can be assumed that the distribution of soil types subject to temporary disturbance and land take is unlikely to vary significantly from that presented below due to the flexibility afforded by the draft DCO (Document 2.1) (see paragraph 7.1.4 and Chapter 6 EIA Methodology and Basis of Assessment (Document 5.6)).
- 13.1.4 At the Tŷ Fodol THH/CSEC site, the soil survey identified that there was the potential to reduce the impact to BMV land through the careful siting of

infrastructure. Careful siting and considered design has enabled the majority of T \hat{y} Fodol THH/CSEC (55.2%) to be located on non-BMV land (Subgrade 3b), minimising permanent BMV land take as far as was practicable.

13.1.5 Although the routeing of temporary access tracks as shown on Figure 4.1 Construction Plans (**Document 5.4.1.1**) has been designed to follow field boundaries wherever possible, it is acknowledged that the flexibility which would be afforded by the DCO allows for these tracks to be routed anywhere within the Order Limits, other than any areas restricted through a commitment in the Schedule of Environmental Commitments (**Document 7.4.2.1**). However, should track realignment within the Study Area be necessary, such re-routeing would consider the potential agricultural effects and, wherever practicable, the alignment would continue to be along boundaries, in field margins or in areas of non-agricultural land to minimise agricultural impacts.

13.2 AGRICULTURE CONTROL AND MANAGEMENT MEASURES AND MITIGATION MEASURES

- 13.2.1 Table 13 identifies where each of these measures are secured.
- 13.2.2 There are no mitigation measures required to address effects related to agricultural land use and soils.

Table 13: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		Prior to construction, more site/soil specific measures to protect soils will be set out in a detailed SMP, based upon the outline document (Document 7.10) and supplemented, by additional survey data, where required.	Measure SM11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement 7 of the DCO (Document 2.1).
Soils	Damage to soil resources	An OSMP (Document 7.10) has been produced and includes mitigation measures in accordance with Defra guidance.	Measure SM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).OSMP (Document 7.10) which is secured by Requirement 7 of the DCO (Document 2.1).
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out on land within working areas. This will include a photographic record,	Measure R2 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO

Page	651

Table 13: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures				
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		written description and topographical survey, which will be used to ensure appropriate reinstatement of land.	(Document 2.1).	
		Reinstatement will be in accordance with the relevant parts of the BMS (Document 7.7) include making good any damage or disturbance to any soil structure, native or other planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.	Measure R3 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). Reinstatement Schemes are secured by Requirement 13 of the DCO (Document 2.1).	
Soils	Loss of soil resources	Prior to construction, more site/soil specific measures to protect soils will be set out in a detailed SMP, based upon the outline document (Document 7.10) and supplemented, by additional survey data, where required.	Measure SM11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is secured by Requirement 7 of the DCO (Document 2.1).	
		An OSMP (Document 7.10) has been produced and includes mitigation measures in accordance with Defra	Measure SM12 of the CEMP (Document 7.4) which is secured	

Page 052	e 652	Page
----------	-------	------

Table 13: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		guidance.	through Requirement 6 of the DCO (Document 2.1).
			OSMP (Document 7.10) which is secured by Requirement 7 of the DCO (Document 2.1).
		 The Dust Management Plan (DuMP) will contain the following measures in relation to storage and handling of materials; handling and transfer of soil and dusty materials will be controlled to minimise dust generation. During material handling operations the number of handling operations will be kept to a minimum to ensure that dusty material is not moved or handled unnecessarily; 	Measure AE15 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 sand and other aggregates will be covered, bulk cement and other fine powder materials will be delivered in enclosed tankers and stored with suitable emission control systems to prevent escape of material; for smaller supplies of fine powder materials bags will be sealed after use and stored appropriately to prevent 	

Table 13: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 dust; minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; when loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, material handling methods will be used that minimise the generation of airborne dust. Drop heights will be kept to a minimum. Where there are visible dust issues and under prolonged dry conditions sources will be dampened down; soils will be managed in line with measure SM12; and avoid scabbling (roughening of concrete surfaces), if possible. 	
		 To prevent sediment laden run-off entering watercourses/ standing water bodies the following measures will be implemented, where necessary: soils will not be stockpiled within 8 m of surface water features, will not block surface runoff pathways, and would preferably be located in Flood Zone A; with the exception of stockpiles with a lifetime of less 	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 13: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		than 3 months, all stockpiles would be seeded to reduce runoff, those in place for shorter durations would be covered to reduce the risk of silty runoff;	
		• further runoff control measures will be provided (e.g. buffer strips, earth bunds, silt fences, grips, settlement ponds and straw bales, or other proprietary treatment etc.) as required on a site-specific basis;	
		 where works are adjacent to watercourses/water bodies subject to WE31, appropriate barriers will be installed temporarily along their edge to prevent plant tracking down slopes and damaging riparian vegetation or to prevent silt laden runoff flowing untreated into the watercourse/water body; 	
		 mud will be controlled at site entry and exit points using wheel cleaning areas and road sweepers as appropriate; 	
		 tools and plant will be washed out and cleaned in designated areas within the construction compounds where runoff is isolated for treatment before discharge to watercourse/ground or sewer under consent from National Resources Wales (NRW); and construction Sustainable Drainage Systems (SuDS) 	

Table 13: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		(such as settlement lagoons or other temporary attenuation) will be used if necessary and where appropriate to do so.	
		 Over-pumping around culvert working areas will be carefully managed through the application of silt management measures to prevent suspension of sediment or contamination. 	
		 discharges to watercourses would be permitted by NRW, where required, in accordance with the requirement of the Environmental Permitting Regulations. 	
Agricultural Im Iandholding ch	Impacts to landholding due to change in land-use	Prior to construction, more site/soil specific measures to protect soils will be set out in a detailed SMP, based upon the outline document (Document 7.10) and supplemented, by additional survey data, where required.	Measure SM11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). OSMP (Document 7.10) which is
			secured by Requirement 7 of the DCO (Document 2.1).
		An OSMP (Document 7.10) has been produced and includes mitigation measures in accordance with Defra	Measure SM12 of the CEMP (Document 7.4) which is secured

Table 13: Su	: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures		
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		guidance.	through Requirement 6 of the DCO (Document 2.1).
			OSMP (Document 7.10) which is secured by Requirement 7 of the DCO (Document 2.1).
		 The Dust Management Plan (DuMP) will contain the following measures in relation to storage and handling of materials; handling and transfer of soil and dusty materials will be controlled to minimise dust generation. During material handling operations the number of handling operations will be kept to a minimum to ensure that dusty material is not moved or handled unnecessarily; 	Measure AE15 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 sand and other aggregates will be covered, bulk cement and other fine powder materials will be delivered in enclosed tankers and stored with suitable emission control systems to prevent escape of material; for smaller supplies of fine powder materials bags will be sealed after use and stored appropriately to prevent 	

Page 057	age 6	57
----------	-------	----

Table 13: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		 dust; minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; when loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, material handling methods will be used that minimise the generation of airborne dust. Drop heights will be kept to a minimum. Where there are visible dust issues and under prolonged dry conditions sources will be dampened down; soils will be managed in line with measure SM12; and 	
		 avoid scabbling (roughening of concrete surfaces), if possible. 	
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out on land within working areas. This will include a photographic record, written description and topographical survey, which will be used to ensure appropriate reinstatement of land.	Measure R2 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 13: Su	mmary of Land Use a	and Agriculture Control and Management Measures & Mitigation Measures		
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		Prior to construction, more site/soil specific measures to protect soils will be set out in a detailed SMP, based upon the outline document (Document 7.10) and supplemented, by additional survey data, where required.	Measure SM11 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
			OSMP (Document 7.10) which is secured by Requirement 7 of the DCO (Document 2.1).	
Agri- Environmen t Schemes (AES)	Loss of eligibility for AES	An OSMP (Document 7.10) has been produced and includes mitigation measures in accordance with Defra guidance.	Measure SM12 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
			OSMP (Document 7.10) which is secured by Requirement 7 of the DCO (Document 2.1).	
		To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out on land within working areas. This will include a photographic record, written description and topographical survey, which will be	Measure R2 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	

Table 13: Su	3: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures		
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		used to ensure appropriate reinstatement of land.	
		A Drainage Management Plan (DMP) will be prepared prior to the commencement of works. The DMP will specify measures to minimise the impact of the construction on existing drainage systems.	Measure WE51 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1). DMP is a plan which is secured by Requirement 7 of the DCO (Document 2.1).
Agricultural land drainage	Impacts to agricultural land drainage	The DMP will specify appropriate design and control measures; these will be developed following detailed drainage investigations and hydrological assessments, which will determine potential location specific risks.	Measure WE52 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).
		 To prevent sediment laden run-off entering watercourses/ standing water bodies the following measures will be implemented, where necessary: soils will not be stockpiled within 8 m of surface water features, will not block surface runoff pathways, and would preferably be located in Flood Zone A; with the exception of stockpiles with a lifetime of less 	Measure WE55 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).

Table 13: Su	able 13: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures		
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		than 3 months, all stockpiles would be seeded to reduce runoff, those in place for shorter durations would be covered to reduce the risk of silty runoff;	
		• further runoff control measures will be provided (e.g. buffer strips, earth bunds, silt fences, grips, settlement ponds and straw bales, or other proprietary treatment etc.) as required on a site-specific basis;	
		 where works are adjacent to watercourses/water bodies subject to WE31, appropriate barriers will be installed temporarily along their edge to prevent plant tracking down slopes and damaging riparian vegetation or to prevent silt laden runoff flowing untreated into the watercourse/water body; 	
		 mud will be controlled at site entry and exit points using wheel cleaning areas and road sweepers as appropriate; 	
		 tools and plant will be washed out and cleaned in designated areas within the construction compounds where runoff is isolated for treatment before discharge to watercourse/ground or sewer under consent from National Resources Wales (NRW); and construction Sustainable Drainage Systems (SuDS) 	

Page 66	1
---------	---

Table 13: Su	Table 13: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured	
		(such as settlement lagoons or other temporary attenuation) will be used if necessary and where appropriate to do so.		
		 Over-pumping around culvert working areas will be carefully managed through the application of silt management measures to prevent suspension of sediment or contamination. 		
		 discharges to watercourses would be permitted by NRW, where required, in accordance with the requirement of the Environmental Permitting Regulations. 		
		 Prior to construction the following will be undertaken: the replacement of shallow drains as appropriate which cross a working area with sealed twin wall uPVC pipes where required; 	Measure WE56 of the CEMP (Document 7.4) which is secured through Requirement 6 of the DCO (Document 2.1).	
		 perforated uPVC land drains will be installed in wet areas where required; 		
		 any known main drain which will be severed by a pylon leg foundation will be diverted; 		
		 potential main drains along field headlands will be investigated and diverted as required; 		

Table 13: Summary of Land Use and Agriculture Control and Management Measures & Mitigation Measures			
Receptor	Source of Effect	Control and Management Measures & Mitigation Measures	Where the Mitigation is Secured
		• the cleaning of existing ditches and culverts through environmentally sensitive means to alleviate flows which may otherwise be restricted and in accordance with the BMS (Document 7.7);	
		 the identification of existing drainage outfalls within watercourses and any work required to improve existing outfalls; 	
		 the identification of springs, wells and water supplies and the identification of the appropriate protection; and 	
		 the installation of interceptor or cut off pipes in areas within the Order Limits that are known to have frequent shallow drains crossing them. 	