HyNet North West

OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CLEAN)

HyNet Carbon Dioxide Pipeline DCO

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulations 8(1)(c)

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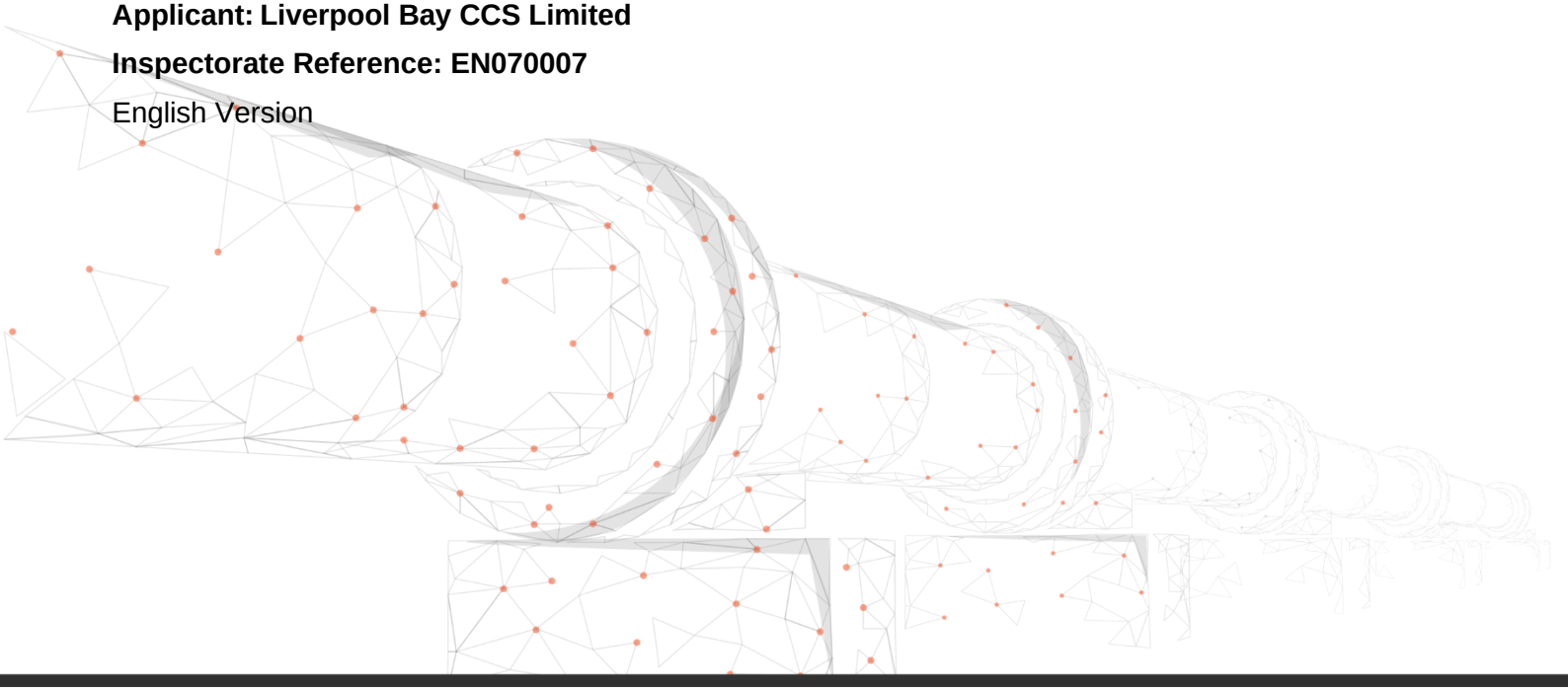

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TABLE OF CONTENTS

1. INTRODUCTION 1

1.1. Overview 1

1.2. Purpose of The OCEMP 2

2. CONSTRUCTION ACTIVITIES AND PROGRAMME 5

2.1. Pre-Construction Activities 5

2.2. Working Hours 5

2.3. Construction Schedule 6

3. SITE SECURITY, SAFETY AND WELFARE 8

3.1. Site Lighting 8

3.2. Worksite Fencing and Hoardings 8

3.3. Welfare Facilities 8

3.4. Emergency Preparedness 9

3.5. Extreme Weather Events 9

4. PROJECT ENVIRONMENTAL REQUIREMENTS 10

4.1. Consents and Permits 10

4.2. Pollution Incident Control 10

5. CONSTRUCTION ENVIRONMENTAL MANAGEMENT 11

5.1. The Approach 11

5.2. Site Checks and Reporting 12

5.3. Topic Management Structure and Content 13

6. CONSTRUCTION MANAGEMENT AND MITIGATION 14

7. REFERENCES 61

TABLES

Table 2.1 - Preliminary Construction Schedule 7

Table 6.1 - Construction Management and Mitigation – General Requirements 15

Table 6.2 - Construction Management and Mitigation – Description of the Proposed Development 16

Table 6.3: Construction Management and Mitigation – Air Quality 18

Table 6.4 - Construction Management and Mitigation – Climate Resilience 21

Table 6.5 - Construction Management and Mitigation – Cultural Heritage 21
Table 6.6 - Construction Management and Mitigation – Biodiversity 21
Table 6.7 - Construction Management and Mitigation – Greenhouse Gases 37
Table 6.8 - Construction Management and Mitigation – Land and Soils 38
Table 6.9 - Construction Management and Mitigation – Landscape and Visual 42
Table 6.10 - Construction Management and Mitigation – Major Accidents and Disasters 45
Table 6.11 - Construction Management and Mitigation – Materials and Waste 46
Table 6.12 - Construction Management and Mitigation – Noise and Vibration 47
Table 6.13 - Construction Management and Mitigation – Population and Health 49
Table 6.14 - Construction Management and Mitigation – Traffic and Transport 50
Table 6.15 - Construction Management and Mitigation – Water Resources and Flood Risk 53

APPENDICIES

APPENDIX 1.....
Outline Soil Management Plan.....
APPENDIX 2.....
Outline Peat Management Plan .....
APPENDIX 3.....
Outline Public Rights of Way Management Plan.....
APPENDIX 4.....
Outline Dust Management Plan .....
APPENDIX 5.....
Outline Materials Management Plan .....

1. INTRODUCTION

1.1. OVERVIEW

1.1.1. This document presents the Outline Construction Environmental Management Plan (OCEMP) for the DCO Proposed Development. It forms part of the application for a Development Consent Order (DCO) under the Planning Act 2008 ('PA2008') (**Ref. 1.1**) to the Secretary of State (SoS) Department for Energy Security and Net Zero (DESNZ) via the Planning Inspectorate (The Inspectorate).

1.1.2. **Revision B** of the **OCEMP** superseded **Revision A** of the **OCEMP [APP-225]** to take account of updated biodiversity survey data that was not presented within the **Revision A.**

1.1.3. **Revision C** of the **OCEMP** superseded **Revision B** of the **OCEMP** and provided updated information in response to the proposed design changes as outlined in **Table i.i** of **Chapter I** of the **ES Addendum 2023 Change Request 1 [CR1-124]. Revision D** of the **OCEMP** superseded **Revision B** of the **OCEMP** and provided updated information in response to the requirements of **Deadline 1** of Examination. **Revision D** was produced in advance of **Revision C** being accepted.

1.1.4. **Revision E** of the **OCEMP** replaces and supersedes all previous revisions of the **OCEMP.** It consolidates updates made as part of the **ES Addendum 2023 Change Request 1 [CR1-124]** and all updates associated with **Deadline 1.** It also provides updated information in response to the requirements of **Deadline 2** of Examination.

1.1.5. This **Revision F** of the **OCEMP** replaces and supersedes all previous revisions of the **OCEMP.** It consolidates updates made as part of the **ES addendum Change Request 2 [CR2-017].** It also provides updated information in response to the requirements of **Deadline 4** of Examination.

1.1.6. The DCO Proposed Development will form part of HyNet North West (‘the Project’), which is a hydrogen supply and Carbon Capture and Storage (‘CCS’) project. The goal of the Project is to reduce carbon dioxide emissions from industry, homes and transport and support economic growth in the North West of England and North Wales. The wider Project is based on the production of low carbon hydrogen from natural gas. It includes the development of a new hydrogen production plant, pipelines, and the creation of CCS infrastructure. CCS prevents CO_2 entering the atmosphere by capturing it, compressing it and transporting it for safe, permanent storage.

1.1.7. The DCO Proposed Development is a critical component of the Project which, by facilitating the transportation of carbon dioxide, enables the rest of the Project to be low carbon. The hydrogen production and CO_2 capture and storage elements of the Project do not form part of the DCO Proposed Development and will be delivered under separate consenting processes.

1.1.8. Further details of each element of the DCO Proposed Development are set out in **Chapter 3 – Description of the DCO Proposed Development (Volume II Document Reference: D.6.2.3)** of the 2022 Environmental Statement (ES) and associated addenda.

1.1.9. The OCEMP will act as a control plan which sets out indicative methods to avoid, minimise and mitigate likely environmental effects as a result of the DCO Proposed Development during construction as outlined in the 2022 **ES** (and associated addenda) **(Volume II (Document Reference: D.6.2)** and **Register of Environmental Actions and Commitments (REAC) (Document Reference: D.6.5.1)** submitted with the DCO Application and any associated addenda. It includes the minimum protocols to be followed in implementing these measures in accordance with environmental commitments during the Construction Stage.

1.2. PURPOSE OF THE OCEMP

1.2.1. An Environmental Impact Assessment (EIA) has been undertaken for the DCO Proposed Development and the ES has been prepared in accordance with the Infrastructure Planning (EIA) Regulations 2017 (the 'DCO EIA Regulations') (**Ref. 1.2**). In accordance with the requirements of the EIA Regulations, the ES contains the assessment of the potential significant effects on the environment that may be caused during construction, operation and decommissioning of the DCO Proposed Development and describes proposed mitigation measures and commitments.

1.2.2. This OCEMP demonstrates how these commitments in the ES will be implemented during the construction stage and describes any wider monitoring and auditing activities needed to ensure that mitigation measures proposed are undertaken and prove effective.

1.2.3. The OCEMP covers the construction activities envisaged at the time of submitting the DCO Application and any subsequent updates for proposed design changes as outlined in **Chapter 3 - Description of the DCO Proposed Development, (Volume II Document Reference: D.6.2.3)** and any associated addenda.

1.2.4. The detailed Construction Environmental Management Plan (CEMP) will be produced for the DCO Proposed Development following the appointment of the Construction Contractor(s). It is considered likely that there will be more than one detailed CEMP prepared for the DCO Proposed Development, for example separate CEMPs to cover different sites or phases of the development. This will be determined by the appointed Construction Contractor(s) once the detailed design and construction programme have been progressed. Under the terms of the DCO, no phase of the authorised development must commence until a CEMP relating to that phase and location has been submitted to, and approved by, the relevant planning authority.

1.2.5. The following bodies will also be consultees on the detailed CEMP:

- Environment Agency
- Natural Resources Wales
- Canal and River Trust
- National Highways

1.2.6. The detailed CEMPs, which will be substantially based on this OCEMP, will include protocols to be followed in implementing measures in accordance with environmental commitments during the Construction Stage. The need for a detailed CEMP to be produced will be secured by Requirement 5 of the **Draft Development Consent Order (DCO) (Document Reference: D.3.1)**, which also list the management plans that will be produced by the Construction Contractor and that will ultimately be appended to the detailed CEMP.

1.2.7. The Construction Contractor will comply with environmental legislation at the time of construction, together with any additional environmental controls required as part of the DCO. The detailed CEMPs will be designed to be compliant with relevant environmental legislation and the mitigation measures set out in the 2022 **ES (Volume II Document Reference: D.6.2)** and associated addenda and the **REAC (Document Reference: D.6.5.1)**. Any additional consents including licences, permits or approvals reviewed will be listed in the detailed CEMP.

1.2.8. The detailed CEMPs will be reviewed and approved by the relevant Local Planning Authorities in advance of starting works on-site.

1.2.9. The detailed CEMP will include the following:

- Outline Environmental Management System (EMS) requirements (in accordance with BS EN ISO 14001 **(Ref. 1.3)**;
- An overview of the DCO Proposed Development and construction programme;
- The assessment of potential environmental impacts (as reported in the 2022 **ES** and associated addenda **(Volume II Document Reference: D.6.2)**);

- Mitigation measures to ensure the reduction of potential adverse impacts including measures to ensure nuisance levels as a result of construction activities are kept to a practicable minimum;
- Any site-specific method statements required;
- Corrective action and contingency plan procedures;
- Stakeholder requirements; and
- Links to other complementary plans and procedures.

1.2.10. The Applicant will put in place robust procedures to inform and supervise all those working on the DCO Proposed Development, including its supply chain, to make sure the control measures and commitments set out in the OCEMP and the **REAC (Document Reference: D.6.5.1)** are adopted within the detailed CEMP throughout the Construction Stage. The overall responsibility for implementation of the detailed CEMP will lie with the appointed Construction Contractor(s) as a contractual responsibility to the Applicant, as the Applicant is ultimately responsible for compliance with the Requirements of the **Draft DCO (Document Reference: D.3.1)**.

1.2.11. The detailed CEMP will be a live document that will be maintained by the Construction Contractor(s) throughout the Construction Stage. The detailed CEMP will be reviewed, and if necessary updated and re-submitted to the relevant LPA for approval of any changes, at intervals to be agreed.

1.2.12. Towards the end of the Construction Stage, anticipated to be 2025, the Construction Contractor(s) will ensure a review of the DCO Proposed Development is conducted and the detailed CEMP signed off. An Operation and Maintenance Environment Management Plan (OMEMP) will be produced by the Applicant for the Operational Stage which will be substantially based on the Outline OMEMP **(Document Reference D.7.15)**.

1.2.13. Alongside this OCEMP, the following outline management plans have been submitted by the Applicant:

- Appendix 1: Outline Soil Management Plan **(Document Reference: D.6.5.4.1)**
- Appendix 2: Outline Peat Management Plan **(Document Reference: D.6.5.4.2)**
- Appendix 3: Outline Public Rights of Way Management Plan **(Document Reference: D.6.3.16.2)**
- Appendix 4: Outline Dust Management Plan **(Document Reference: D.7.24**)
- Appendix 5: Outline Materials Management Plan **(Document Reference: D.7.32**

2. CONSTRUCTION ACTIVITIES AND PROGRAMME

2.1. PRE-CONSTRUCTION ACTIVITIES

2.1.1. Ahead of construction, a number of pre-construction activities will be carried out and are likely to include the following:

- Photographic record of condition of any features likely to be affected;
- Topographical surveys;
- Geotechnical and ground stability surveys (including sampling of groundwater);
- Archaeological intrusive investigations and implementation of archaeological mitigation;
- Ecological pre-construction surveys and mitigation work;
- Route setting out in consultation with the landowner/occupier; and
- Site clearance and preparation.

2.1.2. Surveys and engagement with utility providers has been undertaken to identify known utilities within the Newbuild Infrastructure Boundary. None of the known utilities have any requirement for diversion as the depth of the Newbuild Carbon Dioxide Pipeline should enable the existing utilities to be crossed without disturbance.

2.1.3. A temporary drainage system would be implemented prior to the start of any construction work where necessary.

2.2. WORKING HOURS

2.2.1. Core working hours will be 08.00 to 18.00 Monday to Friday (excluding bank holidays) and from 08.00 to 13.00 on Saturdays. To maximise productivity within core working hours, the Construction Contractor(s) will require a period of up to one hour before and up to one hour after core working hours for the start-up and close-down of activities. This will include, but not be limited to, deliveries, movement to place of work, unloading, maintenance and general preparation works. It will not include the operation of any plant or machinery likely to cause disturbance to local residents or businesses. These periods will not be considered an extension of core working hours.

ADDITIONAL HOURS

2.2.2. Exceptions will be required for extended hours or working outside core hours (including where necessary working on a weekend or Bank Holiday) for activities such as:

- The continuous drilling/tunnelling and pulling phases for trenchless crossings;

- Where daytime working would be excessively disruptive to normal traffic operation;
- Cleaning/testing of the pipeline; and
- Overnight traffic management measures.

2.2.3. Except in the case of an emergency, any work required to be undertaken outside core hours (not including non-intrusive surveys, repairs or maintenance) will be agreed in advance with the relevant local authority.

2.3. CONSTRUCTION SCHEDULE

2.3.1. A preliminary construction schedule is included in **Table 1**. Sections presented in the table align with the assessment in the 2022 ES and associated addenda **(Volume II Document Reference: D.6.2)** and may not align with the final phasing plan.

2.3.2. More details on the construction phasing including a phasing plan will be submitted to the relevant Local Planning Authorities prior to construction.

2.3.3. The detailed CEMP will set out site-specific programme/timing constraints and considerations such as ecological seasonality or restrictions on working hours for noise (as outlined in the **REAC (Document Reference: D.6.5.1)**).

Table 2.1 - Preliminary Construction Schedule

Proposed Element	Start	Finish
Section 1		
Stanlow Central Compound	April 2024	June 2025
Ince AGI	July 2024	November 2024
Stanlow AGI	November 2024	March 2025
Section 2		
Picton Lane Central Compound	April 2024	July 2025
Chorlton Lane Central Compound	April 2024	July 2025
Rock Bank BVS	June 2024	October 2024
Section 3		
Sealand Road Central Compound	April 2024	July 2025
Mollington BVS	June 2024	October 2024
Section 4		
Wood Farm Central Compound	April 2024	July 2025
River Dee Central Compound	April 2024	July 2025
Section 5		
Shotton Lane Central Compound	April 2024	July 2025
Northop Hall Central Compound	April 2024	July 2025
Northop Hall AGI	January 2025	May 2025
Aston Hill BVS	June 2024	October 2024
Section 6		
Flint AGI	May 2024	September 2024
Section 7		
Cornist Lane BVS	October 2024	February 2025
Babell BVS	October 2024	February 2025
Pentre Halkyn BVS	October 2024	February 2025

3. SITE SECURITY, SAFETY AND WELFARE

3.1. SITE LIGHTING

3.1.1. Site lighting will be provided by Construction Contractor(s) as appropriate to enable safe working conditions and security of the Construction Compounds.

3.1.2. The Construction Contractor(s) will ensure that site lighting will be positioned and directed so as not to intrude unnecessarily on adjacent buildings, sensitive ecological receptors, structures used by protected species and other land uses to prevent unnecessary disturbance to local residents, light sensitive species such as bats, and local transport infrastructure.

3.1.1. Lighting would not be continuous, rather it would be used in shifts at the lowest luminosity necessary for safe delivery of each task.

3.1.2. The Construction Contractor(s) will be responsible for ensuring all lighting is switched off when not necessary for carrying out the works, or for health and safety, or security reasons. Site security will likely be posted at Centralised Compounds and will ensure an appropriate amount of lighting for the safe movement of personnel between welfare facilities.

3.1.3. The securing mechanism in relation to lighting proposals is included as a Requirement of the **Draft DCO (Document Reference: D.3.1)**.

3.2. WORKSITE FENCING AND HOARDINGS

3.2.1. The Construction Contractor(s) will be responsible for installing, maintaining and removing all temporary hoardings and fencing during the Construction Stage.

3.2.2. All worksites will be securely fenced or otherwise demarcated from public access.

3.2.3. All fencing and hoarding will be suitable, taking into consideration location, construction activities and the surrounding landscape.

3.2.4. The style of fencing would be selected using local considerations, typically ‘post-and-rope’ fencing for arable land or appropriate stockproof fencing for grazed land. Urban sections or areas with increased levels of public interaction may use HERAS or similar. All temporary fencing will be removed upon completion of the works.

3.3. WELFARE FACILITIES

3.3.1. Welfare facilities will be made available at each Construction Compound (e.g. Centralised Compounds, Trenchless Crossing Compounds and Localised Compounds). Welfare facilities may be shared between work sites where there is more than one compound in close proximity to minimise the construction footprint.

3.4. EMERGENCY PREPAREDNESS

3.4.1. Prior to the commencement of construction, the Construction Contractor(s) will develop an emergency procedure in consultation with the emergency services for potential risks during construction and will be required to follow the procedure in any site emergency.

3.4.2. The procedures will contain emergency phone numbers and the method of notifying the Local Authorities/Local Planning Authorities and all other relevant statutory authorities including emergency services for action by the Construction Contractor(s) and/or the Applicant. Contact numbers of the Construction Contractors' and the Applicant's key personnel will also be included.

3.5. EXTREME WEATHER EVENTS

3.5.1. The Construction Contractor(s) will consider the impacts of extreme weather events and related conditions during construction. They will use a short to medium range weather forecasting service from the Met Office or other approved meteorological data and weather forecast provider to inform short to medium term programme management, environmental control and mitigation measures.

3.5.2. The detailed CEMP will consider all measures deemed necessary and appropriate to manage extreme weather events and should specifically cover training of personnel and prevention and monitoring arrangements. As appropriate, method statements should also consider extreme weather events where risks have been identified.

4. PROJECT ENVIRONMENTAL REQUIREMENTS

4.1. CONSENTS AND PERMITS

4.1.1. The DCO Proposed Development will be delivered in compliance with all relevant legislation, consents and permits. The obtaining and discharging of all licences, consents and permits within the relevant timescales will be the responsibility of the Construction Contractor(s).

4.1.2. The Construction Contractor(s) will set up and maintain a register with details of consents, permits and licences required for the DCO Proposed Development including those which have been disapplied through the DCO process **(D-GN-001 of the Register of Environmental Actions and Commitments (REAC), Document Reference: D.6.5.1).**

4.1.3. The Construction Contractor(s) will obtain consents from the relevant local authorities and regulators for the applicable construction works **(D-PD-010 of the REAC, Document reference: D.6.5.1).** Applications will include details of proposed working hours. Further details of permit, licence and consent requirements in so far as these have been identified can also be found in the associated document **'Other Consents and Licences' (Document reference: D.5.2).**

4.2. POLLUTION INCIDENT CONTROL

4.2.1. The Construction Contractor(s) will prepare and implement appropriate measures to control the risk of pollution due to construction activities, materials and extreme weather events **(D-GN-002 of the REAC, Document Reference: D.6.5.1).**

4.2.2. The Construction Contractor(s) will be required to investigate and provide a report to the Applicant in the event a pollution incident does occur **(D-GN-003 of the REAC, Document Reference: D.6.5.1)**, including the following:

- A description of the pollution incident, including its location, the type and quantity of contaminant and the likely receptor(s);
- Contributory causes;
- Adverse effects and the measures implemented to mitigate adverse effects; and
- Recommendations to reduce the risk of reoccurrence.

4.2.3. The Construction Contractor(s) will consult with the relevant organisations, statutory bodies and other relevant parties when preparing response measures **(D-GN-004 of the REAC, Document Reference: D.6.5.1).**

4.2.4. Reference should be made to the appropriate Regulator's pollution prevention guidelines which are outlined in the **REAC (Document Reference: D.6.5.1)**.

5. CONSTRUCTION ENVIRONMENTAL MANAGEMENT

5.1. THE APPROACH

5.1.1. The detailed CEMP will be accompanied by a suite of management plans and procedures during the construction phase in line with **Draft DCO (Document Reference: D.3.1)** and the **REAC (Document Reference: D.6.5.1)**.

5.1.2. The Applicant will require the Construction Contractor(s) to provide Suitably Experienced Personnel (SEP) to monitor and manage works for which they are responsible **(D-GN-005 of the REAC, Document Reference: D.6.5.1).** The Construction Contractor will need to demonstrate an appropriate level of awareness of site sensitivities (including environmental features), codes of practice, relevant legislation and guidance appropriate to the construction activities in which they are employed.

5.1.3. The detailed CEMP will set out as a minimum **(D-GN-006 of the REAC, Document Reference: D.6.5.1)**:

- Description of the relevant phase(s) of the DCO Proposed Development, and clear figures identifying receptors that could be affected by construction activities;
- An outline of the pre-construction and construction works;
- An organogram showing names, roles, responsibilities and communication methods;
- Protocol for external reporting and community relations;
- Staff competence and requirements for training personnel, identifying mechanisms on how these are achieved and maintained;
- Information on inductions (including environmental), site briefings and toolbox talks to ensure staff are briefed on environmental matters and procedures specific to their location;
- A protocol to manage change as work progresses (e.g. updating evidence of compliance with the **REAC (Document Reference: D.6.5.1)** and detailed CEMP and having an audit trail of changes in line with the Construction Contractor(s) EMS), including procedures for updating, sign off and version control of environmental asset data and as built drawing requirements; and
- Emergency response, preparedness and non-conformance processes.

5.1.4. The Applicant will require its Construction Contractor(s) to have an EMS certified to BS EN ISO 14001 **(Ref. 3) (D-GN-007 of the REAC, Document Reference: D.6.5.1)**.

5.2. SITE CHECKS AND REPORTING

5.2.1. Regular site checks will be carried out across the DCO Proposed Development to monitor in accordance with the detailed CEMP and other associated plans and method statements.

5.2.2. The types of site monitoring would be associated with:

- Licenses, Permits and wider consents;
- Dust monitoring;
- Noise monitoring;
- Ground and surface water pollution prevention; and
- Vegetation and wildlife protection.

5.2.3. An internal site inspection programme will be produced and overseen by the Environmental Manager who will be present throughout the construction phase. The Environmental Manager will draw on appropriate suitably experienced environment specialists for specific tasks across the DCO Proposed Development. The Environmental Manager will monitor the works to ensure they proceed in accordance with relevant environmental DCO Requirements and adhere to the required mitigation measures as stipulated in the **REAC (Document Reference: D.6.5.1)**. Should works deviate from the detailed CEMP, the Applicant will be informed along with the justification (e.g. site conditions at the time) and a report detailing the actions taken and any required next steps. The Environmental Manager will also be the main contact for environmental regulators such as the Local Authorities, NRW and EA.

5.2.4. Where residual nuisance is predicted, appropriate remediation measures will be put in place in accordance with measures outlined within the detailed CEMP. The frequency of inspections will be increased when activities with a high potential to cause nuisance are being carried out, or conditions increase the risk of nuisance e.g. windy conditions increase dust risk.

5.2.5. Site inspections will be recorded in an environmental log book. **(D-GN-008 of the REAC, Document Reference: D.6.5.1)**. Findings will be disseminated to the wider construction team as appropriate, discussed during the periodic management review meetings, and additional procedures put in place if required.

5.3. TOPIC MANAGEMENT STRUCTURE AND CONTENT

5.3.1. Specific management, mitigation and control measures will be provided by each environmental topic as identified in **Section 6** in the form of detailed CEMPs which will be in accordance with requirements outlined in BS EN ISO 14001 **(Ref. 3)**.

5.3.2. The detailed CEMPs will reflect the mitigation measures and requirement as set out in this OCEMP and **REAC (Document Reference: D.6.5.1)**.

5.3.3. Additional management plans will be produced to cover the Decommissioning and Operational Stages such as Decommissioning Environmental Management Plan and Operations and Maintenance Management Plan, both included as a Requirement of the **Draft DCO (Document Reference: D.3.1)** A Landscape and Ecology Management Plan (LEMP) will be produced in accordance with the **Outline LEMP** (OLEMP) (**Document Reference: D.6.5.10**) which will continue from the Pre-Construction and Construction Stages as reinstatement and habitat provision is implemented, through to the Operational Stage whilst plants establish and grow. The production of the LEMP is a Requirement of the **Draft DCO (Document Reference: D.3.1)**.

6. CONSTRUCTION MANAGEMENT AND MITIGATION

6.1.1. This section of the OCEMP sets out the mitigation and management measures outlined in the **ES (Volume II Document Reference: D.6.2)** and **REAC (Document Reference: D.6.5.1)** during the Construction Stage. These measures are included as a minimum requirement, they illustrate how the monitoring strategy will be undertaken and who is responsible for each of the measures listed (**D-GN-009** of the **REAC**, **Document Reference: D.6.5.1**).

6.1.2. The detailed CEMP will include management plans and mitigation measures that are based on the mitigation and control measures listed within the **REAC (Document Reference: D.6.5.1).** The detailed CEMP will include the following management plans:

- Biosecurity Management Plan
- Dewatering Management Plan
- Dust Management Plan
- Groundwater Management and Monitoring Plan
- Material Management Plan
- Noise and Vibration Management Plan
- Peat Management Plan
- Public Rights of Way Management Plan
- Soil Management Plan
- Stakeholder Communications Plan
- Surface Water Management and Monitoring Plan
- Waste Management Plan

6.1.3. The tables listed in Section 6 of this OCEMP extrapolate the key construction mitigation and control measures within the **REAC (Document Reference: D.6.5.1)** and any associated addenda that will be incorporated into the topic specific management plans as part of the detailed CEMP.

6.1.4. Operational, Maintenance and Decommissioning environmental commitments can be found in the Outline OMEMP **(Document Reference D.7.15).**

6.1.5. For all design, construction, operational, maintenance and decommissioning environmental commitments refer to the **REAC (Document Reference: D.6.5.1)**.

Table 6.1 - Construction Management and Mitigation – General Requirements

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-GN-001	The Construction Contractor(s) will set up and maintain a register with details of consents, permits and licences required for the DCO Proposed Development including those which have been disapplied through the DCO process.	To keep an up to date record of all past and current consents, permits and licences to ensure the DCO Proposed Development is remaining compliant with the appropriate legislative measures.	Construction Contractor
D-GN-002	The Construction Contractor(s) will prepare and implement appropriate measures to control the risk of pollution due to construction activities, materials and extreme weather events.	To avoid or otherwise minimise the risk of environmental effects due to unexpected pollution incidents	Construction Contractor
D-GN-003	The Construction Contractor(s) will be required to investigate and provide a report to the Applicant in the event a pollution incident does occur, including the following: • A description of the pollution incident, including its location, the type and quantity of contaminant and the likely receptor(s); • Contributory causes; • Adverse effects and the measures implemented to mitigate adverse effects; and • Recommendations to reduce the risk of reoccurrence.	To provide record of any unexpected pollution incidents for monitoring and compliance purposes and to inform the development of action plans to avoid or minimise the potential for reoccurrence	Construction Contractor
D-GN-004	The Construction Contractor(s) will consult with the relevant organisations, statutory bodies and other relevant parties when preparing response measures.	To provide the opportunity for relevant organisation and stakeholders to input or comment on response measures	Construction Contractor
D-GN-005	The Applicant will require the Construction Contractor(s) to provide Suitable Experienced Personnel (SEP) to monitor and manage works for which they are responsible.	To ensure that construction practices are carried out in line with the appropriate best practice and legislative requirements	The Applicant / Construction Contractor
D-GN-006	The Detailed CEMP will set out as a minimum: • Description of the relevant phase(s) of the DCO Proposed Development, and clear figures identifying receptors that could be affected by construction activities; • An outline of the pre-construction and construction works; • An organogram showing names, roles, responsibilities and communication methods; • Protocol for external reporting and community relations; • Staff competence and requirements for training personnel, identifying mechanisms on how these are achieved and maintained; • Information on inductions (including environmental), site briefings and toolbox talks to ensure staff are briefed on environmental matters and procedures specific to their location;	To ensure that the Detailed CEMP is compliant, robust and fit for purpose	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	• A protocol to manage change as work progresses (e.g. updating evidence of compliance with the REAC, and detailed CEMP and having an audit trail of changes in line with the Construction Contractor(s) EMS), including procedures for updating, sign off and version control of environmental asset data and as built drawing requirements; and • Emergency response, preparedness and non-conformance processes.		
D-GN-007	The Applicant will require the Construction Contractor(s) to have an EMS certified to BS EN ISO 14001.	To ensure that the Construction Contractor has a certified environmental management system	The Applicant / Construction Contractor
D-GN-008	Site inspections will be recorded in an environmental log book, incorporating all environmental areas.	To keep an up to date record of all works being carried out, best practice examples and improvement requirements for the Construction Contractor to action.	Construction Contractor
D-GN-009	The CEMP will set out construction mitigation and management measures outlined in the ES and REAC during the construction stage. These measures will illustrate how the monitoring strategy will be undertaken and who is responsible for each of the measures listed.	To ensure mitigation and management measures are followed correctly during the construction stage of works.	Construction Contractor

Table 6.2 - Construction Management and Mitigation – Description of the Proposed Development

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-PD-001	For complex crossings, to avoid disruption to utilities, major highways, railways, watercourses and/or particular environmental sensitivities (e.g. ancient woodland), specialist trenchless installation techniques will be used.	To reduce the impacts on environmental features	Construction Contractor
D-PD-002	All above-ground equipment will be elevated on concrete foundations/plinths, and no vulnerable equipment is expected to be located near ground level.	To mitigate against flood risk	Construction Contractor
D-PD-004	Where reasonably practicable, the Detailed Design refinement of the Newbuild Carbon Dioxide Pipeline route will avoid environmentally sensitive receptors.	To reduce the impacts on environmental features	Construction Contractor
D-PD-005	The Construction Contractor will prepare a detailed Surface Water Drainage Strategy which will be based on the Outline Surface Water Drainage Strategy Report	To reduce impacts upon environmental features and surface water drainage	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-PD-006	The landowner/occupier will be engaged with before any off-site disposal is planned. In such instances, disposal will be undertaken in accordance with waste management regulations (England and Wales)	Re-use of excess materials and limit permanent removal of soils during Construction Stage	Construction Contractor
D-PD-007	For smaller scale de-watering (such as after periods of heavy rainfall), most local de-watering will be by portable sump-pump discharging to ground through suitable de-silting arrangements. Where required, local soil saturation levels will be monitored to prevent water logging adjacent areas.	To reduce the impacts on surface water quality, groundwater and flood risk	Construction Contractor
D-PD-008	Where larger volumes of de-watering are required, portable pumps will be used to abstract the water into mobile de-silting and water treatment systems.	To reduce the impacts on surface water quality, groundwater and flood risk	Construction Contractor
D-PD-009	Regular quality testing of the water will take place after it has passed through the weirs to determine if further treatment is required prior to discharge, which would be to a nearby watercourse, licenced sewer discharge point, or, if none is present, to greenfield surface. Any captured sediment would be disposed of offsite at a location to be agreed with the local authority. These activities would be subject to separate consents, which would be granted sought by the relevant authorities (Natural Resources Wales (Wales) or Environment Agency (EA) (England)) and would be applied for in advance of the construction works.	To reduce the impacts on surface water quality, groundwater and flood risk	Construction Contractor
D-PD-010	The Construction Contractor(s) will be responsible for obtaining all required environmental permits, licences and consents from the relevant authorities where required.	To reduce the impacts upon environmental features and remain compliant to the appropriate legislation requirements	Construction Contractor
D-PD-011	All watercourse banks, sides of drainage ditches, and all open cut ground road crossing will be backfilled. Each layer will be thoroughly compacted by suitable compacting equipment to provide a good bond between the undisturbed sides of the trench and the new backfill material.	Re-use of excess materials and limit permanent removal of soils during Construction Stage	Construction Contractor
D-PD-016	A Scheme for Aerodrome Safeguarding Measures will be implemented, this will outline mitigation to reduce impacts upon surrounding aviation land during construction in surrounding areas.	To ensure that impacts upon nearby aviation operations are avoided or otherwise minimised	Construction Contractor
D-PD-018	The working width for open cut trenching installation will be kept as narrow as possible, to a maximum of 32m where reasonably practicable.	To avoid or otherwise minimise potential environmental impacts	Construction Contractor
D-PD-019	No excavated material from the trenches will be placed outside of the demarcated working area.	To avoid or otherwise minimise potential environmental impacts	Construction Contractor
D-PD-020	At 19 non-sensitive locations where the pipeline is being installed under a feature using trenchless techniques, above ground construction access will be used to allow NRMM to cross from one side of the trenchless crossing to the other, providing there is no adverse impact on the environment. Further	To avoid or otherwise minimise potential environmental impacts	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	detail on these crossings is provided within Appendix 3.1 – Table of Trenchless Crossings (Document Reference D.6.2.3.1) . Out of the 19 crossings: • Seven crossings (TRS-03, TRS-04, TRS-07, TRS-10, TRS-13, TRS-16 and TRS-19) are considered to have low potential for adverse environmental impacts. • Ten crossings (TRS-11, TRS-15, TRS-21, TRS-22, TRS-23, TRS-25, TRS-33, TRS-38, TRS-40 and TRS-42) are considered to have low potential for adverse environmental impacts other than requiring minor traffic management considered within the OCTMP (Document Reference: D.6.5.3). • Two crossings (TRS-12 and TRS-26) have potential for adverse environmental impacts due to the presence of possible sensitive receptors. These two crossings will be subject to pre-construction surveys and above ground construction access will only proceed if, having regard to the surveys and the judgement of the ECoW, it is concluded that the surveys demonstrate that there will be no significant adverse environmental impact on receptors. This would include confirming that there are no likely adverse effects on users of the PRoWs. The surveys would be part of the CEMP and the results of this would need to be approved by the local authority.		

Table 6.3: Construction Management and Mitigation – Air Quality

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-AQ-002	The Stakeholder Communications Plan that includes community engagement before work commences on site will be implemented.	To ensure the project air quality contacts are known.	Construction Contractor
D-AQ-003	The name and contact details of person(s) accountable for air quality and dust issues will be displayed on the Site boundary and within site cabins. This may be the environment manager/engineer or the Site manager. The head or regional office contact information will also be displayed.	To ensure the project air quality contacts are known.	Construction Contractor
D-AQ-004	The Dust Management Plan (DMP) will be implemented on site by the Construction Contractor. This will include measures to control other emissions, in addition to dust and PM10 mitigation measures.	To control and monitor dust deposition, dust flux, real-time PM10 and other emissions.	Construction Contractor
D-AQ-005	All dust and air quality complaints will be recorded, and causes identified. Appropriate remedial action will be taken in a timely manner with a record kept of actions taken including of any additional measures put in place to avoid reoccurrence.	Site Management	Construction Contractor
D-AQ-006	The complaints log will be made available to the appropriate local authority on request.	Site Management	Construction Contractor
D-AQ-007	Any exceptional incidents that cause dust and/or air emissions, either on or off site will be recorded, and then the action taken to resolve the situation recorded in the site log book.	Site Management	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-AQ-008	Daily on-site and off-site inspections (up to a minimum of 50m from the site boundary) will be undertaken by a suitable experienced person, where receptors (including roads) are nearby (within 100m of Site or access roads) to monitor dust. The inspection results will be recorded and made available to the local authority when asked. This will include regular dust soiling checks of surfaces such as street furniture, cars, and windowsills within 100m of construction works.	Monitoring of dust producing activities during construction.	Construction Contractor
D-AQ-009	The frequency of Site inspections will be increased when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	Monitoring of dust producing activities during construction.	Construction Contractor
D-AQ-010	Continuous dust monitoring will be undertaken at Centralised Compounds. For locations of trench digging and trenchless crossings, visual inspections of receptors in the vicinity of the works will be undertaken and results recorded in the Inspection Log.	Monitoring of dust producing activities during construction.	Construction Contractor
D-AQ-012	The Site layout will be designed and planned so that machinery and dust causing activities are located away from sensitive receptors, as far as reasonably practicable.	Preparing and Maintaining Site.	Construction Contractor
D-AQ-013	Where practicable, erect solid screens or barriers around dusty activities or the Site boundary that are at least as high as any stockpiles on Site.	Preparing and Maintaining Site.	Construction Contractor
D-AQ-014	Runoff of water and/or mud will be mitigated against while the Site is being set up and maintained.	Preparing and Maintaining Site.	Construction Contractor
D-AQ-015	Manage earthworks and exposed areas or soil stockpiles to precent wind-borne dust. Use methods such as covering, seeding or using water suppression.	Preparing and Maintaining Site.	Construction Contractor
D-AQ-016	Ensure all vehicle operators switch off engines when not in use and ensure there is no idling.	Operating Vehicle/Machinery and Sustainable Travel.	Construction Contractor
D-AQ-017	Where reasonably practicable, reduce the use of diesel- or petrol-powered generators, for example by using hybrid site generators.	Operating Vehicle/Machinery and Sustainable Travel.	Construction Contractor
D-AQ-018	A maximum speed limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas will be imposed.	Operating Vehicle/Machinery and Sustainable Travel.	Construction Contractor
D-AQ-019	The most practically sustainable form of transport for the delivery of goods and materials would be chosen, so far as reasonably practicable.	Operating Vehicle/Machinery and Sustainable Travel.	Construction Contractor
D-AQ-020	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, for example, suitable local exhaust ventilation systems.	To reduce risk of dust blowing around Site and to protect workers from inhalation.	Construction Contractor
D-AQ-021	Ensure an adequate water supply is on the Site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	To ensure dust creating activities are dampened down to reduce risk to Site workers.	Construction Contractor
D-AQ-022	Covered skips will be used to reduce the risk of materials or dusty materials blowing out and contaminating the surrounding site.	Reduce risk of materials becoming loose and potential contamination of Site.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-AQ-023	Ensure equipment is readily available on-site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	To prevent further spread of spills and contamination to surrounding environment.	Construction Contractor
D-AQ-024	Following excavation works, return subsoil and topsoil at the earliest suitable time of year after construction has been completed.	Earthwork mitigation measures	Construction Contractor
D-AQ-025	Avoid scabbing (roughening of concrete surfaces) if possible, to reduce concrete dust.	Construction mitigation measures	Construction Contractor
D-AQ-026	For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust.	Construction mitigation measures	Construction Contractor
D-AQ-027	All construction plant and equipment will be maintained and in good working order.	Construction mitigation measures	Construction Contractor
D-AQ-028	Use water assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the Site. This may require the sweeper being in frequent use.	Construction mitigation measures	Construction Contractor
D-AQ-029	Avoid dry sweeping of large areas.	Trackout mitigation measures	Construction Contractor
D-AQ-030	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	Trackout mitigation measures	Construction Contractor
D-AQ-031	Inspect on-site haul roads for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	Trackout mitigation measures	Construction Contractor
D-AQ-032	Record all inspections of haul routes and any subsequent action in a site log book.	Trackout mitigation measures	Construction Contractor
D-AQ-033	Where practicable, hard surfaced haul routes will be installed, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.	Trackout mitigation measures	Construction Contractor
D-AQ-034	Access points to the local highway will be prepared with temporary hard surfacing and wheel washing facilities.	Trackout mitigation measures	Construction Contractor
D-AQ-035	Ensure construction traffic does not pass along sensitive roads (residential roads, congested roads, via unsuitable junctions, etc.) where possible, and that vehicles are kept clean (using wheel washers, etc.) and sheeted when on public highways. Timing of large-scale vehicle movements to avoid peak hours on the local road network will also be beneficial.	Establish the most suitable access and haul routes for the site traffic.	Construction Contractor
D-AQ-040	There will be no bonfires or burning of waste materials.	Waste Management practices and reducing hazardous fumes	Construction Contractor
D-AQ-041	Only remove the stockpile cover (where implemented) in small areas during work and not all at once.	Earthwork mitigation measures	Construction Contractor
D-AQ-043	Avoid explosive blasting, using appropriate manual or mechanical alternatives	Construction mitigation measures	Construction Contractor

Table 6.4 - Construction Management and Mitigation – Climate Resilience

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-CR-002	The Principal Designer and Construction Contractor(s) will ensure ground investigations and surveys are completed to ensure ground quality is sufficient to withstand increased precipitation and temperatures during construction.	To ensure there is mitigation for temperature increase effects on soils.	Construction Contractor
D-CR-011	Consideration will be made for the potential effects of climate change, through careful selection of species for proposed planting and the management of new and existing planting	To aid resilience to changing future climate.	The Applicant / Construction Contractor

Table 6.5 - Construction Management and Mitigation – Cultural Heritage

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-CH-001	Archaeological works where required will be undertaken in consultation with the relevant Archaeological Advisor (the LPA, Historic England, or Cadw), and in accordance with an approved archaeological Written Scheme of Investigation (WSI).	To set out clear scope and method of investigation, and post-excavation reporting and dissemination strategy.	Construction Contractor
D-CH-002	Boundaries of the scheduled monument (NHLE 1012122) will be avoided during construction, and any works in the surrounding area will adhere to the WSI and in consultation with the relevant Archaeological Advisor (the LPA, Historic England, or Cadw).	To prevent any potential impacts to the scheduled monument.	Construction Contractor

Table 6.6 - Construction Management and Mitigation – Biodiversity

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-BD-001	Prior to construction, a team of suitably qualified and experienced Ecological Clerk of Works (ECoWs), will be appointed to support, oversee and monitor the Construction Contractor with the implementation of measures defined within the OCEMP. Multiple ECoWs may be required during construction to ensure appropriate oversight of multiple active works locations. Broadly, the ECoW will: • Provide ecological advice to the Construction Contractor over the entire construction programme, at all times as required. • Undertake or oversee pre-construction surveys for protected species in the areas affected by the DCO Proposed Development. • Monitor ecological conditions during the Construction Stage to identify additional constraints that may arise as a result of natural changes to ecological baseline over time, e.g., the monitoring of badger activity within and in close proximity to construction works. • Provide ecological toolbox talks to site personnel to make them aware of ecological constraints and information; highlight mitigation to minimise impacts; and make site personnel aware of their responsibility with regards to wildlife and sensitive habitats in the context of legislation and policy. Toolbox talks will include, as required, all ecological receptors considered within the ES as a minimum.	To ensure implementation of mitigation measures, track compliance with commitments and legal requirements.	The Applicant / Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	• Monitor the implementation of mitigation measures during the Construction Stage to ensure compliance with protected species legislation, licensing, and commitments within the ES. The ECoW will have previous experience in similar ECoW roles and be approved by the Applicant. The ECoW will be appointed in advance of the main construction programme commencing to ensure pre-construction surveys are undertaken and any advance mitigation measures required are implemented.		
D-BD-002	All necessary permits, licenses and assents will be applied for from relevant bodies in advance of construction or enabling works commencing. Only once licence/permit applications have been granted, and any initial licenced actions completed, can works commence. Licences and permits are likely to include, but are not limited to, derogation licences for protected species, permits for in-water works, etc. Assents are likely to be required for works in proximity to statutory designated sites.	To protect sites, habitats and fauna and comply with conservation legislation, local and national policies.	Construction Contractor
D-BD-003	The Applicant will appoint an external, third-party to conduct Environmental Compliance Audits during construction of the DCO Proposed Development. The 'Auditing ECoW' will undertake checks of the Construction Contractor and their ECoW(s) reporting on compliance of construction works, mitigation and activities on site against the ES and Detailed CEMPs, as well as any obtained licenses, permits or assents. The Auditing ECoW will produce monthly reports (or otherwise agreed reporting deadlines in response to on-site activities) and provide written and verbal feedback to the Construction Contractor and ECoW on performance and adherence with the ES, Detailed CEMPs, licenses, permits and assents throughout the construction period, as required.	To ensure implementation of mitigation measures and legal requirements.	The Applicant
D-BD-004	Ecological mitigation measures as detailed within the Outline Landscape and Ecological Management Plan (OLEMP) (Document Reference: D.6.5.10) will be implemented, with a Detailed LEMP to be produced at Detailed Design.	To maintain and enhance ecological features within the landscape.	The Applicant / Construction Contractor
D-BD-005	A pre-commencement walkover survey will be completed by the ECoW (or appointed ecologist) of areas within the Newbuild Infrastructure Boundary (extended where necessary to encompass a relevant zone of influence as determined by the ECoW/ecologist) or any areas that could not be accessed during baseline surveys completed in 2021 and 2022. The walkover survey shall include a ground level assessment of land in search of presence or activity of protected and or notable species. The walkover survey results will determine the need for additional survey, mitigation and/or licensing beyond that included within the ES; to be considered in advance of construction commencement. Results of surveys and any needs for mitigation and licensing will be discussed with relevant stakeholders (.e.g. Natural England, Natural Resources Wales, Environment Agency) where required, with updates captured within the detailed CEMPs for the DCO Proposed Development.	To update baseline survey results and protect species and habitats.	Construction Contractor
D-BD-006	The need for pre-construction surveys to update baseline results across the Newbuild Infrastructure Boundary will be assessed by the appointed ecologist/ECoW following confirmation of Detailed Design of the DCO Proposed Development. Pre-construction surveys may be necessary to update baseline results in advance application of protected species licenses/permits/exemptions required to facilitate construction of the DCO Proposed Development.	To protect species.	Construction Contractor
D-BD-007	The design of the DCO Proposed Development has avoided sites and habitats subject to nature conservation designations where possible. Where significant crossings are required, such as the River Dee SAC, Gowy Meadows and Ditches LWS and Shropshire Union Canal LWS, trenchless installation techniques will be employed preventing the need for open-cut construction methods. Through use of trenchless installation techniques, impacts arising from construction upon habitats and species associated with	To avoid adverse impacts to designated sites and protected species	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	designated sites will be avoided and reduced. This includes minimising, as far as is reasonably practicable, the loss of mature trees – in particular around the Shropshire Union Canal (noting this is also a Conservation Area)	and comply with conservation legislation	
D-BD-008	Where possible, Ancient Woodland has been excluded from the Newbuild Infrastructure Boundary. Design of the DCO Proposed Development has included use of trenchless crossing techniques to avoid and reduce adverse effects on Ancient Woodland present within the Newbuild Infrastructure Boundary. This has been implemented in Northop Hall, where Ancient Woodland spans the entire width of the Newbuild Infrastructure Boundary.	To avoid adverse impacts to Ancient Woodland	Construction Contractor
D-BD-009	Micro-siting techniques will be employed throughout the detailed design of the DCO Proposed Development, including during pre-construction and construction to avoid waterbodies, sensitive habitats, trees (including ancient and veteran trees and trees covered by Tree Preservation Orders and trees within Conservation Areas), hedgerows, etc., as much as practicably possible. Where opportunities exist for routing through existing gaps in hedgerows, scrub and woodlands, avoiding the need to remove vegetation, these will be prioritised.	To minimise adverse impacts on designated sites/ habitats/ watercourses/trees.	Construction Contractor
D-BD-010	Where practicable, areas of woodland and trees within the Newbuild Infrastructure Boundary will be retained and exclusion buffers clearly demarcated (where woodland does not encroach into the 32 m construction corridor). Identified woodlands include (shown on Figure 9.11.1 within Appendix 9.11 – Arboricultural Impact Assessment Report, Volume III), but are not limited to: • G978 • G552 • G328 • G109 The extent of demarcation of retained woodlands/trees will be driven by assessed Root Protection Areas (RPA) of retained trees. Where encroachment within RPAs is required to facilitate construction, ECoW and arboriculturist advice will be sought to discuss sensitive working methods in order to protect retained trees.	To avoid and minimise adverse impacts on woodland and trees.	Construction Contractor
D-BD-011	Micro-siting techniques have been employed to avoid waterbodies (ponds) across the DCO Proposed Development. All waterbodies identified during baseline surveys, with the exception of one near Stanlow Manufacturing Complex, will be retained and will not be temporarily or permanently lost to facilitate construction of the DCO Proposed Development. Retained waterbodies within the construction easement of the DCO Proposed Development will be demarcated by a minimum 5 m exclusion buffer to avoid/reduce potential adverse impacts to waterbodies, associated terrestrial bankside habitat and associated aquatic receptors from construction.	To avoid impacts to waterbodies and associated riparian and aquatic receptors	Construction Contractor
D-BD-012	Where hedgerow removal is required to facilitate construction, it has been assumed this will be kept to a maximum width of 15 m (this includes both hedgerows and the trees that sit within hedgerows). Opportunities to reduce the amount of hedgerow removal required at each hedgerow crossing will be explored, with the smallest practicable width of hedgerow removal possible prioritised to facilitate construction of the DCO Proposed Development.	To minimise adverse impacts on Habitats of Principal Importance (HPI)	Construction Contractor
D-BD-013	All trees and hedgerows sited above any trenchless crossing point will be retained, unless otherwise required for access, where the trenchless crossing is of adequate depth to avoid impacts to root plates and below ground vegetation structure.	To minimise adverse impacts on Habitats of Principal Importance (HPI)	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-BD-014	Site/vegetation clearance and tree felling will be kept to a minimum, as far as practicable, to reduce impacts of habitat loss and fragmentation. Areas of clearance, particularly those within temporary works, shall be identified within a works plan and agreed with the ECoW. Site clearance of vegetation will be undertaken carefully (where possible using hand tools) by experienced contractors to reduce the risk of mortality to wildlife; and completed under the supervision of the ECoW. Care should be afforded to dense stands of bramble or similar vegetation, which may be used by sheltering hedgehog or other wildlife, particularly during the winter months. Where trees and other woody vegetation are to be felled/ cleared, the felled material will, where practicable, be used to create hibernacula within appropriate retained habitats rather than being chipped. Locations will be identified by the appointed ECoW and agreed during detailed design of the DCO Proposed Development/during construction.	To reduce impacts to flora and fauna, reduce habitat loss and fragmentation	Construction Contractor
D-BD-015	Where lighting is required during construction and operation stages, a suitable lighting design (where necessary on a case-by-case basis) for implementation across the DCO Proposed Development in accordance with best practice guidance on lighting with regards to protected species, will broadly include: • Avoidance of direct lighting upon any buildings or trees that contain bat roosts or barn owl nest/ roost sites. • Avoidance of artificial lighting of watercourses, particularly during the hours of darkness, to prevent impacts to fish behaviour or passage. • Avoidance of light spill through use of directional and/or baffled lighting. • The use of movement triggers, lighting only turning on when people (large objects) move through an area. • Positioning of lighting columns away from habitats of value to foraging and commuting bats and other nocturnal fauna (e.g. hedgerows, trees, woodland). • Reducing the height of lighting columns to reduce light spill onto adjacent retained habitats. • Undertaking works during daylight hours (broadly 08:00 to 18:00) reducing the need for night time lighting. • Avoiding use of blue-white short wavelength lights and high UV content. The lighting design will be developed at detailed design based on guidance for lighting with regards to protected species and be approved by the LPA. Bespoke lighting designs will be prepared for works locations where 24-hour working is required (e.g. River Dee crossing, A494 crossing, Church Lane crossing).	To reduce disturbance to nocturnal and crepuscular fauna during construction.	The Applicant / Construction Contractor
D-BD-016	The design of the DCO Proposed Development has ensured that permanent built structures (Above Ground Infrastructure (AGIs) and Block Valve Stations (BVSs) are sited in locations where habitats are of low ecological value, such as poor semi-improved grassland, associated with grazing pasture, or arable fields.	To minimise and avoid impacts to terrestrial habitats	Construction Contractor
D-BD-017	Localised and Centralised Compounds and storage areas to facilitate construction of the DCO Proposed Development have been sited within habitats of low ecological importance such as poor semi-improved grassland, associated with grazing pasture, or arable fields, or existing hardstanding/sealed surface areas	To minimise and avoid impacts to terrestrial habitats	Construction Contractor
D-BD-018	A minimal working width at watercourse crossings will be adopted, as far as practicable, to minimise potential impacts of open cut watercourse crossings.	To minimise and avoid impacts to aquatic habitats	Construction Contractor
D-BD-019	All entry and exit pits for all trenchless crossings will be sited a minimum of 8 m away from any main river bank top (and any defence structure on that watercourse), and 16 m away from any transitional (tidal) waters (and any defence structures on that watercourse).	To avoid impacts to watercourses and	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	Stand-off distances around watercourses will be implemented prior to the commencement of works and clearly demarcated through the use of physical barriers (fencing, tape or similar). These include: • A minimum 8 m buffer will be demarcated around non-tidal ordinary main river watercourses; and • A minimum 16 m buffer will be demarcated around tidal watercourses, i.e., the River Dee. With regards the crossing under the River Dee, this will be a minimum depth of at least 15m for Horizontal Directional Drilling or 8m for Micro-Tunnelling (distance between the top of the casing and the riverbed).	associated riparian and aquatic receptors	
D-BD-020	It is currently assumed that the detailed design alignment of the DCO Proposed Development will maintain a 30 m buffer from all sett entrances associated with the following identified main badger setts: • Sett 24 • Sett 29 • Sett 31 Where a 30 m buffer cannot be maintained, this will be discussed with the ECoW and may be reduced dependent on the type, extent and duration of works proposed. No direct impacts to main setts are anticipated as result of construction. Any indirect impacts to main badger setts will be assessed and associated mitigation to ameliorate impacts will be captured with a method statement. Where required, a Protected Species Licence (PSL) application will be made and subject to approval by NE/NRW. Only upon receipt of a granted licence can mitigation be implemented. Construction in the area of an identified main sett will only commence following completion of all licence requirements and implementation of all necessary mitigation.	To avoid adverse impacts to badger and comply with conservation legislation.	Construction Contractor
D-BD-021	Prior to works commencing a pre-commencement walkover survey for badger will be undertaken of the works area and a 30 m buffer (extended at the discretion of the ECoW/appointed ecologist). The walkover survey will be undertaken by the ECoW to confirm that baseline results remain accurate and relevant. This is recommended to be undertaken at least three months in advance of works commencement. The detailed design alignment of the pipeline will, wherever practicable, maintain a 30 m buffer from all sett entrances associated with annex, subsidiary and outlier setts. Where this is not possible, at the discretion of the ECoW and in response to the type, duration and extent of works, a reduction in exclusion buffer size may be granted. Where not possible, appropriate mitigation measures will be devised and captured within a method statement alongside an application for a PSL (where considered necessary). Mitigation measures may include the temporary closure or permanent closure and destruction of a sett under licence. Only upon receipt of a granted licence and following completion of all necessary licence requirements/mitigation can works commence. The following setts have been identified at risk of direct impacts as a result of construction of the DCO Proposed Development and will require full closure and destruction under licence to facilitate construction. • Sett 19 – Outlier • Sett 20 – Outlier • Sett 26 – Outlier • Sett 32 – Annex	To avoid adverse impacts to protected species and comply with conservation legislation	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	Setts requiring closure will be subject to PSL applications detailing proposed closure methods, mitigation recommendations (where necessary) and timeframes, in advance of construction commencement. The process and method of sett closure will be detailed within method statements, accompanying any licence application. Methods are broadly to follow: • Preparation of method statement and licence application with submission to relevant body. • Appointment of an appropriately experienced and licensed ecologist to oversee the closure process and adherence to licence requirements following granted licence receipt. • Installation of wire mesh and one-way gates on and around sett entrance/s. • A minimum period of 21 days monitoring post gate installation, to determine whether badger have vacated a sett. • If signs of badger re-entry are recorded, exclusion measures will be repaired and extended (as required) and the 21-day monitoring period restarted. • Following successful conclusion of 21-day period without badger activity or evidence, destruction of the sett by careful excavation under the supervision of the licensed ecologist (or named accredited agent). Sett closure and destruction is restricted to the period July to November inclusive. Only once the entirety of the sett exclusion period has been successfully completed (i.e. no evidence of badgers occupying or utilising the sett) can destruction of the sett take place and construction commence thereafter. Should a badger sett or activity be discovered within a zone of influence of proposed construction works, mitigation will be developed and, where required, an application for a derogation licence from NE / NRW will be applied for in advance of construction. Any necessary mitigation to facilitate construction will be implemented in advance of construction commencement (within that zone of influence) following receipt of a granted licence.		
D-BD-022	Due to the presence of badger within the Newbuild Infrastructure Boundary, badger permeable fencing will be used, where fencing is required to allow the free movement of badger through the landscape. It may be necessary to implement badger-resistant fencing around spoil heaps/storage locations to prevent any attempts of sett creation/excavation. Where possible, spoil will be stored in heaps with shallow angles to dissuade badger from sett creation attempts. Spoil heaps will be left in situ for as short a duration as possible, or else covered and secured with appropriate material (e.g., tarpaulin), where considered required by the ECoW.	To avoid adverse impacts to badger movement within the landscape	Construction Contractor
D-BD-023	To prevent entrapment of wildlife, where trenches or voids are to be left overnight, a suitable means of escape will be provided (such as a ramp at no greater than a 45° angle) at regular intervals along the excavated trench channel/excavations. Any void/trench channel should be visually inspected prior to re-starting works each morning to confirm the absence of entrapped wildlife. All escape measures will be discussed and agreed with the ECoW to ensure they are suitable for the size of void and wildlife that may become trapped. Any exposed tunnels or pipes will, where practicable, be covered or capped to prevent access to wildlife. If deemed appropriate, the ECoW may enforce additional measures such as the installation of temporary amphibian/ reptile fencing around voids / trenches to prevent entry.	To prevent entrapment and mortality of wildlife	Construction Contractor
D-BD-024	Bat roosts (excluding maternity or hibernation roosts) have been identified during baseline surveys. Bat roosts identified to date include: • B97 (single common pipistrelle Pipistrellus pipistrellus day roost); • B113 (single common pipistrelle day roost); and • B133 (Four common pipistrelles and three soprano pipistrelles day roost). • Seventeen tree roosts comprising;	To protect the Conservation Status of local bat populations.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	• T1 (single common pipistrelle potential day roost); • T49 (single soprano pipistrelle day roost); • T70 (single soprano pipistrelle day roost); • T111 (single common pipistrelle and single Myotis sp. day roost); • T159 (single soprano pipistrelle day roost); • T190 (single common pipistrelle day roost); • T200 (single soprano pipistrelle day roost); • T220 (single common pipistrelle day roost); • T234 (single soprano pipistrelle day roost); • T238 (two soprano pipistrelle's day roost); • T283 (single common pipistrelle day roost); • T325 (potential brown long-eared Plecotus auritus bat day roost along the tree line associated with T325, T326 and T327); • T326 (potential brown long-eared bat day roost along the tree line associated with T325, T326 and T327); • T327 (potential brown long-eared bat day roost along the tree line associated with T325, T326 and T327); • T365 (single common pipistrelle day roost);and • T371 (single common pipistrelle day roost). Where structures and trees were not subjected to a full suite of dusk emergence and dawn re-entry surveys, due to access restrictions, the likely presence of a bat roost was assumed using a precautionary approach. Five structures and 35 trees were precautionarily assessed as a bat roost, comprising; • B79, B80, B125, B126, and B127; and • T4, T11, T13, T16, T17, T18, T25, T26, T27, T28, T34, T36, T37, T165, T230, T265, T349, T376, T377, T419, T422 – T431, and T435, T491, T495, T496 and T499. Where practicable, trees containing roosts will be retained and an exclusion buffer of a minimum of 10 m demarcated around the identified tree to reduce disturbance during construction. The ECoW will assess potential for disturbance in response to the type, duration and extent of works proposed in proximity to known roosts, advising of the need to implement mitigation or else apply for a European Protected Species Licence (EPSL) to facilitate works. A EPSL application will be required where trees with confirmed bat roosts cannot be retained or safeguarded, and roosts will be lost. Further surveys to ascertain roost type, species present and number of bats may be required in advance of any EPSL application to allow the preparation of a suitable method statement detailing methods of felling and necessary mitigation for roost loss. Works will be undertaken in compliance with the licence when granted.		

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-BD-025	Maternity or hibernation bat roosts identified during baseline and pre-commencement surveys will be retained and an exclusion buffer of a minimum of 30m physically demarcated around any identified tree or structure to safeguard roosts from construction affiliated impacts. Should the ECoW determine that construction works type, duration, extent poses a risk to the integrity of a roost it may be necessary to implement seasonal restrictions on work outwith the recognised maternity or hibernation period for the species identified. Where this is not possible it will be necessary to apply for a EPSL, devising appropriate mitigation to mitigate for loss/disturbance to a roost. Maternity roosts known to date include T321 (noctule *Nyctulus noctula* maternity roost). It is not currently anticipated that any maternity or hibernation roosts will be lost as a result of construction of the DCO Proposed Development.	To avoid adverse impacts on protected species. To protect the Conservation Status of local bat populations	Construction Contractor
D-BD-026	The detailed design alignment of the Newbuild Carbon Dioxide Pipeline will wherever practicable, physically demarcate a minimum 10 m exclusion buffer around all buildings with confirmed bat roosts. Where this is not possible, potential impacts to roosts will be assessed in respect of the type, extent and duration of works proposed, by the ECoW. At the discretion of the ECoW it may be possible to reduce the exclusion buffer. Where risk of damage/disturbance of a roost persists after assessment, a EPSL will be applied for, with works only allowed to proceed following receipt of a granted licence from NE/NRW and implementation of any necessary mitigation.	To avoid adverse impacts on protected species To protect the Conservation Status of local bat populations.	Construction Contractor
D-BD-027	Trees proposed for felling or pruning that are recorded as Moderate or High suitability for roosting bats (see Appendix 9.3: Bat Activity Survey Report, Volume III) will be subject to an aerial tree-climbed inspection by a suitably licensed ecologist, and/or dusk emergence or dawn re-entry surveys (in line with best practice guidance at that time) no more than 24 hours prior to pruning/felling to confirm that baseline conditions remain the same (i.e. the absence of bats or roosts). Should a bat roost be recorded, a method statement detailing appropriate mitigation will accompany an EPSL application for submission to the relevant statutory body. Only upon receipt of a granted licence and implementation of necessary mitigation (as detailed within the licence application) can works take place.	To confirm the presence or absence of roosting bats.	Construction Contractor
D-BD-028	Pre-commencement surveys will be completed to update baseline survey results to inform the EPSL application or the Bat Mitigation Class Licence (if suitable). Full details of mitigation and compensation will be presented within the EPSL Method Statement and associated documents. Works will also be completed under a bat method statement, associated documents and work schedule (as part of the EPSL) and a PWMS (for land which falls outside the licensable extent) which will detail: • The method, scope and requirement of pre-commencement surveys. • The timing of works which will be agreed in advance with the relevant statutory body and dependant on the species and type of roost identified, following completion of updated pre-commencement baseline surveys. • Felling protocols. • Compensation requirements (for example, erection of compensatory bat boxes at an expected ratio of 3:1), which will be required to be installed ahead of any felling of trees covered within the EPSL. • Toolbox talks which will be carried out by the Named Ecologist (or accredited agent) and will provide a briefing to the site operatives to outline the planned works at each roost location, actions required if a bat is found, and their legal responsibility regarding bats and their roosts. Mitigation and compensation requirements subject to the agreement with NE/NRW.	To protect the Conservation Status of local bat populations.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-BD-029	Upon completion of pre-construction baseline surveys, where trees with features suitable to support roosting bats remain as Moderate or High suitability, and no roost is present, these will be 'soft felled' under supervision by a suitability experienced and bat licenced ECoW. Soft felling will consist of the removal of major branches and limbs followed by section felling of the main trunk. Sections of trees with features with suitability to support bats will be lowered to the ground for inspection by the bat licensed ECoW. In the event a bat or roost is identified works will cease and liaison with NE/NRW sought for further advice.	To protect roosting bats.	Construction Contractor
D-BD-030	Where practicable, and as the primary position, and at the discretion of the ECoW, where trees with features suitable for roosting bats (but absent of roosting bats as determined through surveys) are required to be felled to facilitate construction, these will be felled in such a way so as to retain the potential roost feature/s. These features will then be translocated and erected on nearby retained trees under direction of the ECoW or suitably bat licensed ecologist to retain future viability of the feature as a roost. Secondly to the above, where trees with suitable roost features (but absent of bat roosts as determined through surveys) are to be lost, and it is not practicable or possible to retain potential roost features for erection on nearby retained trees; veteranisation of retained trees and creation of monoliths will be explored within the Newbuild Infrastructure Boundary under direction of the ECoW or suitably bat licensed ecologist, to enhance landscape opportunities to support roosting bats. Monoliths may be moved from the original tree location and erected in alternative areas under the supervision of a bat licensed ecologist. Where trees with potential roost features are felled, nearby retained trees will be assessed for the potential of veteranisation, with a view to creating future roosting opportunities. Veteranisation will be conducted by a suitably experienced practitioner under the advisement of a bat licensed ecologist.	To maintain roosting opportunities within the landscape for bats.	Construction Contractor
D-BD-031	Where open cut trenching results in loss of sections of good or excellent assessed hedgerows, artificial (faux) hedgerow measures will be employed during construction to maintain the 'structure' of hedgerows to ensure bat foraging and commuting routes are not adversely impacted during works. Poor hedgerows will only be considered for artificial hedgerow deployment where they provide key connectivity into an excellent hedgerow, but as a default position will not be subject to faux hedgerow deployment. To mitigate impacts on identified bat foraging and commuting routes, artificial hedgerows will be utilised following removal of hedgerow sections throughout the construction period and until such time that reinstatement planting has been completed for good hedgerows, and until planting has established for excellent hedgerows. Establishment will be assessed by the ECoW (as part of post-construction monitoring of reinstated habitats – see the OLEMP Document Reference: D.6.5.10) and faux hedgerows only removed once establishment is considered successful (i.e. akin to the structure of retained hedgerow sections). Faux hedgerow design will be determined during detailed design of the DCO Proposed Development, but may include the use of straw bales, tall shrubs in pots, live willow screening.	To avoid adverse impacts to protected species and comply with conservation legislation To maintain commuting and foraging routes,	Construction Contractor
D-BD-032	Post construction, all hedgerows subject to hedgerow loss to facilitate construction will be reinstated with native species of local provenance in-keeping with the overall species compositions of hedgerows. Reinstatement will comprise a combination planting of whips and standard-sized shrubs. Planting shall be selected in order to match as close as possible, the height of any adjacent retained hedgerow. Hedgerows directly impacted as a result of pipeline construction (i.e. those not impacted as a result of compounds) will be reinstated within 1 year of impact. Hedgerows identified as Important Foraging and Commuting Routes (Important FCR) will be planted with whips alongside double the amount of standard-sized shrubs to provide more instant hedgerow structure. Important FRCs hedgerows are classified as those with bat activity levels considered significant for the conservation of the species recorded and that are retained as, or categorisation increased to, 'Excellent' as detailed within Appendix 9.4: Bat and Hedgerows Survey Report, (Volume III).	To avoid adverse impacts to protected species and comply with conservation legislation To maintain commuting and foraging routes	The Applicant / Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-BD-033	Following planting of all impacted hedgerows post construction, those hedgerows identified as Important FRCs will be supplemented through the retention of temporary flight lines via the use of artificial (faux) hedgerows (as detailed within D-BD-031) (the design of which to be agreed at detailed design) to maintain linear structure whilst planted sections establish. In addition, such hedgerows will be subject to monitoring through monthly crossing point surveys during the first active bat season following hedgerow reinstatement (period May to September inclusive) to determine use (or otherwise) by target species (for example lesser horseshoe lesser horseshoe *Rhinolophus hipposideros* and activity levels considered sufficiently high to affect the favourable conservation status of other species (e.g. brown long-eared bat *Plecotus auritus* and *Myotis* species). Where absence of use or reduced use when compared with baseline survey results is recorded, additional measures will be considered and introduced, for example, potential planting of larger shrub species to provide greater hedgerow structure. In instances where further planting is required, further crossing points surveys undertaken on a monthly basis across the subsequent active bat season will be carried out. Only once the planted hedgerow section has established to levels akin to the unimpacted hedgerow, as assessed by an appropriately experienced ecologist, can the artificial (faux) hedgerow be removed.	To avoid adverse impacts to protected species and comply with conservation legislation To maintain commuting and foraging routes	The Applicant / Construction Contractor
D-BD-034	A pre-commencement survey in search of evidence/activity of riparian mammals, namely otter and water vole, will be completed for watercourses crossed by the DCO Proposed Development and those within an appropriate buffer of proposed works. Surveys should include all sections of watercourses within the Working Width, extending to 150 m either side of the Working Width, as a minimum. This should also include watercourses not crossed but within potential disturbance distance of construction works at the discretion of the ECoW/appointed ecologist. Surveys will be undertaken at least 3 months prior to construction works commencing to confirm baseline conditions remain accurate and identify whether mitigation proposals remain accurate or else inform requirements for new mitigation and/or licencing. If otter rest sites or water vole burrows are recorded but an offence can be avoided through mitigation (either as detailed within this document or additional measures) the ECoW will develop an appropriate plan and work with the Construction Contractor to implement this.	To protect riparian mammals and update riparian mammal baseline data to inform an EPS Licence application.	Construction Contractor
D-BD-035	At watercourses with confirmed water vole presence (West Central Drain A and B, Hapsford Brook, River Gowy, Thornton Diches 4, 5a, 5b, 6, 7a, 7b and 8, Thornton Main Drain, and Gowy Tributary 2), vegetation clearance will be required as part of displacement method mitigation techniques, under licence as per best practice guidance. In the absence of a second survey visit (due to access restrictions), a precautionary assessment has been applied with presence of water vole assumed. These watercourses comprise East and West Central Drains and Elton Land Ditches, Gale Brook, Stanney Main Drain and Stanney Mill Brook, and Alltami Brook. Vegetation clearance (by strimming or turf stripping) will aim to make habitat unsuitable for water vole and will cover a maximum span of 50 m along each bank from proposed crossing locations where open-cut trenching is required. Vegetation clearance will be completed between February and April inclusive under supervision of a licensed ecologist and will be maintained until such time that works commence to ensure continued discouragement of water vole from proposed crossing locations. Vegetation clearance will only take place following confirmation that nesting birds are absent from the area of works if undertaken during the nesting bird season March to August inclusive. At the commencement of works, banks will be excavated under supervision of the ECoW (or other licensed ecologist) and burrows carefully excavated and destroyed. In the unlikely event water vole are encountered during the excavation process works will cease and consultation sought from NE/NRW.	To avoid adverse impacts to water vole and comply with conservation legislation.	Construction Contractor

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D-BD-036	Where culverts are to be installed, provision of mammal ledges to facilitate passage of mammals will be included, where practicable and where culvert design allows. This will include the incorporation of mammal ledges into the culvert design to provide safe passage for mammals. Where temporary culverts are to be installed, these will remain in place for as short a time as practicable only to serve facilitating construction. Reinstatement of habitats following culvert removal will be undertaken where considered necessary by the ECoW, or else left to naturally regenerate.	To avoid adverse impacts to protected species and comply with conservation legislation	Construction Contractor
D-BD-037	Whilst known barn owl roost and nest sites will be avoided and retained where possible, exclusion of barn owls from barn owl boxes and other features may be required under licence. Where this is required, a minimum of 30 days prior to the exclusion works, compensatory barn owl boxes (at a ratio 1:1) will be erected in suitable locations under supervision of an appropriately licensed ecologist, where practicable, within 250 m of the feature/box being excluded to compensate for the temporary loss of roosting and/or nesting sites. Erected boxes will be sited in locations that will not be subject to disturbance or impact by construction under the advice of a barn owl licensed ecologist. The following features are currently known to require exclusion prior to construction commencement: • Barn Owl Box - BOB3; and • Tree T465 Where a feature was not subjected to a full suite of vantage point surveys, due to access restrictions, the likely presence of a nest site was assumed using a precautionary approach. This applies to: • T471 Following the completion of construction works and the removal of construction compounds, any barn owl features temporarily excluded will be re-opened for use by barn owl.	To compensate for the temporary loss of barn owl nesting / rooting sites and protect barn owl.	Construction Contractor
D-BD-038	Trees recorded within the Newbuild Infrastructure Boundary with suitability to support roosting/nesting barn owl (Appendix 9.7: Barn Owl Survey Report (Confidential), Volume III) will be subject to an ecological inspection during the winter period (October – February inclusive) prior to works commencing. Where no evidence of nesting barn owl is visible, features will be temporarily blocked-up until construction works and activities within a 250 m have been completed. Upon completion of construction works, features will be unblocked.	To reduce the impacts of disturbance to barn owl	Construction Contractor
D-BD-039	Known barn owl roost or nest sites will be avoided and retained where possible. Where this is not possible, and where barn owl are likely to be temporarily impacted, suitable mitigation measures will be employed under licence, and will include the use of exclusion techniques (e.g. blocking up of features with material or otherwise affixing an exclusion device over a feature) on features suitable for use by barn owl (e.g., barn owl boxes or trees) prior to the nesting season (March to August). The means of exclusion will be assessed, and installation supervised by an appropriately licensed ecologist.	To comply with conservation legislation and protect barn owl	Construction Contractor
D-BD-040	Construction in proximity to barn owl nest sites that have not been subject to temporary exclusion measures (i.e. nests that have established after construction commencement) will be temporarily and spatially restricted to avoid or reduce impacts of disturbance in accordance with the criteria below (developed in accordance with good practice). • Pedestrian movement of a Low to Medium Disturbance Risk, e.g., site personnel walking near nests / roosts, will implement a Minimum Protection Zone of 20 m • Artificial lighting of a Low to Medium Disturbance Risk, e.g., illumination of works area (no direct lighting or nest/roost), will implement a Minimum Protection Zone of 30 m	To comply with conservation legislation and protect barn owl.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	• Vehicular movements of a Medium Disturbance Risk, e.g., vehicles or heavy plant moving past nest / roost sites, will implement a Minimum Protection Zone of 40 m • General light building and landscape works of a Medium to High Disturbance Risk, e.g., laying concrete, using mechanised plant will implement a Minimum Protection Zone of 60 m • Heavy construction of a High Disturbance Risk, e.g., piling or compaction works, ground levelling, crushing of materials will implement a Minimum Protection Zone of 175 m It is assumed that works will be undertaken during daylight hours, however, some night time work will be required. Where works need to be conducted within the minimum protection zone these will be discussed with the ECoW, and where necessary a barn owl licensed ecologist, who will assess the proposed works, duration and extent and potential use of mitigation to facilitate works. Where works are deemed to pose a significant risk to nesting barn owl, licensing may be required and/or the rescheduling of works to periods outwith the most sensitive period (March to June inclusive), however, this would be at the discretion of the ECoW/barn owl licensed ecologist.		
D-BD-041	Invasive Non-Native Species (INNS) are present within the Newbuild Infrastructure Boundary (Appendix 9.1: Habitats and Designated Sites Survey Report, Volume III). A Biosecurity Method Statement will be implemented throughout the construction of the DCO Proposed Development. The Biosecurity Method Statement will detail the locations and extent of any INNS identified, alongside appropriate measures to control and prevent spread or propagation of INNS. High-level recommendations for the treatment and removal of INNS will be identified. Appropriate good hygiene measures (e.g., Check, Clean, Dry methods will be detailed. Workers should be equipped with the necessary equipment, Personal Protective Equipment (PPE) and substances to implement biosecurity control measures, including effective hygiene and sanitation practices. This will most frequently comprise disinfectant tablets, sprayers, and brushes to clean and disinfect equipment and PPE prior to entering/leaving construction areas. Other noteworthy biosecurity considerations (e.g. avian flu, bovine TB) will also be referenced within the Biosecurity Management Plan.	To prevent the spread of invasive species and manage other biosecurity concerns.	Construction Contractor
D-BD-042	Where INNS are located and within the construction corridor, engagement of an INNS specialist will be sought whom will provide options for treatment and or removal in advance of construction. Any remaining stands of INNS will be subject to exclusion zones which will be clearly and physically demarcated and enforced around areas of invasive species to avoid spread or propagation. The extent of buffer will be determined by the species and in consultation with the ECoW. Biosecurity measures, as detailed within a Biosecurity Management Plan to be prepared at detailed design will be implemented during construction to prevent the spread of INNS.	To prevent the spread of invasive species and manage other biosecurity concerns.	Construction Contractor
D-BD-043	Vegetation and site clearance works will be undertaken outside the bird nesting period, recognised as March to August inclusive, to avoid damage or destruction of nests. Where this is not possible, site clearance will be preceded by an inspection from an experienced ECoW within 24 hours of clearance works commencing to confirm the absence of active nests or nesting activity. If an active nest or activity is recorded, a minimum exclusion buffer of 5 m within which no works can take place will be implemented (exclusion buffer size will be at the discretion of the ECoW and in response to the species of bird encountered) and remain in place until the nest is confirmed inactive (either eggs hatch and chicks have fledged, or the nest attempt fails). All cleared vegetation will be rendered unsuitable for nesting birds, for example, by covering or chipping depending on the end purpose of the vegetation or will be removed from the works area.	To protect nesting birds	Construction Contractor
D-BD-044	Given the confirmed presence of GCN within the below listed ponds, an EPS Licence will be required to enable the construction of the DCO Proposed Development.	To protect the Conservation Status	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	• England : 43, 46, 166, 167, 168, 169, 171; and • Wales: 9, 14, 15, 31, 35, 38, 49, 154, 155, 157, 161. The following ponds have been assessed as precautionarily having GCN presence: • England: 42, 47, 48, 49, 52; and • Wales: 10, 11, 12, 50, 121, 148. Although only a single pond (Pond 141) will be permanently lost as a result of the DCO Proposed Development, suitable terrestrial habitat in close proximity to known GCN ponds will be impacted. Works will proceed under a GCN Precautionary Working Method Statement (PWMS) and under ECoW supervision. This will include a provision for suitable timing of works to take place, i.e., where terrestrial habitat suitable for overwintering GCN is to be cleared, this will only be done during the active GCN season, generally from March to September, when overnight temperatures are consistently above 5°C. Clearance of such terrestrial habitat will be subject to inspection, at the discretion of the ECoW, in advance of clearance. Within England, works pertaining to GCN will be carried out under a Natural England District Level Licence. However, areas within the Red Risk Zone within England will not be covered under a District Level Licence and will be subject to a traditional EPS licence application, with avoidance and any necessary mitigation captured within the PWMS, supporting the licence application.	of local GCN populations.	
D-BD-045	Where suitable GCN terrestrial habitat will be impacted, either temporarily or permanently, habitat clearance will take place prior to construction works. This will be undertaken under a PWMS and ECoW supervision and will include: • Prior to the commencement on site, all site operatives will be provided a toolbox talk by the ECoW. This will include a description of the location of known GCN populations in proximity to the works area, legislative policy, identification of GCN and other amphibians, how works will proceed under a PWMS and what occurs in the event a GCN, or other species, is found. • The gradual strimming of vegetation following ECoW inspection of vegetation to a short sward. Vegetation should be inspected by the ECoW, and if clear, strimmed to 10 cm; then checked again by the ECoW before strimming to ground level. Vegetation should then be maintained as a short sward for the duration of the construction works. The use of GCN Detection Dogs will be considered to supplement the ECoW prior to works commencing. GCN Detection Dogs may be used across large areas of habitat and will aid inspections of woodland, hedgerows and grassland habitat that requires clearance or will be impacted by construction activities.	To protect GCN and other amphibians	Construction Contractor
D-BD-046	Where practicable, construction works will avoid works on watercourses during high flow events to reduce the risk of fine sediment release. The Detailed Design construction programme will seek to target construction activities involving watercourses for the drier summer months to reduce this risk, whilst taking into account the window for construction activities in relation to aquatic ecology and, in particular, fish migratory seasons. The ECoW will assess the need for mitigation and/or permits to facilitate construction to prevent adverse impacts as a result of construction. Only once mitigation and/or permits are in place can works then proceed	To avoid adverse impacts on water quality and aquatic species	Construction Contractor
D-BD-047	Turbidity and oxygen monitoring to be undertaken during the Construction Stage where deemed required due to the sensitivity of aquatic species receptors. The need and frequency of turbidity and oxygen monitoring would be determined by the regulatory authority and detailed in any required permits for undertaking work within or near watercourses.	To avoid adverse impacts on water quality and aquatic species	Construction Contractor
D-BD-048	Channel and banks will be reinstated to mimic baseline conditions as far as practicable to ensure more natural bank forms and in-channel features and morphological diversity. This includes reinstatement of an appropriate vegetation assemblage and structure	To minimise and avoid impacts to	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	within the riparian zone along with enhancements to the riparian zone to off-set impacts. Any tree loss would be compensated for in accordance with the site wide replanting strategy.	waterbodies and associated riparian and aquatic receptors	
D-BD-049	Any habitats within watercourses that have been removed will be reinstated, such as riffles, pools, point bars, berms, large wood, log jams, cross-sectional and planform variation. Any reinstatement will be ensured to not cause other potential impacts, such as increased flood risk.	To minimise and avoid impacts to aquatic habitats	Construction Contractor
D-BD-050	Where necessary and practicable, the installation of temporary culverts and causeways/access routes within watercourses will avoid sensitive fish migration and spawning periods: • 1 October to 31 April - European eel, lamprey and salmonids; and • 15 March to 15 June - Coarse fish. The requirement for such structures would be determined during the detailed design stage of the DCO Proposed Development. Where unable to be accommodated out with fish migration and spawning periods, liaison with NRW/EA will be required with applications for exemptions sought.	To avoid adverse impacts to protected species and comply with conservation legislation	Construction Contractor
D-BD-051	Temporary culverts required on main watercourses (i.e. not field ditches) will be suitability sized and designed/installed to Environment Agency Fish Pass standards (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/298053/geho0910btbp-e-e.pdf) to facilitate passage of eel, lamprey, salmonids and coarse fish species.	To avoid adverse impacts to protected species and comply with conservation legislation	Construction Contractor
D-BD-052	Temporary culverts and causeways/access routes will be removed as soon as practicable when no longer required.	To avoid adverse impacts to protected species and comply with conservation legislation	Construction Contractor
D-BD-053	Plant, personnel and site traffic will be constrained to a prescribed working corridor through the use of temporary barriers, where practicable, to firstly avoid and secondly minimise damage to habitats, encroachment of the construction easement, and potential direct mortality and/or disturbance of fauna located within and adjacent to the construction corridor.	To protect habitats and fauna.	Construction Contractor
D-BD-054	Temporary discharges will comply with the requirements for permits on Main Rivers from the Environment Agency and/or Natural Resources Wales, both regarding acceptable discharge volumes and water quality.	To avoid adverse impacts to sensitive watercourses and comply with conservation legislation	Construction Contractor
D-BD-055	In line with NPS EN-4, permanent habitat loss will be minimised along the DCO Proposed Development as far as reasonably practicable.	To avoid and minimise adverse impacts to habitats.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-BD-056	Where fish communities have been identified at a crossing point location, updated baseline surveys will be undertaken prior to works commencing and, where practicable, works will avoid risk of impacts to fish populations through seasonal timings of works to account for the migration and spawning periods of those fish species identified. Where it is not possible to avoid seasonal sensitivities, applications for exemptions from the Environment Agency or NRW will be sought on a case-by-case basis. Only upon receipt of granted exemptions and implementation of any necessary required mitigation can works commence.	To avoid adverse impacts to protected species and comply with conservation legislation	Construction Contractor
D-BD-057	Sensitivity (to noise and vibration) of those fish species present will be considered to ensure that appropriate construction methods can be implemented to minimise and avoid disturbance or avoidance behaviour. Implementation of a Noise and Vibration Management Plan, to be prepared at the Detailed Design stage, will include, where practicable; soft-starts to pile driving to enable fish dispersal, utilisation of press or vibratory pile driving methods, or bored driving methods and phased or intermittent work schedules (break periods) to allow for windows of fish recovery and movement through the works area.	To avoid adverse impacts to protected species and comply with conservation legislation	Construction Contractor
D-BD-058	Where possible, seasonal timings of works will aim to avoid risk of impacts to fish populations to account for sensitive life cycle stages (migration and spawning). Where this is not possible, applications for exemptions will be sought from the Environment Agency or NRW on a case-by-case basis. Seasonal restrictions for consideration are: • 1 October to 31 April - European eel, lamprey and salmonids; and • 15 March to 15 June - Coarse fish. Only upon receipt of granted exemptions and implementation of any necessary required mitigation can works commence.	To avoid adverse impacts to protected species and comply with conservation legislation	Construction Contractor
D-BD-059	Where works are required on the watercourse banks, or in-channel, vegetation clearance will be restricted to the minimum required for the construction working area and should be undertaken only immediately prior to the commencement of those works, except for other circumstances where earlier clearance may be required due to the presence of protected and / or notable species. Vegetation should be re-established as soon as practicable. If necessary, and where practicable (e.g. where difficulties in planting and establishment of vegetation are likely to occur), additional measures such as geotextiles (biodegradable and non-biodegradable), willow whips, mulching, brushwood mattresses etc. will be used to protect soils before vegetation has re-established, particularly on the watercourse banks.	To minimise adverse impacts to watercourses and associated riparian and aquatic receptors.	The Applicant / Construction Contractor
D-BD-060	Seeded biodegradable fibre matting will be used to encourage re-vegetation after works on, or near, the banks of each watercourse (except field drains unless otherwise advised by the ECoW) disturbed by the works to reduce establishment time and to help support bank structure. A suitable seed mix appropriate for the production of a tussocky species-rich sward will be used to mitigate for the loss of habitats suitable to support riparian mammals. Where appropriate, willow whips will be installed to both provide green bank protection and to mitigate loss of riparian habitat. A sediment boom will be used downstream of the temporary crossing to intercept any sediment artificially mobilised during the Construction Stage.	To minimise adverse impacts to watercourses and associated riparian and aquatic receptors.	Construction Contractor
D-BD-061	During any river dewatering and/or in-channel working, an ecological watching brief and fish rescue plan will be employed. Where areas are required to be temporarily dewatered to facilitate construction activities, fish will be removed by means of electrofishing under Environment Agency or NRW consent and relocated upstream prior to dewatering Suitable temporary channels may be implemented to divert water during culvert construction works. Any environmental permit(s) shall be obtained and in place prior to the creation of a temporary dry channel. The construction of a temporary dry channel shall be undertaken in accordance with the mitigation measures contained within the Detailed CEMPs and any other relevant measures prescribed by granted permits from	To avoid adverse impacts to protected species and comply with conservation legislation	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	NRW/EA. Works will be subsequently undertaken under ECoW supervision. A pump may be required to divert flows during construction. Where this occurs, the ECoW shall be in attendance and a 2 mm screen fitted on the transfer intake to minimise the risk of fish and eel entrainment.		
D-BD-062	Reinstatement of HPI habitats will take place post construction, however, recognising the need to reinstate with alternative habitats should former habitats potentially interfere with the buried pipeline (e.g. where trees are removed and cannot be reinstated, scrub will be planted as an alternative). Species will comprise native species of local provenance and will comprise a mixture of species (OLEMP (Document Reference D.6.5.10)). Planting should be undertaken in the appropriate planting season but as soon as possible following completion of the works to reduce the likelihood of undesired colonisation by flora or INNS. Non-HPI/BAP habitats impacted by construction will be reinstated on a like-for-like basis at the locations of loss/impact. Where adjudged appropriate, certain habitats may be left to naturally recover or otherwise be left to be managed by landowners, rather than be subject to dedicated mitigation planting/sowing (e.g. arable fields, pasture grassland). Habitats requiring mitigation planting/sowing will be determined during the detailed design of the DCO Proposed Development and captured within a final Landscape and Ecological Management Plan. Reinstated habitats will be monitored and managed for a minimum 5-year period post reinstatement. Any dead or dying plants will be removed and replaced during the monitoring period.	To compensate for the loss of habitats	The Applicant / Construction Contractor
D-BD-063	Where woodland and trees are to be lost to facilitate construction of the DCO Proposed Development these will be mitigated for through the planting of trees across areas identified within the D.2.4 -Work Plans. Trees will be replaced at a ratio of 3:1 and will comprise planting of native species of local provenance, in-keeping with woodland within the wider landscape. Areas for planting have sought to prioritise areas on the basis of connections to, and to enhance, existing green infrastructure, for example the inclusion of areas associated with functionally linked woodland of the Deeside and Buckley Newt SAC either side of Alltami Brook. Management of newly planted woodland and trees will be prescribed by the detailed LEMP but will broadly follow management across a 10-year period during establishment, to be developed at detailed design. Management of other habitat types (e.g. scrub and riparian planting) will be subject to a 5-year management plan.	To mitigate for the loss of woodland and trees	The Applicant / Construction Contractor
D-BD-064	The Construction Contractor will, as far as practicable, seek to reduce watercourse crossings for those watercourses that do not intersect the Newbuild Infrastructure Boundary, and/or those with a partial extent or reach within the Newbuild Infrastructure Boundary.	To minimise impacts on aquatic fauna and flora through a reduction of potential watercourse crossings	Construction Contractor
D-BD-066	Opportunities for enhancement will be identified during the detailed design and throughout construction of the DCO Proposed Development. Enhancement opportunities will be reflected within the detailed CEMPs as and where identified, but may include: • Where possible, cleared deadwood, felled trees and arisings from site clearance works will be used in a variety of locations to benefit wildlife. These locations will be determined by the ECoW and based on site conditions at the time. Materials will be stored in a suitable location away from the working area to prevent risk of damage and then placed within areas of retained woodland or woodland planting at an appropriate time.	To provide opportunities for biodiversity	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	• Additional bat and bird nest boxes could be installed on suitable mature trees/structures or mounted on poles. Bat boxes will be installed in unlit areas on multiple aspects (including facing south, west or east) at a height of a minimum of 3m and have a clear flight path to the access point. The bat boxes will be located within existing or newly created suitable foraging and commuting habitats. The requirements of the bird boxes will be specific to the type installed and manufacturers advice will be followed. The bat and bird boxes could be placed within existing retained woodlands, during construction or once mature, the boxes could be placed within newly created woodlands, (on poles or mature existing trees along the edge), post-construction.		
D-BD-067	During or following detailed design, the Construction Contractor will undertake a sensitivity test of the Habitats Regulations Assessment (HRA) should any of the project parameters change (as assessed within the HRA). The sensitivity test will seek to confirm that the conclusion of the HRA remain valid.	To protect biodiversity and ensure legal compliance with the Habitats Regulations	Construction Contractor
D-BD-070	All veteran trees assessed as 'retained with protection measures' within Appendix 9.11 – Arboricultural Impact Assessment will be protected and retained during detailed design, construction, operation and decommissioning.	To avoid adverse impacts to protected species and comply with conservation legislation	Construction Contractor

Table 6.7 - Construction Management and Mitigation – Greenhouse Gases

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-GG-003	The Detailed Design of the DCO Proposed Development will use efficient construction processes, such as embracing design for manufacture and assembly, where practicable.	Design optimisation to reflect the carbon reduction hierarchy.	Construction Contractor
D-GG-004	Maximising the opportunity to use more sustainable materials and products with reduce embodied carbon emissions and materials/resources featuring recycled content (where safe and of sufficient integrity for engineering), eventually supported with eco and carbon labels or verified Environmental Product Declarations (EPD) are preferred.	Design optimisation to reflect the carbon reduction hierarchy.	Construction Contractor
D-GG-005	Construction materials will be sourced from local suppliers and local waste disposal facilities will be used in the Flintshire and Cheshire regions where practicable.	Design optimisation to reflect the carbon reduction hierarchy.	Construction Contractor.
D-GG-006	Avoid disposal of construction waste to landfill, maximising recycling, and reuse of waste where possible.	Design optimisation to reflect the carbon reduction hierarchy.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-GG-007	Using modern and efficient low emission construction plant and delivery vehicles, and/or those powered by electricity from alternative/lower carbon fuels. Construction Contractors will ensure high performance of plant and equipment through correct and efficient operation, maintenance, and servicing of vehicle fleet to avoid polluting emissions.	Design optimisation to reflect the carbon reduction hierarchy.	Construction Contractor
D-GG-008	Training policies will be in place during site induction to avoid idling of engines, spills of fuels (for example when refuelling) and safe/environmentally sensitive driving techniques to maximise fuel saving.	Reduce GHG emissions associated with construction plant and equipment.	Construction Contractor
D-GG-009	The sustainability credentials of suppliers and companies in the supply chain will be considered as part of the procurement process.	Design optimisation to reflect the carbon reduction hierarchy	The Applicant / Construction Contractor
D-GG-010	Where practicable, innovative construction methods (for example, optimising gradients of haul and access roads/points) will be incorporated to reduce construction energy consumption, such as plant use and minimise the need for sharp acceleration and braking in order to save fuel.	Design optimisation to reflect the carbon reduction hierarchy	Construction Contractor

Table 6.8 - Construction Management and Mitigation – Land and Soils

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-LS-001	Temporary installation or upgrade of existing access tracks for the Construction Compounds and work-fronts will be set up Options include provision of bog matts (where wet soil conditions are anticipated) and compacted gravel tracks (where road-going vehicles or heavy traffic is anticipated).	To minimise disruption and local environmental impacts to land and soil.	Construction Contractor
D-LS-002	Routing of the Newbuild Carbon Dioxide Pipeline will be performed to avoid potential historical mine shafts or shallow workings identified by the CA, particularly in proximity to Alltami Brook, the A550 Gladstone way, Greenacres Animal Park, Colliery Lane, Magazine Lane and Wepre Brook.	To avoid risks from historical mine shafts	Construction Contractor
D-LS-003	Risk of shallow workings, in particular in proximity to Colliery Lane and Gladstone Way (Sections 4 & 5), will be considered within any construction plan and further works to establish their locations will be considered.	To avoid risks from historical shallow workings	Construction Contractor
D-LS-004	Where construction works would take place within areas of potential historic mine shafts, these areas will be cordoned off and only excavated if necessary for the installation of the Newbuild Carbon Dioxide Pipeline. The zone of the potential shaft will be determined from the co-ordinates available within the Coal Authority reports.	To avoid risks from historical mine shafts	Construction Contractor
D-LS-005	Any concrete used in below ground infrastructure will be selected based on the appropriate sulphate classifications.	To prevent damage to DCO Proposed Development	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
		Infrastructure from aggressive ground conditions.	
D-LS-006	The Material Management Plan (MMP) will provide a clear, consistent and efficient process to enable the reuse of excavated material without it being classified as a waste and outline a cut / fill balance to reduce the amount of material permanently removed during the construction of the DCO Proposed Development.	Assure correct management of soils	Construction Contractor
D-LS-007	An Outline Soil Management Plan (OSMP) (an appendix to the OCEMP, Document reference: D.6.5.4) has been produced to present options to manage the risk of damage to soil structure during construction and reinstatement. The findings of the OSMP will be used by the appointed Construction Contractor as a basis for preparing the detailed construction SMP, as part of a detailed Construction Environmental Management Plan (CEMP) prior to construction and the detailed design will take into consideration the location of BMV soils and the alignment of the Newbuild Carbon Dioxide Pipeline and working areas will seek to reduce impacts to and /or avoid these areas, as far as practicable.	Limit permanent removal of soils during construction phase Re-use of excess material. To reduce adverse impacts on land and soil	Construction Contractor
D-LS-008	An Outline Peat Management Plan (OPMP) (an appendix to the OCEMP Document reference D.6.5.4) was produced to provide a report estimating the potential volume of peat to be excavated during the construction process and present options to minimise / re-use excavated peat. The findings of the OPMP will be used by the appointed Construction Contractor as a basis for preparing the detailed construction PMP, as part of a detailed Construction Environmental Management Plan (CEMP) prior to construction.	To reduce adverse impacts on peat	Construction Contractor
D-LS-009	Any facilities for the storage of oils, fuels or chemicals will be sited on impervious bases and surrounded by impervious bund walls. The volume of the bunded compound should be 110% of the capacity of the tank, all filling points, gauges, vents and sight glasses will be located within the bund. Associated pipework should be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets will be detailed to discharge downwards into the bund and refuelling will be supervised at all times, preferably on an impermeable surface. This system will reduce the potential for the addition of new contaminants to the existing baseline environment (e.g., spill or leak)	Prevention of spills and leaks of hazardous substances	Construction Contractor
D-LS-010	If, during open trench construction and excavations, unexpected contamination is encountered, the open trench will be lined in order to inhibit water percolation and subsequent leachate generation.	Prevent pollution of Principal Aquifers in bedrock and Secondary A Aquifers in superficial deposits.	Construction Contractor
D-LS-011	Measures contained within the detailed CEMP to resolve impacts to land and soil will include: • Using appropriate risk assessments and method statements (RAMS) • All site operatives should follow hygiene best practices and be provided with the correct PPE (e.g. safety glasses, gloves and face masks where applicable) to reduce the risk of inhaling / ingesting / touching contaminated materials. • All site operatives will be made aware of the risks posed from ground conditions likely to be encountered during the construction, for example through toolbox talks before undertaking any works. • All site operatives will be fully trained and competent. There will be a trained and responsible manager on site during construction works, including any movement of the stockpiles.	Protection of construction and maintenance workers from ingestion / inhalation / dermal contact with contaminated soils.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-LS-012	Acute exposure to potential contamination will be mitigated through normal working practice using appropriate RAMS and use of standard PPE and hygiene best practice. Where contamination is suspected, construction workers will be provided with appropriate Personal Protective Equipment (PPE) or Respiratory Protective Equipment (RPE) (over and above the standard PPE) to prevent direct contact, ingestion or inhalation of potential soil or groundwater contamination.	Protection of construction and maintenance workers from ingestion / inhalation / dermal contact with contaminated soils.	Construction Contractor
D-LS-013	During construction, the use of bowsers for dust suppression in dry weather and wheel washes and road sweepers in locations where required will be employed to limit exposure pathways to human health, in particular to offsite neighbouring site users, nearby residential properties, or members of the public. As set out in D-AQ-004.	Protection of future site users from the short-term risk of exposure to contaminated dust through ingestion / inhalation / dermal contact.	Construction Contractor
D-LS-014	The Construction Contractor will appoint an appropriately qualified person (e.g., Environmental Clerk of Works (EnvCoW)) to maintain a Watching Brief for the duration of any ground excavations. The aim and scope of the Watching Brief will be to identify any unexpected contamination and advise on the correct course of action if discovered. Should unexpected Made Ground or unexpected contaminated ground (i.e., visual or olfactory evidence of contamination) be encountered during the construction phase the ECoW or equivalent qualified person will be notified. Testing of Made Ground for a minimum of asbestos, metals, petroleum hydrocarbons and polyaromatic hydrocarbons to assess suitability for re-use and potential risks to construction works should be undertaken.	To mitigate unacceptable contaminated land related risks to the environment and construction workers and ensure works are legally compliant	Construction Contractor
D-LS-015	Ongoing monitoring and maintenance will be undertaken to ensure that any temporary or permanent drainage in the main works area is meeting its operational requirements. This will prevent surface runoff and/ or contamination from entering surface water or groundwater bodies and migrating. Appropriate measures and maintenance procedures will be detailed in the detailed CEMP and OMEMP. Emergency procedures will be in place should a leak of contamination i.e., from a drainage failure or machine tank occur. These emergency procedures will be detailed in the detailed CEMP and OMEMP. Should a leak or drainage failure occur during construction the ECoW will be informed, and appropriate actions taken. Should a leak or drainage failure occur during operation, the Applicant will take appropriate actions.	To limit contamination to groundwater and surface waterbodies.	The Applicant / Construction Contractor
D-LS-016	Any unexpected disused below ground tanks, structures and / or pipework/ services encountered during construction that cannot be avoided will be appropriately decommissioned and removed (where necessary) by an appropriately qualified person as appointed by the Construction Contractor	To ensure that contaminants do not enter the ground.	Construction Contractor
D-LS-017	Should asbestos containing material (ACM) be encountered during the construction or soil testing indicate that asbestos fibres are present, then the EnvCoW should be notified.	To ensure that construction workers are not exposed to asbestos	Construction Contractor
D-LS-018	For excavation in areas of known Made Ground the EnvCoW should supervise the excavation to observe for visual or olfactory evidence of contamination or ACM.	To ensure that construction workers are not exposed to contamination or asbestos.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-LS-019	An Unexploded Ordnance (UXO) assessment will be undertaken for the Newbuild Infrastructure Boundary and will be used during the production of all risk assessments and method statements.	To prevent ground workers from UXO risk.	Construction Contractor
D-LS-020	Additional investigation including groundwater monitoring and analysis and ground gas assessment will be undertaken for points sources i.e., Stanlow Manufacturing Complex and Ewloe infilled land.	To provide information for the design stage and construction stage of potential contamination within the ground.	Construction Contractor
D-LS-021	If following D-LS-020 above remediation is determined to be required. A suitable remediation strategy will be produced following the additional Ground Investigation of point sources of contamination or if unexpected Made Ground is encountered during the construction phase. The remediation strategy will include a verification report which includes details of how the remediation strategy will be verified. The remediation strategy will be approved by the Local Authority (FCC / CWCC/ EA/ NRW) prior to being implemented to mitigate unacceptable contaminated land related risks. Ground gas measures are not considered necessary however following D-LS-024 the requirement for ground measures will be reassessed in the areas that are investigated.	To provide information for the design stage and construction stage of potential contamination within the ground.	Construction Contractor
D-LS-022	Areas of known Made Ground are discussed in Ground Investigation Report (Appendix 11.6, Volume III) [APP-137]. These areas of Made Ground have been tested and are below the GAC. They are therefore considered to be suitable for re-use within the DCO Proposed Development subject to confirmation of suitability for use at their destination location and in accordance with the MMP. Material re-use and excavation will be supervised in a watching brief to assess for previously unidentified Made Ground as set out in D-LS-018 of the REAC **(Document reference: D.6.5.1).**	To provide information for the design stage and construction stage of potential contamination within the ground.	Construction Contractor
D-LS-023	Prior to decommissioning, a Decommissioning Environmental Management Plan will be developed. Prior to development, consultation with relevant stakeholders will be undertaken. The approach/scope of the Decommissioning Environmental Management Plan will be agreed with the Local Authority prior to commencement.	To outline mitigation and manage risks during decommissioning of the DCO Proposed Development	The Applicant
D-LS-024	Groundwater and surface water monitoring plans will be developed by the Construction Contractor to ensure appropriate monitoring before, during and after the construction works. The details of this monitoring will be agreed between the Construction Contractor and the regulator (FCC/ NRW/ CWCC and the EA) prior to the commencement of the Construction Stage. These commitments.	To assess the water quality of Controlled Waters Receptors and maintain they do not become impacted during the works.	Construction Contractor
D-LS-025	Monitoring of gas ingress, such as mine gas, will be undertaken during trenching and drilling works where necessary. In addition, any trenches / excavations should be gas tested (as it is standard practice) prior to entry.	To avoid potential risk to human health	Construction Contractor
D-LS-027	In the event that there is an excess of excavated material off-site, re-use options will be explored following good practice and detailed in the final Peat and Soil Management Plans produced by the Construction Contractor(s).	Limit permanent removal of soils during construction stage Re-use of excess material. To reduce adverse impacts on land and soil	Construction Contractor

Table 6.9 - Construction Management and Mitigation – Landscape and Visual

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-LV-001	The Construction Compounds will, where relevant and practicable, be micro-sited to reduce the proximity to residential properties to minimise visibility and avoid key landscape features.	To minimise landscape and visual impacts	Construction Contractor
D-LV-002	Land disturbed to make way for Construction that isn't then utilised as part of the DCO Proposed Development during operation will be reinstated and returned to original land uses following completion of the Construction Stage, including consideration of effects to existing land drainage and reinstatement of any existing drainage features.	To minimise landscape and visual impacts, restoring original landscape where possible.	Construction Contractor
D-LV-007	The detailed design will consider further utilisation of trenchless installation techniques to maintain views from towpaths and recreational routes as well as vegetation associated with these features and/or roadside hedgerow. Any additional use of trenchless crossing method will consider the conclusions of the Environmental Statement, permit requirements and any other agreements to ensure that this would be acceptable.	To minimise landscape and visual impacts	Construction Contractor
D-LV-009	Prior to the commencement of construction, the Construction Contractor(s) will set out where reinstatement of arable land, fenced boundaries, hedgerows and grassland upon completion of construction will take place. This will include any protective fencing to areas of reinstatement that would typically remain in place to exclude livestock and allow establishment to take place.	To minimise landscape and visual impacts	Construction Contractor
D-LV-010	Pipeline marker posts and aerial marker posts will be located to minimise intrusion on the landscape, as far as practicable.	To minimise landscape and visual impacts	Construction Contractor
D-LV-011	Where construction will impact road verges, these will be reinstated and, where appropriate and practicable, enhanced through the addition of species rich grass mixes or similar as appropriate for the benefit of biodiversity.	To minimise landscape and visual impacts	Construction Contractor
D-LV-014	Where trees (stems) sit outside of the Newbuild Infrastructure Boundary, the Root Protection Areas (RPAs) of these trees will be protected and retained. Protective measures will be detailed within a site-specific Arboricultural Method Statement (AMS) and shown on a Tree Protection Plan (TPP) and where necessary, working methods will be monitored by a suitable Arboricultural Clerk of Works (ACoW). The Construction Contractor will prepare the AMS following detailed design and will ensure works within root protection areas will be appropriately supervised in line with BS5837:2012	To minimise landscape and visual impacts	Construction Contractor
D-LV-015	Ancient Woodland areas will be protected with a minimum 15m works exclusion zone. Where environmental mitigation works, drainage works or construction works in areas restricted by existing infrastructure occur within the Root Protection Areas (RPAs) of the ancient woodland, tree protection measures will be detailed within a site-specific Arboricultural Method Statement (AMS) and shown on a Tree Protection Plan (TPP). Where necessary, working methods will be monitored by a suitable	To minimise landscape and visual impacts	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	Arboricultural Clerk of Works (ACoW). The Construction Contractor will prepare the AMS approved as part of the CEMP.		
D-LV-016	All existing hedgerow, trees and groups of trees running parallel with the Millennium Greenway will be protected and retained. Any access requirements identified at detailed design will be sought via existing gaps in trees and hedgerow. Protective measures will be detailed within a site-specific Arboricultural Method Statement (AMS) and shown on a Tree Protection Plan (TPP) and where necessary, working methods will be monitored by a suitable Arboricultural Clerk of Works (ACoW).	To minimise landscape and visual impacts	Construction Contractor
D-LV-017	The hedgerow and tree T771 north of Townfield Lane, Mollington will be retained and protected. Protective measures will be detailed within a site-specific Arboricultural Method Statement (AMS) and shown on a Tree Protection Plan (TPP) and where necessary, working methods will be monitored by a suitable Arboricultural Clerk of Works (ACoW).	To minimise landscape and visual impacts	Construction Contractor
D-LV-018	The large linear belt of trees G1071 and G1073, west of Halls Green Lane will be retained to a minimum of half its current depth, approx. 20m width to ensure the characteristic of screening the motorway is retained	To minimise landscape and visual impacts	Construction Contractor
D-LV-019	Linear belts of trees G1075, G1078, G1086, G1087, G1088, G1089, G1091, G1093, G1094, G1098, G1109, G1134, at Halls Green Lane and to the west of Halls Green Lane will be retained to such a level that visual screening of the M56 and DCO Proposed Development from nearby PRoW and residents will be maintained	To minimise landscape and visual impacts	Construction Contractor
D-LV-020	The large linear belt of trees G1223 to the north of Ince Lane at the Chester Services will be retained to a minimum of half its current depth approx. 15m to ensure the characteristic of screening the Chester Services and associated roads from residents can be retained.	To minimise landscape and visual impacts	Construction Contractor
D-LV-021	Kiosks and lighting columns within the AGIs and BVSs will be painted to a colour that fits the context in which they are located. This will be RAL6011 for all locations with the exception of Stanlow AGI which may be left as galvanised or painted grey. This external finish paint colour will be subject to approval at detailed design stage with the precise shade specified at that time.	To minimise landscape and visual impacts	Construction Contractor
D-LV-022	Fences around the AGIs and BVSs will be PVC coated green to ensure the colour that fits the context in which they are located. This will be the case everywhere with the exception of Stanlow AGI which may be a standard galvanised finish or coated grey	To minimise landscape and visual impacts	Construction Contractor
D-LV-026	Along the Newbuild Carbon Dioxide Pipeline route, where loss of hedgerow, tree or woodland is otherwise unavoidable and takes place as a result of construction works, the loss will be replaced like-for like in a like-for-like location, unless otherwise prohibited by pipeline easement requirements or offset requirements from services. This will be in accordance with National Grid's Notes for guidance –Tree Planting Restrictions on Pipelines, as well as similar or any updated guidance notes for the relevant service provider as appropriate. Where this is the case, the replacement features will be planted as close to the original location as reasonably practicable and in agreement with the relevant Local Planning Authority.	To minimise landscape and visual impacts	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-LV-028	Hedgerows, trees and woodland which are located between trenchless crossing entry/exit pits (i.e., that Newbuild Carbon Dioxide Pipeline will cross via trenchless method) will be protected and retained, unless otherwise required for access. Protective measures will be detailed within a site-specific Arboricultural Method Statement (AMS) and shown on a Tree Protection Plan (TPP) and where necessary, working methods will be monitored by a suitable Arboricultural Clerk of Works (ACoW).	To minimise landscape and visual impacts	Construction Contractor
D-LV-030	Construction works will utilise existing accesses wherever practicable. Where new temporary construction accesses are required in existing hedgerows, the width to be lost will be kept to the minimum practicable and will not exceed 15m. Hedgerows, trees and woodland outside of this 15m will be protected and retained. Protective measures will be detailed within a site specific Arboricultural Method Statement (AMS) and shown on a Tree Protection Plan (TPP) and where necessary, working methods will be monitored by a suitable Arboricultural Clerk of Works (ACoW).	To minimise landscape and visual impacts	Construction Contractor
D-LV-031	The detailed design will seek to minimise the loss of tree groups G576 and G578 which are anticipated to be impacted to make way for a temporary access track.	To minimise landscape and visual impacts	Construction Contractor
D-LV-032	Where hedgerow, trees and woodland loss is unavoidable and takes place to make way for temporary access, these will be replaced on a like-for like basis and as close to the original location as practicable.	To minimise landscape and visual impacts	Construction Contractor
D-LV-033	During Detailed Design, further investigations will take place to ensure minimal tree loss takes place in areas where natural screening from hedgerow and linear belts of trees or woodland exist. This will be considered as part of decision making around the Newbuild Carbon Dioxide Pipeline alignment to avoid such loss.	To minimise landscape and visual impacts	Construction Contractor
D-LV-034	The Construction Contractor will ensure suitable landscape management through production of a Detailed LEMP to enable the establishment of all proposed vegetation in agreement with the relevant Local Planning Authority	To minimise landscape and visual impacts and ensure survival and establishment of mitigation planting	Construction Contractor
D-LV-035	Following the completion of the construction stage, once all planting is in place, a suite of drawings will be produced by the Construction Contractor referred to as ‘as built drawings’ or similar to ensure what has been constructed matches the proposed drawings, as well as forming a reference for on-going maintenance and associated record keeping.	To minimise landscape and visual impacts and ensure survival and establishment of mitigation planting	Construction Contractor
D-LV-036	During detailed design, where vegetation loss is identified to be unavoidable, and replacement cannot take place in like-for-like locations due to utilities constraints or the constraints of the proposed pipeline route, Table 1 of the OLEMP (Doc Ref: D.6.5.10) should be referred to in order to establish how to mitigate for these losses. Replacement blocks for vegetation have been identified and are shown on Appendix A Landscape and Ecological Mitigation Plan (Document Ref: EN070007 D.6.5.10.1.) of the OLEMP.	To minimise landscape and visual impacts and ensure survival and establishment of mitigation planting	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-LV-037	Any new tree planting will be offset from the Shropshire Union canal by a minimum of 5m to ensure that tree roots do not interfere with the clay lining of the canal. Alternatively, if planting is required within 5m of the canal then tree root barriers will be used to protect the canal from tree root damage.	To minimise landscape and visual impacts, ensure survival and establishment of mitigation planting and reduce impact upon canal structures.	Construction Contractor

Table 6.10 - Construction Management and Mitigation – Major Accidents and Disasters

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-MD-001	The construction stage(s) of the DCO Proposed Development will be managed through the implementation of the Construction Phase Plan (required under the CDM Regulations 2015).	To reduce the vulnerability of the DCO Proposed Development to the risk of MA&D events.	Construction Contractor
D-MD-002	The design, installation, commissioning, operation and maintenance of plant, drainage systems, equipment, and machinery, including associated systems, will implement Good Engineering Practice.	To manage risks related to MA&Ds.	The Applicant / Construction Contractor
D-MD-004	The DCO Proposed Development will be managed in accordance with accredited Environmental, Health & Safety Management systems.	To manage risks related to MA&Ds	The Applicant / Construction Contractor
D-MD-005	All construction risks will be managed in accordance with the CDM Health & Safety Plan and Construction Phase Plan.	To reduce the vulnerability of the DCO Proposed Development to the risk of MA&D events.	The Applicant / Construction Contractor
D-MD-006	The Proposed Development will be managed in accordance with supplier management environmental, health & safety standards (for example, Construction Skills Certification Scheme).	To reduce the vulnerability of the DCO Proposed Development to the risk of MA&D events.	The Applicant / Construction Contractor
D-MD-007	The Applicant will implement a risk management system.	To manage risks related to MA&Ds.	The Applicant / Construction Contractor
D-MD-008	The Applicant will implement a Construction and Environmental Management systems (including the CEMP).	To reduce the vulnerability of the DCO Proposed Development to the risk of MA&D events.	The Applicant / Construction Contractor
D-MD-009	The Applicant will prepare an Emergency Response Plan which covers potential emergency scenarios, as secured through the CEMP and the OMEMP under Requirements 5 and 17 of the dDCO (Document Reference: D.3.1)]. respectively. This Emergency Response Plan will be regularly tested through desk top exercises. During the development of the Emergency Response Plan, the Applicant will engage with the operators of COMAH sites in close proximity to the DCO Proposed Development. The off-site emergency	To reduce the vulnerability of the DCO Proposed Development to the risk of MA&D events.	The Applicant / Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	plans associated with these COMAH facilities will also be updated to consider the potential for initiating events on the Newbuild Carbon Dioxide Pipeline and associated infrastructure. During the preparation of the Emergency Response Plan the Applicant will also engage with the emergency services to agree the proposed response to a loss of containment event.		

Table 6.11 - Construction Management and Mitigation – Materials and Waste

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-MW-001	The Construction Contractor will ensure that the application of circular economy Principals will be followed, as implemented in the detailed CEMP, including: • Designing solutions to prevent the generation of waste where feasible, and to send waste for recovery, wherever possible. • Considering all stages of construction, operation and decommissioning in a lifecycle approach. • Identification of resource streams that might be considered by-products (i.e. not wastes, as per applicable legislation) and reused or recycled.	Effective design for the future.	Construction Contractor
D-MW-002	The Waste Management Plan will adhere to the highest tiers of the Waste Hierarchy, all relevant legislation and the Applicant's waste management procedures.	To identify opportunities to further reduce any waste. To reduce associated impacts such as potential harm to the environment. To monitor waste generation and disposal methods.	Construction Contractor
D-MW-003	Waste storage areas will be incorporated into the Detailed Design. Waste segregation measures will be put in place by the Construction Contractor as implemented in the detailed CEMP and WMP.	To maximise the potential for highest value reuse and recycling.	Construction Contractor
D-MW-004	The Construction Contractor will ensure that the backfilling of earthworks generated through trenching activities (subject to suitability of material) will be undertaken.	Construction methods with the potential to reduce adverse material asset and waste impacts	Construction Contractor
D-MW-005	The use of trenchless installation techniques will prevent additional material resource consumption and waste generation and disposal through the avoidance of infrastructure removal and replacement.	Construction methods with the potential to reduce adverse material asset and waste impacts	Construction Contractor
D-MW-006	The Construction Contractor will implement, and follow guidance within, the Materials Management Plan (MMP) in accordance with the CL:AIRE Definition of Waste: Code of Practice	To monitor the maximum reuse of both natural soils and Made Ground (contaminated or otherwise).	Construction Contractor

Table 6.12 - Construction Management and Mitigation – Noise and Vibration

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-NV-001	The Noise and Vibration Management Plan will detail the noise mitigation measures included in the Detailed Design, the noise and vibration limits to be met and a programme of noise and vibration monitoring which should be followed during the Construction Stage.	Provide a mitigation scheme based on final design. The Noise and Vibration Mitigation Plan will seek to avoid significant effects (daytime, evening and night-time), where reasonably practicable.	Construction Contractor
D-NV-002	Prior to construction works commencing, consultation will take place with the Local Planning Authorities Environmental Health Officers (or equivalent positions and/or further stakeholders as appropriate) to agree the parameters to be included in the Noise and Vibration Management Plan. This will include, but is not limited to, appropriate consents and agreements (e.g. Section 61) and best practice measures and specific mitigation measures to ensure that the noise and vibration effects reported in the ES is, as a minimum, achieved. The consultation will also cover the mitigation measures included to avoid significant effects during the operational phase.	Agreement of Noise and Vibration Management Plan	Construction Contractor
D-NV-003	The Construction Contractor will nominate a Community Liaison Representative (or equivalent title) who will be a nominated competent site contact for whom the contact details will be shared with local residents and other third parties within close proximity to the construction works, and will be displayed clearly within the site compounds. The Community Liaison Representative will be responsible for engaging with any noise or vibration related matters raised by third parties. Responsibilities should be clearly started in the Noise and Vibration Management Plan.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
D-NV-004	Construction works will utilise low noise generating plant and equipment and will adopt methods which minimise noise and vibration, wherever practicable.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
D-NV-005	Where required, temporary acoustic barriers will be considered around significant noise producing plant that are in close proximity to sensitive receptors. The locations of these screens will be optimised for acoustic mitigation whilst considering other potential impacts. The location and design of the temporary acoustic barriers will be detailed in conjunction with the Landscape Architect to ensure impacts upon landscape character and visual amenity are avoided and do not give rise to increased levels of effect as reported in Chapter 12 of the ES. Particular consideration will be given to PRoW, residential receptors and ecological receptors (including those assessed within the HRA).	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
D-NV-006	Optimal location(s) of all equipment with the potential to cause a significant effect on noise on site will be agreed with the Local Authorities as part of the Noise and Vibration Management Plan prior to construction to minimise noise disturbance to local sensitive receptors.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-NV-007	During construction, the Construction Contractor will ensure that the provision of acoustic enclosures around static plant, where practicable, is in place to reduce noise disturbance. The Noise and Vibration Management Plan will estipulate where this is necessary.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
D-NV-008	Construction vehicles will, wherever practicable, be fitted with less intrusive warning alarms, such as broadband vehicle reversing warnings.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
D-NV-009	Temporary noise screening methods and management such as low noise equipment, hoarding etc as per agreement with the Local Planning Authorities EHO (or equivalent positions and/or further stakeholders as appropriate) should achieve a minimum attenuation of 10 dB(A) at all sensitive locations during construction where the noise impact in the ES and HRA were identified. During detailed design, the Construction Contractor will explore further attenuation opportunities to mitigate any residual impacts at all sensitive locations, where required.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
D-NV-010	The construction and decommissioning programme will seek to minimise the duration of high noise generating construction activities, as far as practicably possible. Where construction and decommissioning activities near sensitive areas are expected to affect residents with a magnitude of medium and high, and exceed the durations of 10 or more days or nights in any 15 consecutive days or nights, or a total number of days exceeding 40 in any 6 consecutive months, then a set of enhanced mitigation measures will be discussed and agreed with the Local Authority. Temporary re-housing will be also considered through consultation with the Local Authority for specific locations where other mitigation measures do not provide sufficient attenuation to prevent sleep disturbance during activities in the night-time period.	Best Practicable Means to minimise noise and vibration impacts.	The Applicant / Construction Contractor
D-NV-011	The rating levels arising from the operation of the AGIs and BVSs is not expected to exceed the rating levels at the nearest sensitive receptors presented in the ES (Table 15-22, Table 15-23). Mitigation measures within the design envelope such as use of low noise plant and acoustic enclosures will be required for the AGIs and BVS if the proposed noise limits cannot be met.	Mitigation to minimise operational noise impacts.	Construction Contractor
D-NV-012	Construction works will be programmed to the following core hours: 8am to 6pm Monday to Friday (excluding bank holidays) and from 8am to 1pm on Saturdays. Any exceptions to this, such as for works associated with trenchless crossings or any other unexpected requirement to work outside of the core construction working hours, will be discussed and agreed prior to such works commencing with the Local Planning Authority's EHO (or equivalent position and/or further stakeholders as appropriate). This includes, where relevant, agreeing any additional noise mitigation with the EHO/s, and notifying local residents/communities of planned works outside of core construction hours prior to such works commencing.	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor
D-NV-013	Noise and vibration monitoring during the Construction Stage at locations stipulated in the Noise and Vibration Management Plan. As part of the Plan, a set of representative monitoring locations will be agreed along with actions for the Construction Contractor when the likelihood of significant effect is triggered	Best Practicable Means to minimise noise and vibration impacts.	Construction Contractor

Table 6.13 - Construction Management and Mitigation – Population and Health

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-PH-002	The Construction Contractor will promote the use of local workforce and suppliers, wherever practicable.	To minimise population and health impacts.	Construction Contractor
D-PH-004	The public will be informed of the nature, timing and duration of particular construction activities and the duration of the construction works by newsletters and liaison with the Applicant.	To minimise population and health impacts	The Applicant / Construction Contractor
D-PH-005	Construction Compounds will be set out and managed so as to reduce impacts on access to / from private property and housing, and community facilities as far as practicable.	To minimise population and health impacts	Construction Contractor
D-PH-006	Clear signage and directions for any alternative routes and appropriate alternative diversions will be provided and diversions clearly publicised to maintain access. Signage to advertise that businesses are open and operating as normal will also be provided where required.	To minimise population and health impacts	Construction Contractor
D-PH-008	Community Facilities will be consulted prior to construction where access arrangements will be directly affected. Traffic management systems and diversion routes will be put in place to maintain access to identified community facilities.	To minimise population and health impacts	Construction Contractor
D-PH-009	Vehicular access will be maintained at all times to community facilities which perform emergency service activities.	To minimise population and health impacts	Construction Contractor
D-PH-013	Construction activities that take place outside of St Oswald's School and Sandycroft County Primary School will be scheduled outside of term time where possible, to avoid potential disturbance and traffic delays.	To minimise population and health impacts	Construction Contractor
D-PH-014	Discussions will be undertaken with Greenacres Animal Park to ascertain the off-peak season and/or the most convenient period to undertake construction activities	To minimise population and health impacts	Construction Contractor
D-PH-015	Discussions will be undertaken with 2 Sisters Group to fully understand the implications of using the existing car park for construction and setting out a mitigation plan for the business. If additional parking spaces are required, the Construction Contractor will work with 2 Sisters Group to identify additional parking facilities offsite	To minimise population and health impacts	Construction Contractor

Table 6.14 - Construction Management and Mitigation – Traffic and Transport

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-TT-001	Careful consideration will be taken of the siting of temporary access points during construction. Access points will require the incorporation of site-specific and appropriate visibility splays, turning radii and, where deemed necessary or appropriate, speed limit reductions.	To minimise disruption to existing transport links.	Construction Contractor
D-TT-002	The Construction Contractor will follow the mitigation measures in the Construction Traffic Management Plan (CTMP) during construction works.	To achieve the following: Ensure movements of people, plant and materials are achieved in a safe, efficient, timely and sustainable manner; Ensure any impact to local communities and the local economy is reduced as far as reasonably practical; Ensure construction traffic levels do not exceed an acceptable level during network peak periods; Reduce and control construction vehicle trips where practical; Ensure that strategies and mitigation measures are implemented and adhered to through continued monitoring, review, and improvement; and Limit the effects of construction traffic on the local road network.	Construction Contractor
D-TT-003	Sensitive selection and specification of construction access points off the public highway to reduce wider traffic volumes in the surrounding area.	To reduce, where possible, traffic effects on links that would be more sensitive to changes in traffic volumes.	Construction Contractor
D-TT-004	The CTMP will provide details of construction traffic routes away from sensitive receptors to reduce impacts upon the wider area.	To reduce, where possible, traffic effects on links that would be more sensitive to changes in traffic volumes.	Construction Contractor
D-TT-005	Details of temporary diversions for footpaths are provided within the Outline CTMP, of which the Construction Contractor will implement on site.	To retain access to the PRoW.	Construction Contractor
D-TT-007	Control of HGV Traffic Movements and Timings. At the following junctions: • Deeside Lane/ Sealand Road	To reduce the effects of construction traffic on sensitive links or those with sensitive	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	• B5127/ B5125 • Brookside/ B5125 • B5125/ Upper Aston Hall Lane • A5119/ Starkey Lane	receptors such as school, or to minimise the impacts of construction traffic at junctions or links with capacity/ operational issues at specific times of the days.	
D-TT-008	Dilapidation Surveys, Maintenance, and Repair to ensure that the adopted highway is not left in a state of disrepair following use by DCO Proposed Development construction traffic. To include a photographic survey on all construction traffic routes to centralised compounds, AGI and BVS (extents to be agreed with LHAs) prior to construction and site walkover with relevant LHAs officer. All damage incurred following the construction phase to be remediated by the contractor.	To meet the requirements of Sections 59 of the Highways Act (1980); ensuring that extraordinary damage to the highway incurred as a result of the DCO Proposed Development is remediated	Construction Contractor
D-TT-009	Community Engagement and Public Information. Information regarding construction traffic activities and movements would be provided to the public. The means of communication would include online updates, letter drops, information boards and details of key contacts. The contractor would manage a 24-hour free telephone hotline and a project website.	To ensure that local communities are made aware of ongoing construction activities and can report issues and non-adherence by the contractor to agreed CTMP measures.	Construction Contractor
D-TT-010	Introduction of Temporary Traffic Regulation Orders – Speed Limits at Access Locations where required. Speed limits required to achieve visibility splays at all Primary Access Location are set out in the Access Principals Note (Annex D, Outline CTMP (Document Reference 6.5.4.3).	Ensure safe access to working locations and for other road users as well as maintaining appropriate visibility splays.	Construction Contractor
D-TT-011	Introduction of Temporary Traffic Regulation Orders – One-Way Systems on Construction Traffic Routes associated with the Picton Lane, Chorlton Lane, and Wood Farm centralised compounds as detailed on the temporary works plans for Centralised Compounds - presented in the Outline Construction Traffic Management Plan (Document Reference: 6.5.4.3).	Maintain the safe and effective flow of traffic on construction traffic routes; in particular ensuring that HGVs can safely access working locations and minimise as far as reasonably practicable, disruption to local communities and other road users.	Construction Contractor
D-TT-012	Temporary Traffic Management (e.g. Traffic Marshals, Temporary Traffic Signals, Hazard Warning Signage) on Construction Traffic Routes and at Access Locations – primarily at ‘Primary Access Locations’ i.e. Centralised Compounds and AGI/ BVS Sites. Temporary works plans for Centralised Compounds are presented in the Outline Construction Traffic Management Plan (Document Reference: 6.5.4.3).	Maintain the safe and effective flow of traffic on construction traffic routes; in particular ensuring that HGVs can safely access working locations and minimise as far as reasonably practicable, disruption	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
		to local communities and other road users.	
D-TT-013	Implement a Travel Plan. Travel plan to include measures to reduce single occupancy car trips via a car sharing scheme and the use of minibuses to transport workers to compounds and access locations.	Encourage sustainable travel behaviour; Reduce car usage (particularly single occupancy car journeys); Raise awareness of the sustainable transport measures serving the Site; and Minimise the impact of traffic on sensitive locations.	Construction Contractor
D-TT-014	Provide HGVs that are fitted with side guards and mirrors to enhance safety for cyclists and motorcyclists.	Address risk associated with identified trend of cyclist and motorcyclists' collision on construction traffic routes and minimise DCO Proposed Development impact on highways safety.	Construction Contractor
D-TT-015	Construction of the DCO Proposed Development will maintain vehicular and pedestrian access to residential properties and commercial businesses (although some traffic management measures may be required on those accesses). Access to agricultural land will be maintained where safe and practicable, and an alternative to the current access arrangements will be provided by the Applicant where the current access cannot be maintained during construction as outlined in the Outline Construction Traffic Management Plan (Document Reference: 6.5.4.3).	To reduce impacts upon sensitive receptors from access required for construction traffic	Construction Contractor

Table 6.15 - Construction Management and Mitigation – Water Resources and Flood Risk

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-WR-001	Construction works will avoid the positioning of temporary material stockpiles near to watercourses and will ensure material stockpiles are located outside of the flood zone where practicable. Welfare facilities and stored equipment and materials to be located within the compounds so that areas of high flood risk are avoided.	To minimise the impacts on surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-002	Construction works will ensure that a sufficient working area, as agreed by the Construction Contractor, is made available for effective sediment management for works within watercourses.	To minimise the impacts on surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-003	Temporary stockpiles will be located a minimum of 10m from the top of bank of any watercourse, where practicable.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-004	Where necessary temporary stockpiles will be protected by silt netting when not in use.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-005	Surface water runoff from construction works within 10m of watercourses will be treated by use of a sediment trap where required.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-006	Temporary drainage systems will be implemented near sensitive receptors to control surface water runoff, to alleviate both flood risk and help to prevent sediment laden runoff entering the watercourse.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-007	Temporary cut-off drains will be used uphill and downhill of the Construction Compounds to prevent clean runoff entering and dirty water leaving the working area without appropriate treatment.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-WR-008	All drains within the construction works areas will be identified and labelled and measures implemented to those considered most at risk of polluting substances from entering them.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-009	All new permanent connections of open drainage channels to receiving watercourses, as part of the detailed AGI/BVS surface water drainage strategy, will be constructed to reduce the impact on the geomorphology of the relevant watercourses.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-010	Areas with a greater risk of spillage (for example, vehicle maintenance and storage areas for hazardous materials) will be carefully sited (for example, away from drains or areas where surface waters may pond) and on an impermeable surface.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-011	Emergency response plans will be developed, and spill kits made available on-site.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-012	Measures to be put in place to prevent pollution from construction plant, vehicles and machinery including refuelling and lubricating in designated areas, on an impermeable surface, with appropriate cut-off drainage located away from watercourses; plant to be maintained in a good condition with wheel washing in place (avoiding vehicle cleaning near to existing watercourses), all refuelling would be supervised and carried out in a designated area. In the event of plant breakdown, drip trays would be used during any emergency maintenance and spill kits would be available on-site.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-013	Fuels and potentially hazardous construction materials would be stored in bunds that have areas with external cut-off drainage; fuel would be stored in double skinned tanks with 110% capacity.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-014	Construction plant will be checked regularly for oil and fuel leaks, particularly when construction works are undertaken in or near the existing waterbodies.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-015	Waste fuels and other fluid contaminants will be collected in leak-proof containers prior to removal from the construction area to an approved recycling processing facility.	To minimise the impacts of surface water quality,	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
		groundwater and flood risk.	
D-WR-016	Oil absorbent booms will be made available at construction compounds and works areas and will be deployed as soon as possible in the event of a significant spillage.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-018	Measures implemented to control spillage or pollution risks for site runoff or works within watercourses will be regularly inspected to ensure they are working effectively.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-019	Concrete wash out will only take place at designated concrete washout areas.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-020	Avoid pumping or similar processes of concrete over or adjacent to open water where possible and such works will be closely observed to ensure the swift shut off any pumps if a spillage occurs.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-021	Surface water run-off and excavation dewatering will be captured and settled out prior to disposal where practicable. The Construction Contractor will ensure that any contaminants are to be suitably removed prior to disposal.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-022	Temporary cofferdams will be used to exclude work areas from the waterbodies, thus reducing the risk of increased sediment loads or hazardous substances entering the main water flow.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-023	Where works are within 10m of watercourses, sediment barriers will be provided between earth works and the construction zone and the watercourse to prevent sediment from washing into the river. Silt management will be considered not only for areas adjacent to the watercourse, but also up the valley sides to minimise fine sediment input to the watercourse. Where practicable, there will be no works within 8m of watercourses. This extends to 16m for transitional waters and tidal defences.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-WR-024	Silt fences, silt traps, filter bunds, settlement basins and/or proprietary units' will be used to treat sediment laden water generated on-site before discharge.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-025	Sewage generated from site welfare facilities will be disposed of appropriately. This may be by discharge to the foul sewer network or by collection in septic tank for disposal off-site.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-026	Works will be undertaken in compliance with the relevant sections of BS6031:2009 Code of Practice for Earthworks (British Standards, 2009) with respect to protection of water quality and control of Site drainage including washings, dewatering, abstractions, and surface water.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-027	Clearance of vegetation on the channel banks, valley sides and riparian zone will be limited to the minimum practicable. A minimum of 8m, vegetated buffer strip between the construction zone and the watercourse will be retained, wherever practicable.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-028	Where works are required on the watercourse banks, or in-channel, vegetation clearance will be restricted to the minimum required for the construction working area and should be undertaken only immediately prior to the commencement of those works, except for other circumstances where earlier clearance may be required due to the presence of protected species. Vegetation should be re-established as soon as practicable. If necessary, and where practicable (e.g. where difficulties in planting and establishment of vegetation are likely to occur), additional measures such as geotextiles (biodegradable and non-biodegradable), willow whips, mulching, brushwood mattresses etc. will be used to protect soils before vegetation has re-established, particularly on the watercourse banks.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-029	The watercourse will be temporarily blocked and pumped over where practicable whilst the temporary crossing is constructed.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-030	Where practicable, construction works will avoid works on watercourses during high flow events to reduce the risk of fine sediment release and minimise the increase to flood risk from dewatering / hydrostatic testing discharges. The Detailed Design construction programme will seek to target the construction activities involving watercourses for the drier summer months to reduce this risk, whilst taking into account the window for construction activities in relation to aquatic ecology and, in particular, the fish migratory season.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-WR-032	Weather conditions will be monitored, and the contractor will sign up for the flood warning service. Where appropriate, action will be taken to halt works when information indicates a flood event or peak flows may occur.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-034	A groundwater management and monitoring plan (GWMMP) will be implemented alongside a CEMP. The GWMMP will consider: limits to the scale, depth and time of temporary dewatering by change of method or by division of works to reduce the zone of influence of dewatering; reduction in the use of damaging construction methods to aquifer physical properties such as consolidating; provision of (compensatory) discharges to Groundwater Dependant Terrestrial Ecosystems (GWDTEs) or use of water recycling during dewatering to support water level and flows where these may be reduced and provision of monitoring of water levels in nearby wells or surface water to enable/ identify further mitigation measures when needed.	To set out the monitoring strategy of the shallow groundwater where any dewatering activities are proposed, and to ensure all groundwater abstracted through construction is appropriately managed.	Construction Contractor
D-WR-035	The Dewatering Management Plan will provide a general framework for assessing the potential risks arising from dewatering. The Dewatering Management Plan will aim to keep the duration of pumping and the rates to a minimum which is achieved by minimising the required dewatering. The Dewatering Management Plan will summarise all licences and permits to abstract and discharge from dewatering works issued by the Environment Agency and/or Natural Resources Wales. In addition to permitting, the Dewatering Management Plan will include detailed description of the main discharge points, abstraction and discharge rates, equipment used and construction sequence, any authorisation and details of any pre-treatment required prior to discharge approved by the Environment Agency and/or Natural Resources Wales. The Dewatering Management Plan will also act as a vehicle for more specific and detailed assessment (as necessary).	To set out the dewatering strategy of groundwater where dewatering activities are proposed, and to ensure all groundwater abstracted through construction is appropriately managed	Construction Contractor
D-WR-037	Construction works will seek to minimise the loss of groundwater quantity from the water environment. Where practicable, water recycling practices, including re-use of hydrotest water, will be considered.	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-WR-039	Trench breakers (clay plugs) will be placed at regular intervals along the Carbon Dioxide pipeline trench where required to avoid preferential flow pathways being created which could impact groundwater flows to receptors	To minimise the impacts of surface water quality, groundwater and flood risk.	Construction Contractor
D-WR-041	• A Flood Action Plan will be developed and implemented for all construction compounds The Flood Action Plan will contain procedures to minimise the risk to construction workers and the measures will be reflective of the flood risk of each area but will include as a minimum a requirement for: • Where applicable the Construction Contractor/s will sign up to flood warning service to obtain information related to the area of the DCO Proposed Development and will check online warnings regularly in areas at risk of fluvial/coastal flooding. • Construction works will avoid working in the floodplain, where practicable • Weather forecasts will be regularly monitored so to avoid working in peak flows or when flooding is possible. If a flood warning is received from the Environment Agency or NRW, move all machinery and equipment out of any undefended floodplain. If this cannot be completed in a safe time, secure equipment to prevent it being washed away.	Flood Risk Management	Construction Contractor
D-WR-042	The Construction Contractor and the Applicant will ensure that all construction and operation staff are made aware and trained in the procedures of the Flood Action Plans	Flood Risk Management	The Applicant / Construction Contractor
D-WR-043	Surface water drainage solutions and discharge rates from construction compounds will be discussed with the LLFA.	Flood Risk Management	Construction Contractor
D-WR-044	Turbidity monitoring will be undertaken by an Ecological Clerk of Works (ECoW) during the construction phase where deemed required by the Construction Contractor's Environmental Manager due to the sensitivity of aquatic species receptors. The need and frequency of turbidity monitoring would be determined by the regulatory authority and detailed in any required permits for undertaking work within or near watercourses	Water quality protection	Construction Contractor
D-WR-052	A pre-works crossing point survey will be carried out to record channel and bank morphology and features, riparian zone structure, and collect photographic record, so that reinstatement is as close to baseline as practicable. Re-instatement works should be supervised by an appropriately qualified ECoW.	To minimise the impacts on surface water quality, groundwater, hydromorphology and flood risk	Construction Contractor
D-WR-054	A strategy for exceedance flows during pumping or pump malfunction will be implemented during peak flows. This will need to assess where the water would naturally flow in those instances and include appropriate control measures if a potential impact on third parties is possible e.g. in case of flows potentially affecting developed areas	Flood risk management	Construction Contractor
D-WR-055	The Construction Contractor will undertake further engagement with the Environment Agency Planning and Geomorphology Technical Specialists during the detailed design process to determine the required floodplain extent for pipeline burial depth below the existing river bed level of the Rover Gowy. This will determine the potential distance for setting back of the embankments (to a maximum distance of 100m) along the River Gowy to allow for the WFD Mitigation Measure to be achieved. This mitigation is required to enable the re-naturalisation of a sinuous planform of the River Gowy, as depicted in historical mapping records, without the risk of the pipeline becoming exposed	To minimise the impacts to geomorphology of watercourses.	Construction Contractor

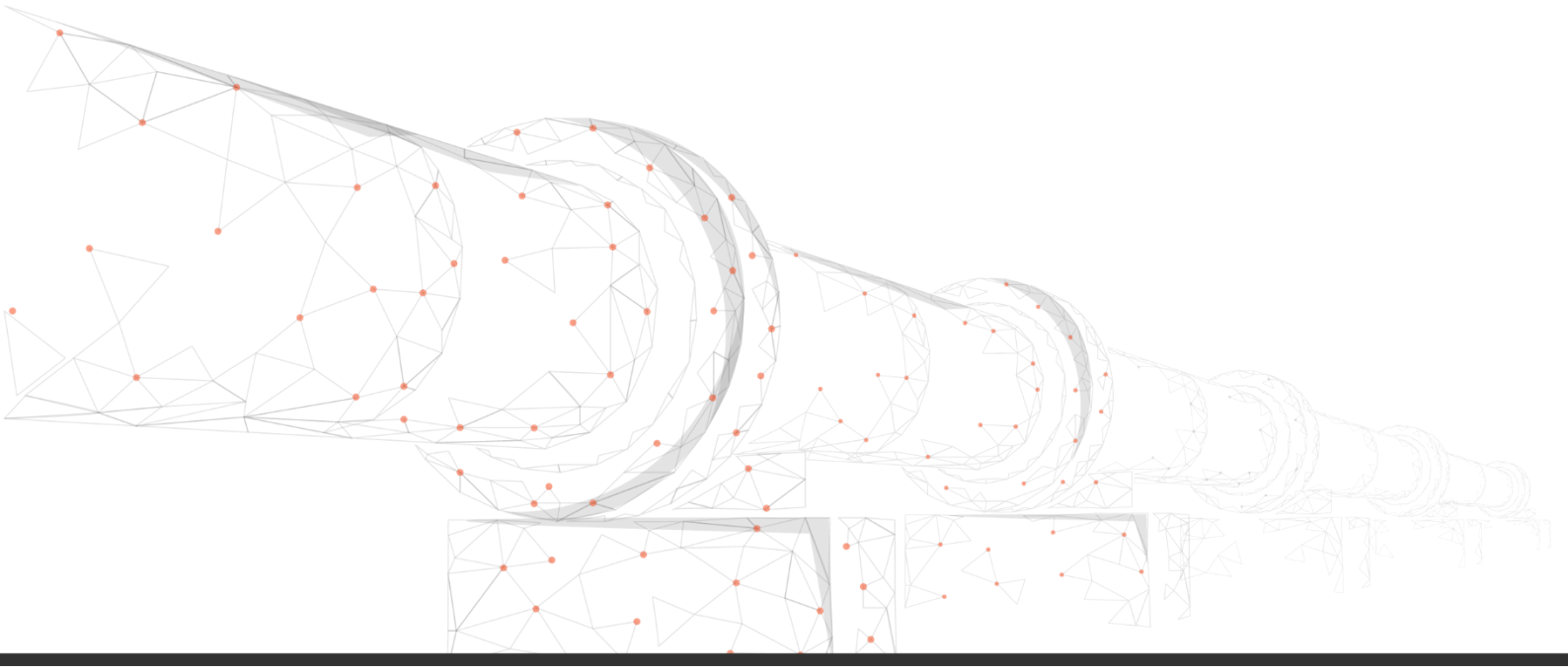
Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
D-WR-056	The Construction Contractor will undertake further consultation with Natural Resources Wales and the Lead Local Flood Authority Planning and Geomorphology Technical Specialists to determine the appropriate depth and extent of the pipeline placement so as not to prevent the future re-naturalisation of the Alltami Brook to a sinuous planform.	To ensure the DCO Proposed Development is WFD compliant	Construction Contractor
D-WR-058	Within construction compounds, the location of temporary structures and material avoid being sited in areas of medium or high surface water flood risk, as identified in the ES	To minimise risk of surface water flooding	Construction Contractor
D-WR-059	The Groundwater Management and Monitoring plan will set out the monitoring requirements, establish a protocol for the assessment and response to monitoring data and provide methods to assess compliance with the conditions of development consents, environmental protection licences and legislation relating to groundwater and GWDTE.	To minimise the risk of groundwater flooding and impacts from dewatering to groundwater receptors	Construction Contractor
D-WR-062	Riparian planting along Friars Park Ditch, Backford Brook and Finchetts Gutter Tributary, which is additional to the vegetation which would be reinstated from open cut crossings. This should be a mix of riparian trees and shrub species where practicable.	To provide mitigation for WFD impacts to these watercourses from removal of mature vegetation	Construction Contractor
D-WR-063	The width within which the works for the Alltami Brook Crossing will be contained will not exceed 16 metres within the riparian zone. Maximum width of bedrock channel permanently impacted from removal of bedrock will be no more than 4m. The depth of the cut would be at least 2.5m below bed level, but the depth would be confirmed during detailed design and with further consultation with NRW.	To minimise the impacts to geomorphology of watercourses. To ensure the DCO Proposed Development is WFD compliant	Construction Contractor
D-WR-066	Gravel augmentation will occur through the modified reach of Alltami Brook to off-set the potential reduction in spawning habitat. This will be designed in collaboration with the geomorphological assessment.	To offset potential reduction in spawning habitat. To ensure the DCO Proposed Development is WFD compliant.	Construction Contractor
D-WR-068	Ince AGI fence line will be located at least 8 metres away from the main watercourse to the north of it (i.e. East Central Drain). As far as reasonably practicable permanent earthworks will also be located 8 metres away from the watercourse at the detailed design. The	To minimise risk of concerns from LLFA and EA as	Construction Contractor

Unique ES Reference	Action/Commitment/Mitigation (including Monitoring Requirements)	Objective	Organisation/Individual Delivering Measure
	Environment Agency and the Lead Local Flood authority will be consulted on the detailed alignment for comments e.g. in relation to the proposed outfall into the watercourse.	part of the FRAP/ordinary watercourse consent process	
D-WR-069	The contractor will engage with the Canal and River Trust regarding construction close to waterway infrastructure.	To minimise risk of concerns from CRT	Construction Contractor
D-WR-070	The contractor will develop and implement a Surface Water Management and Monitoring Plan to ensure appropriate monitoring of water quality is carried out before, during and after the construction works and that adaptive mitigation is implemented if monitoring shows that existing mitigation measures are not deemed sufficient.	To minimise the impact to surface water bodies during the construction stage	The Applicant / Construction Contractor
D-WR-072	Prior to construction of the Proposed DCO Development, the Applicant will consult with Local Authorities for information relevant to unlicensed private groundwater abstractions. In the event that new information is forthcoming regarding previously unknown private abstractions, the Construction Contractor would look to understand the potential impact and provide appropriate mitigation	To inform further design and construction on the abstraction activities and provide appropriate mitigation.	The Applicant / Construction Contractor
D-WR-074	The Construction Contractor will ensure that where works are being undertaken in proximity to any existing outfalls from the M56 motorway they are maintained during the works to ensure the discharges from the SRN are not impeded.	Flood risk management	Construction Contractor
D-WR-075	If the design option of an embedded pipe bridge at Alltami Brook is to be taken forward: The design of the embedded pipe bridge will need to ensure a minimum freeboard of 300mm above the 1 in 100-year fluvial flood level including the allowances for climate change.	To inform further design and construction on flood risk management measures and provide appropriate mitigation.	Construction Contractor
D-WR-076	If the design option of an embedded pipe bridge at Alltami Brook is to be taken forward: A hydraulic model for this section of the Alltami Brook will be undertaken during the detailed design stage to confirm the design parameters such as the soffit level, freeboard levels and will also inform the application for a flood risk activity permit for the Alltami Brook embedded pipe bridge crossing option.	To inform further design and construction on flood risk management measures and provide appropriate mitigation.	Construction Contractor

7. REFERENCES

- **Ref. 1.1:** Planning Act 2008 (November 2008). Available at: https://www.legislation.gov.uk/ukpga/2008/29/contents
- **Ref. 1.2:** The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Available at: https://www.legislation.gov.uk/uksi/2017/572/contents/made
- **Ref. 1.3:** Outline Environmental Management System (EMS) requirements (in accordance with ISO 14001). Available at: https://www.iso.org/iso-14001-environmental-management.html

Appendicies



Appendix 1

OUTLINE SOIL MANAGEMENT PLAN

OUTLINE SOIL MANAGEMENT PLAN

Document Reference: D.6.5.4.1

Appendix 2

OUTLINE PEAT MANAGEMENT PLAN

OUTLINE PEAT MANAGEMENT PLAN

Document Reference: D.6.5.4.2

Appendix 3

OUTLINE PUBLIC RIGHTS OF WAY MANAGEMENT PLAN

OUTLINE PUBLIC RIGHTS OF WAY MANAGEMENT PLAN

Document Reference: D.6.3.16.2

Appendix 4

OUTLINE DUST MANAGEMENT PLAN

OUTLINE DUST MANAGEMENT PLAN

Document Reference: D.7.24

Not submitted at Deadline 4.

Appendix 5

OUTLINE MATERIALS MANAGEMENT PLAN

OUTLINE MATERIALS MANAGEMENT PLAN

Document Reference: D.7.32