Net Zero Teesside – Environmental Statement

Planning Inspectorate Reference: EN010103

Volume III – Appendices

Appendix 5A: Framework Construction Environmental Management Plan (CEMP) including SWMP

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended)

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5A. Framework Construction Environmental Management Plan (CEMP)

5.1 Introduction

5.1.1 This document presents a framework for the Construction Environmental Management Plan (CEMP). The Final CEMP will be produced for the Proposed Development following the appointment of the contractor in accordance with a requirement of the Development Consent Order (DCO).

5.1.2 This Framework CEMP sets out a series of proposed measures that would be applied by the contractor to provide effective planning, management and control during construction to control potential impacts upon people, businesses and the natural and historic environment.

5.1.3 Potential impacts have been identified through the Environmental Impact Assessment (EIA) process and are reported in the Environmental Statement (ES Volume I, Document Ref. 6.2). A range of 'standard' or best practice mitigation and construction management measures were accounted for in the assessments presented within the ES and which will be implemented during construction of the Proposed Development. This Framework CEMP demonstrates how these commitments in the ES will be implemented. It also sets out the monitoring and auditing activities designed to demonstrate that such mitigation measures are carried out and that they are effective.

5.1.4 The Final CEMP will be produced in line with this framework document following receipt of development consent and must be approved by Redcar and Cleveland Borough Council (RCBC) and Stockton-on-Tees Borough Council (STBC). The need for a detailed Final CEMP to be produced in this manner will be secured through a requirement in the draft DCO.

5.1.5 The Final CEMP will include:

- a code of construction practice, specifying measures designed to minimise the impacts of construction works;
- a scheme for the control of any emissions to air;
- a soil management plan;
- a sediment control plan;
- a scheme for environmental monitoring and reporting during the construction of the authorised development, including measures for undertaking any corrective actions; and
- a scheme for the notification of any significant construction impacts on local residents and for handling any complaints received from local residents relating to such impacts during the construction of the authorised development.

5.1.6 This Framework CEMP has been produced in conjunction with the ES (Document Refs. 6.2 to 6.4) with the aim of ensuring that design and impact avoidance measures reported in the ES are implemented and are effective, together with any additional mitigation measures proposed to reduce significant adverse effects. Site-specific controls, which will be included within the Final CEMP, would be developed taking the measures set out in this Framework CEMP into account.

5.1.7 It is expected that the contractor will comply, as a minimum, with applicable environmental legislation at the time of construction, together with any additional environmental controls imposed by the DCO. The Final CEMP will be designed with the objective of compliance with relevant environmental legislation and the mitigation measures set out within the ES and this Framework. Any additional construction licences, permits or approvals that are required would be listed in the Final CEMP, including any environmental information submitted in respect of them. This Framework CEMP covers the principal construction activities envisaged at the time of preparation of the ES. The final scope will be determined through consultation with RCBC, STBC and other relevant regulatory authorities. The key elements of the Final CEMP will include:

- an overview of the Proposed Development and associated construction programme;
- prior assessment of environmental impacts (through the EIA);
- reduction of potential adverse impacts through design and other mitigation measures;
- corrective action procedure; and
- links to other complementary plans and procedures.

5.1.8 In summary, the Final CEMP will identify how commitments made in the ES will be translated into actions on Site and includes a schedule for implementing the actions through allocation of key roles and responsibilities.

5.1.9 The Appointed Contractors will be responsible for working in accordance with the environmental controls documented in the Final CEMP. The overall responsibility for implementation of the Final CEMP will lie with the Applicants.

5.1.10 The Final CEMP will be designed with the objective of compliance with the relevant environmental legislation and the mitigation measures set out within the ES. It should be read alongside any other environmental documents related to the construction phase and the ES submitted in support of the DCO application.

5.1.11 Any additional construction licences, permits or approvals that are required will be listed in the Final CEMP, including any environmental information submitted in respect of them.

5.2 Construction Programme

5.2.1 The current expectation is that the construction works will be split into three phases.

5.2.2 The most likely construction programme is currently anticipated to be the construction of the Proposed Development in a four-year construction phase commencing shortly after the DCO is granted (expected in Q4 2022). Table 5A-1 provides an indicative construction programme.

5.2.3 Construction working hours will generally be Monday to Friday 07:00 to 19:00 and Saturday 07:00 to 13:00, however it is likely that some construction activities will be required to be 24 hours at certain times. This is principally construction activities that cannot be stopped, such as concrete pouring. Where on-site works are to be conducted outside the core hours, they will comply with the restrictions stated in this Framework CEMP and any other restrictions agreed with the planning authorities.

5.2.4 Activities that could generate a noise nuisance will not be undertaken at night, including but not limited to sheet piling, piling, use of impact wrenches, concrete scabbling, use of reversing sirens, and concrete jack hammering. Construction noise limits will need to be in compliance with the construction noise scheme agreed with relevant planning authority.

5.2.5 Detailed descriptions of the construction methods for each of the development areas is provided in Chapter 5: Construction Programme and Management (ES Volume I, Document Ref. 6.2).

Table 5A-1: Indicative Construction Programme

	2022				2023				2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Enabling works																				
Site establishment																				
RBT and Infrastructure Modifications																				
Tees and Dunes/Foreshore Crossings																				
PCC Construction																				
PCC Utilities																				
Electrical Connection																				
Gas Connection																				
CO_2 Gathering Network																				
Commissioning																				

5.3 Construction Laydown and Welfare Facilities

5.3.1 Proposed construction laydown areas, including storage, site offices, welfare facilities and car parking, will be located at various places within the Site boundary (see Works Plans, Document Ref. 4.4).

5.3.2 Clearance, levelling and ground preparation works for these laydown areas may be required to provide a suitable surface material. The surface material will be permeable so as to allow rainwater to percolate to ground, with suitably bunded locations identified as storage areas for any hazardous or polluting materials or chemicals to reduce the risk of pollution.

5.4 Traffic Management and Off Site Delivery Routes

5.4.1 During construction, the Appointed Contractors will ensure that the impacts from construction traffic on the local community (including local residents and businesses and users of the surrounding transport network) are minimised, where reasonably practicable. This will be ensured by implementing the measures set out in the Framework Construction Workers' Travel Plan (CWTP) and the Framework Construction Traffic Management Plan (CTMP) (ES Volume III, Appendix 16B and 16C) respectively; final Plans will be secured by Requirements 19 and 20 of the draft DCO (Document Ref. 2.1).

5.4.2 The Framework CTMP provides details of the designated routes for HGV movements. It is proposed that construction HGVs associated with the construction on the PCC Site (including containerised deliveries arriving via Teesport) will arrive and depart the Site via the entrance on the A1053 Tees Dock Road and the internal site road network running from south-east of Teesport to the PCC Site. The same access will be used for construction traffic for the HP Compressor Station, CO_2 Export Pipeline and Water Connections. It is anticipated that the bulk of HGV traffic will access Tees Dock Road, via A19 and A66 or A174. However, some local HGV traffic may access the Tees Dock Road from the north-east via the A1085 Trunk Road.

5.4.3 To minimise the impacts on the local highway network it is proposed to import large modular plant and Abnormal Indivisible Loads (AILs) for the Low-Carbon Electricity Generating Station using the wharf at the Redcar Bulk Terminal (RBT). These AILs will be delivered by sea then moved from the RBT wharf to the PCC Site using the existing internal Teesworks roads. AILs weighing less than 100 tonnes in weight may also be brought in through Teesport and none are proposed to be delivered on the public highway.

5.4.4 Materials required to carry out the construction of connections outside the PCC Site including on the north bank of the Tees will be delivered direct to the connections worksites and laydown areas rather than the site entrance.

5.4.5 Construction workers will access the PCC Site and construction areas on the south bank from the main site entrance located off the A1085 / West Coatham Lane Roundabout. Construction workers on construction sites on the north bank of the Tees will access laydown areas in this area via the A1048, A1185, A178, B1275, Cowpen Bewley Road, Seaton Carew Road, and Seal Sands

Road. On-site parking will be provided for construction worker's vehicles both north and south of the Tees.

5.4.6 The Final CEMP will provide final details of the designated routes for HGV movements and worker car movements, with reference to the CWTP and CTMP.

5.5 Spoil Management

5.5.1 Spoil will primarily arise from the construction of tunnels (and associated shafts) and bores associated with the Natural Gas Connection, Water Discharge Connection (outfall), CO_2 Export Pipeline and CO_2 Gathering Network (see above).

5.5.2 The ISBL and OBSL Contractors will take all reasonable measures to apply the waste hierarchy which is, in priority order, as follows:

- prevention;
- reuse;
- recycling or recovery; and
- disposal.

5.5.3 During enabling works and construction, spoil arising will be temporarily stockpiled within the Site boundary before either beneficial re-use on site for use in development platform construction or being taken off-site by HGV for treatment and/or disposal at a local permitted facility (in the local area) or for reuse in other development sites in the area.

5.5.4 Measures to minimise the impact of spoil on flood risk and water quality are outlined in Table 5A-3 below. Spoil will be stockpiled in areas at low risk of flooding (Flood Zone 1) within the Site boundary on the Teesworks site or on the laydown area at Seal Sands. The size of the stockpile(s) will be minimised where possible by excavation works being constructed in parallel with development platform construction which will utilise spoil arisings where these are geotechnically or chemically suitable. In addition, there will be progressive off-site removal of geotechnically unsuitable or contaminated materials for re-use, treatment and/or disposal. Stockpile heights will therefore be low and there is sufficient area within the Site boundary to accommodate the volume of spoil expected to be generated.

5.5.5 Suitable measures will be put in place to prevent sediment being washed into watercourses, and the stockpiles will be visually monitored for wash away during and after periods of prolonged rainfall.

5.5.6 Spoil will be sampled and any contaminated spoil identified will be managed in accordance with the Site Waste Management Plan (SWMP) and a Material Management Plan (MMP) which will be prepared and appended to the Final CEMP. A Framework Site Waste Management Plan (SWMP) has been developed as part of the Framework CEMP (Annex A), which allows for waste streams to be estimated and monitored and goals set with regards to the waste produced. The Framework SWMP is appended to this CEMP as (Appendix 5A, ES Volume III, Document Ref. 6.4). The MMP will specify that any potentially contaminated soils will be managed in accordance with:

- Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites (Defra, 2009); and
- Definition of Waste: Development Industry Code of Practice (CL:AIRE, 2011).

5.5.7 Any suspected contaminated spoil will be placed on an impermeable membrane to prevent the leaching of any contaminants into the subsurface or watercourses. Site specific Screening Verification Criteria for the classification of soils for re-use or disposal will be derived by the Applicants in accordance with the MMP.

5.5.8 All spoil will be processed and managed in accordance with The Waste (England and Wales) Regulations 2011 (as amended).

5.6 Recycling and Disposing of Waste

5.6.1 In order to control the waste generated on Site during site preparation and construction, the contractor will separate the main waste streams on Site, prior to them being taken to a waste facility for recycling or disposal. As outlined above spoil will be beneficially used onsite where possible to minimise the amount of spoil that requires treatment or disposing of offsite.

5.6.2 A Site Waste Management Plan (SWMP) will be included in the Final CEMP, which will specify the waste streams to be estimated and monitored and goals set with regards to the waste produced. Under the DCO requirements, the SWMP must be submitted to and approved by the relevant planning authority before construction works commence. A Framework SWMP is appended as Appendix A of this document.

5.6.3 The SWMP will require that the contractor segregates waste streams on-site, prior to them being taken to a licensed waste facility for recycling or disposal. All waste to be removed from the Site will be undertaken by fully licensed waste carriers and taken to licensed waste facilities.

5.7 Management and Mitigation Plan

5.7.1 This section of the Framework CEMP sets out the mitigation and management measures to be included as a minimum in the Final CEMP. It also illustrates how the monitoring strategy will be set out and the responsible party identified for each mitigation/ enhancement measures or monitoring requirement.

Table 5A-2: Air Quality

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Increased NO_2 and PM_{10} from on-site demolition and construction vehicle/ plant emissions. Increased particulates and deposited dust from soil and spoil movements and handling.	Appropriate standard and best practice control measures will be included in the Final CEMP, which may include: • Avoid mechanical roughening or grinding of concrete surfaces, where appropriate. • Cutting and grinding operations, if required, will be conducted using equipment and techniques that reduce emissions and incorporate appropriate dust suppression measures; • Prohibit open fires on Site; • Damping down of dust-generating equipment and vehicles within the Site and the provision of dust suppression in all areas of the Site that are likely to generate dust; • Measures to keep roads and accesses clean; • Covering materials, deliveries or loads entering and leaving the construction site for the purposes of preventing materials and dust spillage in transit; • Vehicles transporting materials within or outside the construction site will not be overloaded; • Where possible, locating static plant away from sensitive boundaries or receptors; • Stockpiles and mounds will be kept away from sensitive receptors, watercourses and surface drains where reasonably practicable, and sited to take into account the predominant wind direction relative to sensitive receptors;	To be confirmed in Final CEMP.	Appointed Contractors

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	• Minimise operating time outside of normal working hours/ daylight hours. • Store sand and aggregates in bunded areas and store cement powder and fine materials in silos, where appropriate; • Use water suppression and regular cleaning to minimise mud on roads, and control dust during earth moving activities; • Employ wheel wash systems at site exits; • Restrict where practicable the use of unmade road accesses; • Minimising duration of stockpiling of topsoil or spoil during pipeline construction; • Materials stockpiles likely to generate dust will be enclosed or securely sheeted, damped down or stabilised as appropriate; • Mixing of grout or cement-based materials will be undertaken using appropriate techniques/mitigation suitable for the prevention of dust emissions. Good practice will also be employed for the siting and operation of non-road mobile machinery to control associated emissions, including: • Minimise vehicle and plant idling; • Vehicles and plant will be switched off and secured when not in use and construction vehicles will conform to current emissions standards; • Vehicle, plant and equipment maintenance records will be kept on-site and reviewed regularly; • Where possible, locating static plant away from sensitive boundaries or receptors; and, • Minimise operating time outside of normal working hours/ daylight hours. Haul routes: • High usage haul routes will be surfaced and maintained so as to control dust emissions, as far as reasonably practicable. The		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	frequency of cleaning will be suitable for the purposes of suppressing dust emissions from the site boundaries; • Restrict where practicable the use of unmade road accesses; • Regular inspection of haul routes and prompt repair (if required) will be undertaken; and • Enforcement of speed limits on haul roads for safety reasons and for the purposes of suppressing dust emissions will be implemented.		

Table 5A-3: Surface Water, Water Resources and Flood Risk

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Deposition of fine sediment Leakage or accidental spillage of building materials and potentially polluting materials used on Site, migrating to nearby surface watercourse of infiltrating to groundwater. Flood Risk	The contractor will comply with relevant Good Practice Guidance documents, to be detailed in the Final CEMP and a Maintenance and Management Plan approved by the relevant planning authority (following consultation). The Final CEMP will be supported by a Water Management Plan (WMP) that would be included as a technical appendix. The WMP will provide greater detail regarding the mitigation to be implemented to protect the water environment from adverse impacts during construction. The contractor will ensure that construction staff are fully aware of the potential impact to water resources associated with the construction works and procedures to be followed in the event of an accidental pollution event occurring. This would be included in the site induction and training, with an emphasis on procedures and guidance to reduce the risk of water pollution. <u>Management of Fine Sediment:</u> • All reasonably practicable measures will be taken to prevent the deposition of fine sediment or other material in any existing waterbody, arising from construction activities. The measures will accord with the principles set out in industry guidelines including the CIRIA report 'C532: Control of water pollution from construction sites'. • A temporary drainage system will be developed to prevent runoff contaminated with fine particulates from entering surface water drains without treatment. This will include identifying all land drains and water bodies on the Site and ensuring that they are adequately protected. Discharge to such water bodies (directly or indirectly) will only be made with the permission of the Environment Agency and with the necessary treatment measures implemented; • Where possible, earthworks will be undertaken during the drier months of the year. When undertaking earth moving works, periods of very wet weather will be avoided, if possible, to minimise the risk of generating runoff contaminated with fine particulates. However, it	To be confirmed in Final CEMP	Appointed Contractors

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	is likely that some working during wet weather periods will be unavoidable, in which case mitigation measures will be implemented to control fine sediment laden runoff; • To protect waterbodies from fine sediment runoff, topsoil/subsoil will be stored a minimum of 10 m from watercourses on flat lying land (and further if the ground is sloping, subject to on-site risk assessment on observational monitoring). Where this is not possible, and it is to be stockpiled for longer than a two-week period, the material will be covered with geotextile mats. In all scenarios, runoff from the stockpile will be prevented from draining to a watercourse without prior treatment; • Appropriately sized runoff storage areas for the settlement of excessive fine particulates in runoff will be provided. It is likely that treated water will then be pumped under a temporary Water Activity Permit from the Environment Agency and/or under an agreement with Northumbrian Water to an existing Treatment Works (assumed to be treated at the Brans Sands WwTW); • Mud deposits will be controlled at entry and exit points to the Site using wheel washing facilities and/ or road sweepers operating during earthworks activities or other times as considered necessary; • Equipment and plant are to be washed out and cleaned in designated areas within the Site compound where runoff can be isolated for treatment before discharge to surface water drainage under appropriate consent and/ or agreement with Environment Agency and / or Northumbrian Water, or otherwise removed from site for appropriate disposal at a licensed waste facility; • Debris and other material will be prevented from entering surface water drainage, through maintenance of a clean and tidy site, provision of clearly labelled waste receptacles, grid covers and the presence of site security fencing; • The Final CEMP will include details of pre, during and post-construction water quality monitoring. The specifics of the monitoring will be finalised through discussion with the relevant stakeholders and is likely to include a combination of visual observations, in situ		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility

testing using handheld water quality probes, and periodic sampling for laboratory analysis;

- Foul water from any site compound (including temporary toilets) would be either tankered away to an appropriate disposal facility by a licensed waste disposal contractor, or treated on-site in a package treatment tank or equivalent;
- If any suspected contaminated material is discovered during the works, the contractor would be required to investigate the areas and assess the need for containment or disposal of the material. If material is considered to be contaminated, it would be disposed of to an appropriately licensed facility;
- Any waters removed from excavations by dewatering would be discharged appropriately, subject to the relevant permits being obtained;
- Foundations and services would be designed and constructed to prevent the creation of pathways for the migration of contaminants and would be constructed of materials that are suitable for the ground conditions and designed use. For example, water supply pipes would be designed in accordance with current good practice and applicable guidance to ensure pipes are protected from potential impacts associated with contamination; and
- No discharges from any self-contained wheel wash and localised wheel wash would be permitted to discharge directly into any surface water system.

<u>Management of Spillage Risk:</u>

- Fuel will be stored and used in accordance with the Control of Substances Hazardous to Health Regulations 2002, and the Control of Pollution (Oil Storage) (England) Regulations 2001. Particular care will be taken in accordance with industry standards with the delivery and use of concrete and cement as it is highly corrosive and alkaline;
- Fuel and other potentially polluting chemicals will either be in self bunded leak proof containers or stored in a secure impermeable and

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	bunded area (minimum capacity of 110% of the capacity of the containers); • Any plant, machinery or vehicles will be regularly inspected and maintained to ensure they are in good working order and clean for use in a sensitive environment. This maintenance is to take place off site if possible or only at designated areas within the Site compound. Only construction equipment and vehicles free of all oil/ fuel leaks will be permitted on site. Drip trays will be placed below static mechanical plant; • Containment measures would be implemented, including drip trays, bunding or double-skinned tanks of fuels and oils; • All chemicals would be stored in accordance with their Control of Substances Hazardous to Health (COSHH) guidelines, whilst spill kits will be provided in areas of fuel/oil/minor chemicals storage; • An Emergency Spillage Plan would be produced as part of the Final CEMP, which site staff will have read and confirmed that they understand, via the site induction; • The mixing and handling of materials would be undertaken in designated areas and away from surface water drains; • Plant and machinery would be kept away from surface waterbodies wherever possible and would have drip trays installed beneath oil tanks/engines/gearboxes and hydraulics, which would be checked and emptied regularly. Refuelling and delivery areas would be located away from surface water drains; • Exposed ground and stockpiles would be protected as appropriate and practicable to prevent windblown migration of potential contaminants. Water suppression would be used if there is a risk of fugitive dust emissions; • All washing down of vehicles and equipment will take place in designated areas and wash water will be prevented from passing untreated into watercourses; • As far as reasonably practicable, only biodegradable hydraulic oils will be used in equipment working in or over watercourses;		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	• All fixed plant used on the Site will be self-bunded; • Mobile plant is to be in good working order, kept clean and fitted with portable drip trays, bunds or similar at all times; • A Pollution Prevention Plan will be prepared and included alongside the Final CEMP. Spill kits and oil absorbent material will be carried by mobile plant and located at high risk locations across the Site and regularly topped up. All construction workers will receive spill response training and toolbox talks; • The Site will be secure to prevent any vandalism that could lead to a pollution incident; • Construction waste/ debris are to be prevented from entering any surface water drainage or water body; • Surface water drains on roads or within the construction compound will be identified and, where there is a risk that fine particulates or spillages could enter them, the drains will be protected (e.g. using covers or sandbags); • Suitable facilities for concrete wash water (e.g. geotextile wrapped sealed skip, container or earth bunded area) will be adequately contained, prevented from entering any drain, and removed from the Site for appropriate disposal at a suitably permitted waste facility; and • Water quality monitoring of potentially impacted watercourses will be undertaken to ensure that pollution events can be detected against baseline conditions and can be dealt with effectively. <u>Flood Risk:</u> • For crossings of the Tees there must be a minimum clearance of 1 m below hard bed level. Any proposed works to the watercourses may require Land Drainage Consent and may also require a Water Framework Directive (WFD) Assessment. • The Final Construction Environmental Management Plan (CEMP) will incorporate measures (as outlined within this Framework CEMP (Appendix 5A, ES Volume III, Document Ref. 6.4) to prevent an		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility

increase in flood risk during the construction works, specifically in areas of higher flood risk (any works in Flood Zones 2 or 3).

- Such measures will include:
  - topsoil and other construction materials will be stored outside of the 1 in 200-year floodplain extent and only moved to the temporary works area immediately prior to use;
  - connectivity will be maintained between the floodplain, the River Tees and Greatham Creek, with no changes in ground levels within the floodplain;
  - the construction laydown areas, site office, and supervisor will be notified of any potential flood occurring by use of the 'Floodline Warnings Direct' service;
  - the Contractor will be required to produce a Flood Risk Management Action Plan/ Method Statement which will provide details of the response to an impending flood and include:
  - a 24-hour availability and ability to mobilise staff in the event of a flood warning;
  - the removal of all plant, machinery and material capable of being mobilised in a flood for the duration of any holiday close down period;
  - details of the evacuation and site closedown procedures; and
  - arrangements for removing any potentially hazardous material and anything capable of becoming entrained in floodwaters, from the temporary works area.
  - if perched groundwater is encountered during establishment of core foundations and the crossing of the River Tees or any other watercourse via tunnelling methods, dewatering may be required. The most appropriate methods to dewater excavations will be selected, for example, prior to dewatering the perimeter of the excavation could be enclosed with either sheet-pile or a diaphragm wall;

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	• during the construction of the Tees Crossing the EA's GPP pollution prevention guidelines will be observed, and formal consent where required will be obtained from the EA for works within 16 m of a tidal watercourse, from the LLFAs for works within 8 m of an ordinary watercourse and from the Marine Management Organisation where relevant. • construction works undertaken adjacent to, beneath and within watercourses would comply with relevant guidance during construction, including the requirements of any Environmental Permit, Ordinary Watercourse Consent and IDB Bylaws. • activities carried out within the floodplain of a main river are considered regulated activities and as such require permission from the Environment Agency. A FRAP is likely to be required for certain works close to Environment Agency main rivers and flood defences; • The EA's GPP (pollution prevention guidelines) will be observed, and formal consent is required from the EA for works within 16 m of a tidal watercourse, from the LLFAs for works within 8 m of an ordinary watercourse and from the Marine Management Organisation. <u>Water Quality Monitoring:</u> • During construction a water quality monitoring programme will be implemented to ensure that mitigation measures are operating as planned and preventing pollution. This is standard practice for construction works of this type, and full details will be outlined in the WMP accompanying the Final CEMP, and which will be secured in the Commitments Register (Appendix 25A, ES Volume III, Document Ref. 6.4). The purpose of the monitoring programme will also be to ensure that should pollution occur it is identified as quickly as possible and appropriate action is taken in line with the Pollution Prevention Plan. • The water quality monitoring programme will be developed by the Principal Contractor in consultation with the Environment Agency (due to works potentially impacting flow in a Main River and WFD waterbodies), LLFA (due to works potentially impacting flow in an		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	Ordinary Watercourse), the MMO and potentially Natural England during the process of obtaining environmental permits/licences for works affecting, or for temporary discharges to, watercourses within the Site. • The programme may be expected to include a combination of daily observations and monitoring using a calibrated, handheld water quality probe through the upstream and downstream reaches of water features hydrologically-connected to the Site. It is expected that water quality sampling may be undertaken on a periodic as well as ad-hoc basis, dependent upon circumstances / activities onsite. Monitoring and sampling will be undertaken prior to the commencement of construction as to allow sufficient baseline data to be collected.		

Table 5A-4: Geology, Hydrogeology and Contaminated Land

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Potential for risks to human health associated with waste generation, land contamination, airborne contamination and groundwater contamination. Potential risks of explosion if explosive gases were to accumulate in excavations.	• Prior to the design and construction of the project, a ground investigation (GI) will be undertaken to assess the degree to which the Site is contaminated and identify the potential impacts this may have to site users and the environment. The findings will feed into the detailed design process and the Final CEMP prepared and implemented in order to mitigate the effect of potential impacts of the Proposed Development during construction; • Best practice measures will be adopted during construction to prevent or reduce as far as reasonably practicable spillage risk and spillage effects by adhering to the Final CEMP. The Final CEMP shall address the management of concrete batching, concrete usage and accidental spillage relating to foundation and building construction; • Should the ground investigation prove the need for piling or soil mixing to take place, the construction methodology will be assessed to reduce as far as reasonably practicable the risk of development of preferential pathways (e.g. groundwater flow) between the Made Ground present and the underlying Secondary 'A' or 'B' bedrock Aquifers; • A SWMP (A Framework SWMP is included as Annex A of this document) and Materials Management Plan (MMP) will be implemented as part of the Final CEMP to provide suitable controls to facilitate the re-use of materials such as soils and crushed concrete; • An Asbestos Management Plan (AMP) will be prepared and implemented as part of the Final CEMP. Particular emphasis is placed on this with regards to the development of the PCC Site given its former use as a steelworks; • The DCO will include a requirement that no part of the authorised development may commence, save for geotechnical surveys and other investigations for the purpose of assessing ground conditions, until a scheme to deal with the contamination of land, including groundwater, which is likely to cause significant harm to persons or pollution of controlled waters or the environment, has, for that part,	To be confirmed in Final CEMP.	Appointed Contractors

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	been submitted to and, after consultation with the Environment Agency, approved by the relevant planning authority; • If during the course of the development any contamination is found which has not been previously identified, an appropriate risk assessment will be prepared. Any actions resulting from the risk assessment will be agreed with the Local Planning Authorities/ Natural England along with any remedial measures. Contamination assessment will be in accordance with the CIRIA C552 - Contamination Land Risk Assessment, A Guide to Good Practice and the Model Procedures for the Management of Contaminated Land, CLR11. These remedial measures will be adopted as part of the scheme; • The scheme development will actively work towards achieving an earthworks balance. The suitability of excavated materials for re-use will be assessed as part of the proposed ground investigation works. All earthworks operations will need to be undertaken in accordance with BS6031:2009 and HE (HE) guidelines including DMRB Series 600 'Earthworks'; • Land disturbance will be reduced as far as is reasonably practicable and disturbed areas outside the footprint of the Proposed Development will be revegetated as soon as reasonably practicable after construction. Soil excavation will be undertaken with consideration given to the prevailing ground and weather conditions when programming the execution of the works to reduce the potential for mobilisation of exposed soil and / or sediment. Although not anticipated to be widely present, if encountered, topsoil and subsoil will be kept separately during excavation; • A Pollution Response Plan, secured as part of the Final CEMP, will be in place prior to the commencement of construction works. The plan will outline key pollution mitigation measures to be adopted including a Control of Substances Hazardous to Health (COSHH)/ fuel inventory and key contacts to be notified in the event of a significant pollution incident, which may subsequently lead to the contamination of controlled waters or soils. All bulk fuel and COSHH items will be stored in accordance with the relevant Environment		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	Agency Pollution Prevention Guidance notes (withdrawn but widely considered good practice) and storage regulations. Tanks and dispensing pumps will be locked when not in use to prevent unauthorised access; • Only well-maintained plant will be used during construction to minimise the potential for accidental pollution from leaking machinery or damaged equipment. Static machinery and plant are expected to be stored in hardstanding areas when not in use and, where necessary, to make use of drip trays beneath oil tanks/ engines/ gearboxes/ hydraulics. Spill response kits containing equipment that is appropriate to the types and quantities of materials being used and stored during construction will be maintained on site for the duration of the works; • The Final CEMP will set out procedures for dealing with unexpected soil or groundwater contamination that may be encountered. This would typically require affected works to stop to enable appropriate people to be notified, and further characterisation and risk assessment to be undertaken, before remediation or mitigation proposals are agreed with all required stakeholders; • Specific mitigation measures may be required in the form of treating/ remediating any contamination encountered during construction (e.g. any contamination that may be associated with any potentially contaminative sites identified as part of the assessment, notably the landfills and areas of potentially infilled land). This will be confirmed based on information gathered through ground investigation; • To minimise the effects on soil resources during any earthworks, including materials management, high standards of soil handling and management will be employed with a view to minimising where possible the double handling of soils and the extent to which exposed soils will be left vulnerable to erosional processes; • The re-use of excavated materials during construction will be governed by either a Materials Management Plan developed in accordance with CL:AIRE (2007) and secured as part of the Final CEMP, an environmental permit or a relevant exemption;		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	• The disposal of soil waste, contaminated or otherwise, to landfill sites will be mitigated by minimisation of the overall quantities of waste generated during construction, and by ensuring that excavated material consigned to landfill cannot, as an alternative, be put to use either on the Proposed Development or on other sites; • Where there is a requirement to dispose of surplus excavated materials off site as waste, the material will be characterised to determine firstly whether it is Hazardous or Non-Hazardous waste in accordance with the Environment Agency's Technical Guidance WM3 and then once this is established, the appropriate disposal facility will be determined through Waste Acceptance Criteria (WAC) analysis, as required; • All workers would be required to wear Personal Protective Equipment (PPE) such as dust masks as applicable; • An Emergency Spillage Action Plan secured as part of the Final CEMP, will be produced, which staff would have read and understood, and provisions made to contain any leak/spill; • Should any potentially contaminated ground, including isolated 'hotspots' of contamination and/or potential deposits of asbestos containing materials (ACM), be encountered, the contractor would be required to investigate the areas and assess the need for containment or disposal of the material. The contractor would also be required to assess whether any additional health and safety measures are required; • To further minimise the risks of contaminants being transferred and contaminating other soils or water, construction workers would be briefed as to the possibility of the presence of such materials; • In the event that contamination is identified, appropriate remediation measures would be taken to protect construction workers, future site users, water resources, structures and services; • Piling design and construction works would be completed following the preparation of a piling risk assessment, completed in accordance with the Environment Agency's 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	on Pollution Prevention'. A piling and penetrative foundation design method statement would be submitted to and after consultation with the Environment Agency, agreed with the local authority. This is will be secured by Requirement 24 of the draft DCO (Document Ref. 2.1). Low noise piling techniques will be adopted where reasonably practicable. <u>Storage of Fuels, Oils and Chemicals:</u> • The preparation of a map that highlights all potential contamination sources as part of the Final CEMP, SWMP, MMP and AMP; • The preparation of an inventory of all chemicals, fuels and oils will be kept up to date and be available on site. Spill contingency plans will be created for each of the items on the inventory. These will be supported by warning notices and appropriate spillage containment equipment and materials at key locations; • Chemicals, fuels and oils will be stored in secure and designated storage areas in accordance with the appropriate regulatory requirements, including the Control of Pollution (Oil Storage) (England) Regulations 2001 and Control of Substance Hazardous to Health (COSHH) Regulations 2002. Storage areas will need to be located on hardstanding areas to prevent the possible infiltration of contaminants into soils; • Re-fuelling of plant will take place in appropriate areas to be agreed in the Final CEMP, i.e. having an impervious base and are bunded or provided with interceptor drains. Spill kits will be kept with all vehicles on site and all bowsers are to be double skinned or have a bund. Vehicles and equipment will not be left unattended during re-fuelling. In order to prevent materials leaking from static plant, such as pumps and generators, static plant will be placed on drip trays wherever practicable; • All valves, hoses and associated re-fuelling equipment will be regularly inspected to ensure that they are still in a suitable condition. This equipment will be protected from vandalism and unauthorised		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	interference and will be turned off and securely locked when not in use; • All storage of drums containing hazardous material will be located within the temporary construction compound. Any spillages or leaks will be dealt with promptly and all waste disposed of in an appropriate manner. All tanks, drums and other containers will be clearly marked as to their contents. Before any tank is removed or perforated, all contents and residues will be emptied by a competent operator for safe disposal; and • Any staff involved in fuel handling will be given appropriate training, and site-specific procedures will be developed for all staff. Workers will be made aware of their statutory responsibility under Section 85 of the Water Resources Act 1991 not to 'cause or knowingly permit' water pollution. In addition, they will be made aware of their statutory responsibility under Regulations 38(1) and 12(1) of the Environment Permitting Regulations 2016 not to 'cause or knowingly permit' a water discharge activity or groundwater activity without an environmental permit.		

Table 5A-5: Noise and Vibration

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Vibration due to construction activities causing annoyance at Noise Sensitive Receptors (NSRs) and damage to building structures. Noise effect due to construction activities at nearby NSRs.	• The DCO will include a requirement that no part of the authorised development may commence, save for the permitted preliminary works, until a scheme for the monitoring and control of noise and vibration during the construction of that part of the authorised development has been submitted to and approved by the relevant planning authority; • Abiding by agreed construction noise limits at nearby NSRs; • Avoidance of working in the more sensitive evening and night times where possible; • Ensuring processes are in place to minimise noise before works begin and ensuring that best practicable measures (BPM) are being achieved throughout the construction programme; • Where reasonably practicable, construction will be sited at least 20 m away from NSRs, • Ensuring that modern plant is used, complying with the latest noise emission requirements. Selection of inherently quiet plant where possible; • Hydraulic techniques for breaking to be used in preference to percussive techniques where practical; • Use of rotary bored rather the driven piling techniques (if required), where possible; • All plant and equipment being used for the works to be properly maintained, silenced where appropriate, operated to prevent excessive noise and switched off when not in use; • Use of screening locally around significant noise producing plant and activities; • All vehicles used on-Site shall incorporate broadband reversing warning devices as opposed to the typical tonal reversing alarms to minimise noise disturbance where reasonably practicable;	To be confirmed in Final CEMP	Appointed Contractors

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	• All contractors to be made familiar with current legislation and the guidance in BS 5228 (Parts 1 and 2), which should form a prerequisite of their appointment; • Loading and unloading of vehicles, dismantling of site equipment such as scaffolding or moving equipment or materials within the proposed Site boundary to be conducted in such a manner as to minimise noise generation; • Consultation with the relevant local authority (RCBC and STBC) and local residents to advise of potential noisy works that are due to take place; • Noise complaints should be monitored, reported to the contractor and immediately investigated; and • A detailed noise assessment will be carried out once the contractor is appointed and further details of construction methods are known, in order to identify specific mitigation measures (including construction traffic).		

Table 5A-6: Terrestrial Ecology and Nature Conservation

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Impacts on terrestrial features of statutory designated sites (Teesmouth and Cleveland SSSI). Impacts on terrestrial features of Local Nature Conservation designation (Coatham Marsh LWS). Impacts through habitat losses and disturbance. Impacts on water quality as a result of construction activities. Impacts on protected species (including Bats).	• Where reasonably practicable, routing of connection corridors is to utilise existing infrastructure, including the extensive existing network of pipeline racks, to minimise excavations and construction activities required and therefore minimise disturbance to species and habitats present; • Trenchless technologies will be utilised where reasonably practicable to minimise effects on habitats and species; • Permanent habitat losses associated with pipelines will be minimised through compliance with the requirements of NPS EN-4 (the requirement for post construction reinstatement of habitats); • A Habitat Management Plan and a Landscape and Biodiversity Strategy will be included within Application. These, taking account of the results of surveys being completed in 2020, will be prepared and agreed with Natural England; • All construction works affecting terrestrial habitats suitable for great crested newt would be subject to a Precautionary Working Method Statement (PWMS) approach supervised by an ECoW; • Standard best practice prevention measures will be applied for the prevention of surface and ground water pollution, fugitive dust management and noise prevention or amelioration (measures included in Tables 5A-1 to 5A-4 where relevant to terrestrial ecology); • An Environmental or Ecological Clerk of Works (ECoW) would be present during construction as appropriate to supervise and instruct implementation of impact avoidance commitments; • Pre-construction survey requirements and any measures required to comply with relevant protected species legislation, including attainment of necessary licences and permits will be outlined within the Final CEMP; and • The Final CEMP will be accompanied by an Invasive Species Management Plan (ISMP) which would specify the measures and supervision necessary during construction to prevent the spread of the controlled weed species to new locations. An invasive non-native	To be confirmed in Final CEMP	Appointed Contractors

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility

plant survey would be undertaken prior to construction to determine the current location and extent of invasive plant stands, and to inform specification of the ISMP.

Ecological Clerk of Works:

- Immediately prior to site clearance and the start of construction in each relevant part of the Site, further site walkover surveys would be undertaken by an ecologist to confirm whether the risks remain as previously assessed and/or to confirm the correct implementation of impact avoidance measures (e.g. protected species stand-offs). The scope of the required walkovers would be defined on a case by case basis, in consultation with the project team and the local authority or other relevant statutory consultees as necessary, based on the specific risks; and
- Relevant site staff would receive toolbox talks on the ecological risks present, legal requirements and working arrangements necessary to comply with legislation. Toolbox talks would be repeated as necessary over the duration of the relevant works.

The following precautionary working methods would be employed to minimise potential adverse effects on protected/notable species prior to, and during, construction:

- Precautionary working method statements would be produced to specify working requirements and other impact avoidance measures and would be controlled and implemented through the Final CEMP;
- Where reasonably practicable, vegetation clearance works would be undertaken outside the bird breeding season, which is generally between March and August inclusive. Where this is not reasonably practicable, an ecologist would inspect all areas of vegetation prior to clearance, and clearance would only be undertaken subject to the

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	instruction and requirements of the ecologist to protect any birds and their nests; • Cleared ground would be maintained in a disturbed state in the run-up to construction commencing to minimise the risk of ground nesting birds attempting to nest on cleared ground; and • Precautionary measures would be implemented to prevent trapping wildlife in construction excavations in order to ensure compliance with animal welfare legislation. All excavations deeper than 1m would be covered or fenced overnight, or where this is not practicable, a means of escape would be fitted (e.g. battened soil slope or scaffold plank) to provide an escape route should any animals stray into the construction site and fall into an excavation. An Indicative Lighting Strategy has been prepared to accompany the DCO application (Document Ref. 5.11) to demonstrate how lighting impacts on sensitive ecological features, including bats: • Lighting will be restricted to focused point use where reasonably practicable; • Controls on lighting/illumination to minimise visual intrusion and potential adverse effects on sensitive ecology will be considered as far as reasonably practicable as part of the development of a lighting scheme; and • Construction temporary site lighting will be designed as far as reasonably practicable so as to minimise artificial light spill from the Site. The DCO will include a requirement that a scheme for external lighting must be submitted to and approved by the relevant planning authority prior to commencement of the development. The approved scheme must be in accordance with the Indicative Lighting Strategy.		

Table 5A-7: Aquatic Ecology

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Impacts on statutory designated sites Teesmouth and Cleveland Coast SPA, Ramsar and SSSI. Impacts on rivers, ditches and ponds e.g. through habitat disturbance or impacts on water quality as a result of construction activities. Impacts on fish e.g. through disturbance/removal of water body fish suitable habitat, unavoidable release of sediments to water bodies and noise and vibration next to waterbodies causing disturbance to fish. Impacts on macroinvertebrates and macrophytes through habitat disturbance/ resulting in habitat quality which may result in the changes to the composition of the community.	• Standard best practice prevention measures will be applied for the prevention of surface and ground water pollution, fugitive dust management and noise prevention or amelioration (measures included in Tables 5A-1 to 5A-4 where relevant to aquatic ecology); and • Biosecurity measures will be put in place to reduce the spread of invasive non-native species.	To be confirmed in Final CEMP	Appointed Contractors

Table 5A-8: Marine Ecology

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Direct loss and physical disturbance to marine ecology (habitats and species). Impacts caused through underwater sound and visual disturbance. Reduction in or changes to marine water quality.	• Standard best practice prevention measures will be applied for the prevention water pollution, fugitive dust management and noise prevention or amelioration (measures included in Tables 5A-1 to 5A-4 where relevant to marine ecology); • Construction of the CO_2 Export Pipeline shall be carried out where practicable to minimise land-take and the subsequent loss of benthic habitats and species, as well as to reduce disturbance to other marine ecological receptors; • 'No dig' construction using trenchless technologies shall be used to install the Natural Gas Connection and CO_2 Gathering Network across the River Tees in order to minimise disturbance to riverine habitats and species; • Pre-construction sediment contamination testing shall be carried out in consultation with the MMO; • All project vessels shall adhere to the International Convention for the Control and Management of Ships' Ballast Water and Sediments with the aim of preventing the spread of marine INNS; and • All project vessels shall adhere to the International Maritime Organisation (IMO) Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (Biofouling Guidelines). <u>Underwater sound and visual disturbance management measures:</u> • The standard JNCC mitigation measures for explosives, piling and geophysical surveys (JNCC, 2010a; JNCC, 2010b; JNCC, 2017) shall be adopted during construction of the Proposed Development as appropriate; • Activities that generate impulsive underwater sound within the marine environment (i.e. piling) shall not be undertaken at night; and • Should any preparatory dredging be required, material shall be disposed of at a licensed marine disposal site. Options, in close proximity to the Site, are available; this includes the existing Teesside	To be confirmed in Final CEMP	Appointed Contractors

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	A (TY 160) and Teesside C (TY 150) which are known to regularly receive material similar to that which is likely at the proposed dredge locations. Disposal of dredged material would be undertaken in accordance with deemed Marine Licences that will be secured by the DCO.		

Table 5A-9: Ornithology

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Potential effects on Teesmouth and Cleveland Coast SPA/ Ramsar/ SSSI (noise/ vibration and visual disturbance and barrier to movement for various species) including: – redshank ((migratory (winter) qualifying species)): – sandwich term (Annex 1 qualifying species); and – sandwich tern, redshank, shelduck, teal, sanderling and lapwing (waterfowl assemblage qualifying species). Potential effects of noise, disturbance and habitat loss relating to BoCC Red Listed Breeding Bird Breeding Bird Assemblage. Potential effects on Schedule 1 breeding birds (barn owl). Potential destruction/damage of nests (all breeding bird species).	• To ensure legislative compliance in relation to nesting birds, all clearance of suitable vegetation during site preparation would be undertaken outside the breeding season (typically March-August inclusive for most species), where reasonably practicable. In situations where this is not possible, an ecologist would check the working area for nests before works commence. If nests were discovered, appropriate mitigation would be implemented to ensure that they are not disturbed or destroyed before any works can commence in that area. This would include imposing exclusion zones between the works and nest(s) and suspending vegetation clearance works within the area until any young had fledged. If Schedule 1 species are found breeding within or next to the proposed development site construction, works will stop immediately, and the local authority and Natural England would be informed. A licence may be required before works could continue; • Phasing of construction will be planned, where reasonably practicable, so that those activities with potential to cause noise and/or visual disturbance of receptors, and those that would result in habitat losses, are carried out at a time of year when the likelihood of birds being present is minimised; • Potential effects on barn owl will be avoided by siting infrastructure and working areas sensitively and by timing works where practicable to minimise disruption during the breeding season for this species (mid-March to the end of September as a minimum); and • Any works associated with construction of the proposed infrastructure that have the potential for significant noise or disturbance effects will not be undertaken during extreme weather conditions that coincide with spring tides or other extreme tide conditions, because SPA and other water birds are more likely to roost or seek shelter on land in such conditions.	To be confirmed in Final CEMP	Appointed Contractors

Table 5A-10: Traffic and Transportation

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Increased traffic flows, including HGVs on the roads leading to the PCC.	Implementation of the Construction Worker Travel Plan (CWTP) which includes measures and procedures to encourage construction workers to adopt modes of transport which reduces reliance on single occupancy private car use including: • It is proposed that all construction workers would arrive and depart the Site via the existing entrance to the former SSI steelworks site located off the A1085 at the roundabout with West Coatham Lane. There are other access points to the Natural Gas Connection and CO_2 Gathering Network corridors in Seal Sands; • Parking demand would vary throughout the construction phase and an area of hardstanding will be set aside within the Site to accommodate parking for construction workers through a Park and Ride facility; • All construction staff would be made aware of the measures included in the CWTP, so that benefits can be delivered and the number of car borne trips reduced by promoting car sharing, minibus use and public transport; • The Applicant will be responsible for ensuring a condition of contract between the Applicant and the contractor to develop and comply with the provisions of a Construction Workers' Travel Plan, prepared in accordance with the CWTP; • A Travel Plan Co-ordinator will be appointed by the contractor to manage and deliver the Travel Plan. The Travel Plan Co-ordinator's details would be supplied to Redcar and Cleveland Borough Council (RCBC) and Highways England; • The Travel Plan Co-ordinator would work closely with the Site Manager, who has overall responsibility for the Site, and thus has the authority to introduce measures for those workers who do not follow the guidelines;	To be confirmed in Final CEMP	Appointed Contractors

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	• The responsibilities of the Travel Plan Co-ordinator are expected to include: - encouraging the contractual obligations of contractors/ sub-contractors related to the Travel Plan to be adhered to; - ensuring the Travel Plan notice board is located in a prominent position and that the information is kept up to date; - monitoring parking to ensure no off-site parking is undertaken on any public highway leading to the Site, with sanction measures taken against those offending; - managing the number of parking spaces available on-site to help ensure that the number of vehicles is controlled, and that sustainable transport options are promoted; - alongside the Site Manager, set the appropriate criteria for construction workers to receive a pre-allocated parking space; - reviewing the split of vehicles between cars, vans and minibuses and assessing effectiveness of the Travel Plan against targets set. Additional measures to ensure that the Travel Plan meets its overall objectives would be considered where necessary (e.g. implementing a lift share policy or putting on additional minibuses to pick up from key worker locations); - being based on Site; - acting as the key point of contact for issues related to construction traffic; - undertaking a snap-shot parking survey on one day per month to ensure car park occupancy targets are being met; - reviewing cycle parking provision on a monthly basis; - engaging with local stakeholders; - act as a point of contact for feedback from employees, the Council and local residents regarding any issues with construction worker traffic;		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility

- in emergencies, the Travel Plan Co-ordinator would provide a guaranteed lift home for car sharers e.g. by use of taxi. The provision could be extended for emergency situations for staff that cycle to the Site;
- monitoring performance against the targets of the Construction Workers' Travel Plan;
- implementing additional measures if not delivering on targets set;
- the Travel Plan Co-ordinator would hold regular review meetings to ensure any issues are dealt with effectively; and
- the Travel Plan Co-ordinator would collate and where necessary, respond to feedback from employees, the Council and local residents regarding any issues.

- The contractor will be responsible for managing how their workers travel to and from the Site. Given the number of parking spaces to be provided, the contractor's responsibilities will primarily include:
  - providing a Travel Plan Co-ordinator to oversee the management and delivery of the Construction Workers' Travel Plan;
  - encouraging and promoting the use of sustainable transport measures included within the Construction Workers' Travel Plan; and
  - organising crew minibuses to transport workers to and from the Site where appropriate.
- Car parking at the Site would be monitored by the Travel Plan Co-ordinator, with restricted access. The Site Manager and the Travel Plan Co-ordinator will set the appropriate criteria for construction workers to receive a pre-allocated parking space;
- Contractors would be encouraged to provide minibuses for transporting their workers from the key points of construction worker origin to the Site. This would have the benefit of reducing the number of vehicular trips on the local road network. For example, many of the construction workers would find local accommodation at hotels and bed and breakfasts (B&Bs). They would be keen to minimise

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	their daily travel costs and a minibus service would be an attractive means of transport to them. The locations of accommodation chosen by these workers could provide suitable pick up locations for the minibus. Minibus routes could also be set up to collect workers that live locally from central pick up points; • The contractor would be encouraged to set up and manage a car share scheme for their workers; • Secure parking for bicycles would be provided. Construction staff that cycle to work would also have access to shower and changing facilities and lockers to store clothing, cycle helmets etc; • Information about all available forms of public passenger transport including routes and destinations, service frequencies and locations of nearest bus stops shall be provided in an information pack and sent to construction workers prior to them starting work at the Site. Public transport information would also be displayed on the travel information boards. It will be the responsibility of the Travel Plan Co-ordinator to ensure that this information is kept up-to-date; • An on-site storage facility is usually provided by contractors. This facility would encourage construction workers to store their tools on-site. This would reduce the number of tools they would need to carry each day and would assist those workers who are considering cycling or car sharing as a potential travel mode; • Details of the sustainable transport options available for accessing the Site would be provided in an information pack and sent to construction workers, prior to them starting work at the Site. This will raise awareness of the initiatives being implemented and also allow staff to register an interest in the schemes. The contractor will be responsible for ensuring all construction workers receive the information pack prior to starting work on Site; • All construction workers will receive an introductory meeting on the travel plan when they commence work, incorporated into the Site safety briefing. It will include details of sustainable transport measures available for accessing the Site and parking arrangements;		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility

- The Travel Plan Co-ordinator would be responsible for monitoring the Travel Plan, to ensure an efficient and effective execution of the measures, and to refine the measures, where necessary, to cope with the changes in demand over the construction phase;
- An important part of the monitoring strategy would be obtaining feedback from construction workers, Redcar and Cleveland Borough Council, Stockton-on-Tees Borough Council and local residents regarding any issues with construction worker traffic. The appointment of a Travel Plan Co-ordinator will ensure that an appropriate point of contact is available and can react to such feedback; and
- Construction workers will be given the chance to offer their suggestions and ideas via a suggestion box/an informal discussion with the Travel Plan Co-ordinator; while review meetings will be held at regular intervals to ensure any issues are dealt with effectively.

A Framework CTMP is provided in support of the application (ES Volume III, Appendix 16C):

- HGV arrivals will be managed and spread evenly over the day between the hours of 07:00 and 19:00 to avoid on-site congestion unless agreed in exceptional circumstances (e.g. during concrete pouring) in advance with the local authority. The only deliveries outside these hours may be the delivery of Abnormal Indivisible Loads (AIL), if required. Any noisy works outside the core working hours, including timing of AIL deliveries, if required, would need to be agreed with the local planning authority on a case by case basis. On average these deliveries will equate to just 8 HGV trips per hour (4 in and 4 out). A HGV routing plan will be communicated to all drivers during their induction;
- The Council's and Highways England's normal loads officer would be consulted at the earliest opportunity on the programme and plan for the delivery of the AILs;
- It is proposed that all construction HGVs associated with the construction of the PCC will arrive and depart the Site either via the

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	existing entrance or via Tees Dock Road and the internal site road network; • Local road signage for construction traffic will be provided; • Materials required to carry out the construction of the Natural Gas Connection and CO_2 Gathering Network will be delivered direct to the connections worksite rather than the site entrance; • In the interests of highway safety, wheel cleaning facilities should be installed on Site from the start of the construction phase. Wheel cleaning facilities should also be located at each of the temporary access points to the Natural Gas Connection and CO_2 Gathering Network. All HGVs leaving the construction site should be required to wheel wash when exiting the Site. The need for this measure should be periodically reviewed throughout the construction period; • A 24 hour contact name and number will be established by the contractor and displayed on a notice board at the construction site entrance points; • AILs delivered via the Redcar Bulk Terminal will be transported within the Teesworks internal road network; • Any AILs weighing less than 100 tonnes and containerised loads delivered to Teesport will be transported via Tees Dock Road and the internal Teesworks road network north of Lackenby Steelworks; • The Contractor will work with the relevant authorities and stakeholders to secure appropriate approvals for the transportation of abnormal loads; • Monitoring will be undertaken by the Appointed Contractors to assess the effectiveness of the measures included in the final CTMP (to be approved by RCBC and STBC pursuant to a DCO Requirement) to control the routing and impact of construction HGVs. Monitoring will also provide a firm basis upon which to answer queries and complaints regarding the HGV traffic impact during construction. A 24 hour contact name and number will be established by the contractor and displayed at the Site;		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	• The Appointed Contractors will maintain gatehouse records of construction HGVs entering and leaving the Site and they will be available to the Council on request; • Should any complaints be raised by members of the public with regards to construction HGVs not using the dedicated HGV route to the Site, gatehouse records will be used to identify the offending HGV involved and appropriate sanctions put in place to ensure no repeat events; • The Appointed Contractors must ensure that the designated HGV route (which is the most direct route from the motorway network) is adhered to by HGV drivers and the contractor must ensure that the policy is distributed to all HGV drivers. This policy will be reinforced during staff inductions; • to ensure compliance with the measures set out above, the contractor must enforce the disciplinary procedure, “yellow/ red card system” or equivalent. In the first event of non-compliance, a warning will be issued to the HGV driver (yellow card). In the event of any repeat of the contravention, that driver will be prohibited from making further HGV deliveries to the Proposed Development Site (red card); • it will be a condition of contract between the Applicant and the Appointed Contractors to ensure that an anti-social behaviour policy is adhered to by both HGV drivers and construction workers. This policy will be reinforced during the induction and will include HGV drivers being made aware not to park on the public highway, with sanctions put in place to deal with non-compliance; • the Appointed Contractors will erect signage at the main junctions to ensure that all HGV traffic relating to the Proposed Development travel in the appropriate directions. The Appointed Contractors will also be required to maintain all the HGV route signage; • a 24 hour contact name and number will be displayed on a notice board at the Proposed Development Site entrance, on the Applicant’s website and on the Council website if they elect to, for members of the public to contact should they have any issues regarding construction traffic; and		

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	• residents will be updated on the construction of the Proposed Development via a regular update bulletin posted on the Applicant's website and on the Council website if they elect to host this. A 24-hour contact name and number for members of the public to contact should they have any issues regarding construction traffic.		

Table 5A-11: Landscape and Visual Amenity

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Loss of existing landscape features and visibility of new landscape features. Temporary disturbance to agricultural fields. Increased visibility of construction and operation activities.	• Suitable materials will be used, where reasonably practicable, in the construction of structures to reduce reflection and glare and to assist with breaking up the massing of the buildings and structures; • The selection of finishes for the buildings and other infrastructure will be informed by the finishes of the adjacent developments in order to reduce the visual impact of the Proposed Development; and • Lighting required during the construction and operation stages of the Proposed Development will be designed to reduce unnecessary light spill outside of the Site boundary.	To be confirmed in Final CEMP	Appointed Contractor.

Table 5A-12: Cultural Heritage (including Archaeology)

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Potential for impact upon previously unknown buried heritage assets. Loss of non-designated heritage asset. Loss of archaeological deposits.	The DCO will include a requirement that no part of the authorised development may commence until a written scheme of investigation for that part has been submitted to and, after consultation with the relevant archaeological body, approved by the relevant planning authority. The scheme submitted and approved must be in accordance with chapters 18 and 19 of the environmental statement. The scheme must identify any areas where further archaeological investigations are required and the nature and extent of the investigation required in order to preserve by knowledge or in-situ any archaeological features that are identified. The scheme must provide details of the measures to be taken to protect record or preserve any significant archaeological features that may be found. Any archaeological investigations implemented and measures taken to protect record or preserve any identified significant archaeological features that may be found must be carried out— a. in accordance with the approved scheme; and b. by a suitably qualified person or organisation approved by the relevant planning authority in consultation with relevant archaeological body unless otherwise agreed with the relevant planning authority. • Use of existing pipeline infrastructure, as far as is practicable, in order to avoid impacts to heritage assets; • Siting proposed connection corridor networks above ground where possible, thereby minimising impacts to potential buried archaeological remains; • the use of trenchless technologies including bored tunnel, for the Natural Gas Connection and horizontal directional drilling (HDD) sections of the CO_2 Gathering Network; and • Physical impacts to the part of the former steel works conveyor located within the PCC Site, should be mitigated via a proportionate programme of recording in advance of demolition.	To be confirmed in Final CEMP.	Appointed Contractor

Table 5A-13: Marine Heritage

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Partial or total removal of heritage assets (non-designated). Compaction of archaeological deposits by structures. Impacts on the setting of heritage assets as a result of visual intrusion, change in noise air quality, severance, access and amenity as a result of construction works.	• Assets should ideally be preserved in situ. Where this is not possible, an attempt must be made to preserve them by record.	To be confirmed in Final CEMP.	Appointed Contractors

Table 5A-14: Socio-economics and Tourism

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Impacts to users of the foreshore and surrounding area	• Where reasonably practicable the project will seek to re-use existing infrastructure within the connection corridors. • Activities for the replacement of infrastructure that constitute marine licensable activities will be subject to the requirement of a Marine Licence from the MMO. During construction all conditions under the licence will be adhered to. Conditions are likely to include some or all of the following: - Construction methodology (this is typically required ahead of commencement of works such that the MMO can ensure works are compliant with the legislative requirements of the MCAA, including ensuring minimal disruption to legitimate uses of the sea); - Notice(s) to mariners (this is a published notice typically issued by a local harbour authority informing other marine users of marine works, their nature and duration); - Navigational Risk Assessment (see Appendix 20B, ES Volume III, Document Ref. 6.4); - Fisheries Liaison Officer (FLO) (this is an appointed single point of contact to liaise between the Marine Licence applicant and local commercial fishers); and - Construction and/or Project Environmental Management Plan – CEMP/PEMP (whilst typically focused on managing and mitigating against ecological effects from plant equipment and construction operations, the plan may also have relevance to minimising disruption to other marine users). • Any temporary closures or diversions of public rights of way (or otherwise) required during construction would be implemented to maintain as much access as possible for users of these amenities due to their importance to local tourism. • A mechanism for managing stakeholders' questions, concerns, and grievances and provide appropriate conflict resolution processes	To be confirmed in Final CEMP.	Appointed Contractors

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
	could be considered to ensure any issues are heard by the developer. • It is anticipated that skills and education programmes and events will be provided by the contractor as mitigation.		

Table 5A-15: Climate Change

Potential Impact	Mitigation/ Enhancement Measure	Monitoring Requirement	Responsibility
Greenhouse gas emissions during construction, including embodied carbon in building materials and transport of staff and materials.	The Appointed Contractors will measure, monitor and report energy and water consumption and GHG emissions during construction. Content that may be included in the Final CEMP are: • fuel consumption on site in vehicles, equipment and plant; • energy consumption from the onsite amenity blocks; • water consumption; • water consumption from the construction process (including dampening down as part of dust mitigation); • transportation of materials to the Proposed Development; • waste disposal (by method i.e. landfill, recycling etc.) and transportation from construction activities; and • specification of construction materials to lower embodied carbon emissions i.e. higher recycled content.	To be confirmed in Final CEMP.	Appointed Contractors

5.8 Complimentary Plans and Procedures

5.8.1 In addition to the Final CEMP, a suite of complementary environmental plans and procedures for the construction phase will be developed in accordance with draft DCO Requirements, including a SWMP and a WMP. These plans and procedures will build on the principles and procedures set out in this Framework CEMP and described in the ES, and will be cross referenced in the Final CEMP.

5.9 Implementation and Operation

5.9.1 The Final CEMP will set out all roles, responsibilities and actions required in respect of implementation of the measures described in this Framework CEMP, including:

- an organogram showing team roles, names and responsibilities;
- training requirements for relevant personnel on environmental topics;
- information on site briefings and toolbox talks that will be used to equip relevant staff with the necessary level of knowledge to follow environmental control procedures;
- measures to advise employees of changing circumstances as work progresses;
- communication methods;
- document control; and
- environmental emergency procedures.

5.10 Checking and Corrective Action

Monitoring

5.10.1 To meet the requirement of the Final CEMP, environmental monitoring of the project and its impacts will be undertaken throughout the construction phase. In particular, the following requirements of the Final CEMP will be closely monitored:

- Licences, permits and approvals;
- dust and noise monitoring;
- water pollution prevention; and
- vegetation protection.

5.10.2 As part of the monitoring process the contractor will allocate a designated Environmental Site Officer(s), who will be present on Site throughout the construction process and when new activities are commencing. The Environmental Site Officer will observe site activities and report any deviations from the Final CEMP in a logbook, along with the action taken and general conditions at the time. The Applicant will be informed of any deviations from the Final CEMP as soon as possible following identification of such issues. The Environmental Site Officer would also act as day-to-day

contact with RCBC and STBC and other regulatory agencies such as the Environment Agency.

5.10.3 During construction, the Environmental Site Officer will conduct daily walkover surveys to ensure all requirements of the Final CEMP are being met. Action from these surveys will be documented on an Environmental Action Schedule, discussed with the Site Foreman for programming requirements and issued weekly for actioning.

5.10.4 The Environmental Manager/ Project Manager will arrange regular formal inspections to ensure the requirements of the Final CEMP are being met. After completion of the works, the Environmental Site Officer will conduct a final review.

Records

5.10.5 The Environmental Manager/ Project Manager will retain records of environmental monitoring and implementation of the Final CEMP. This will allow provision of evidence that the Final CEMP is being implemented effectively. These records will include:

- Environmental Action Schedule;
- Licences, permits and approvals;
- results of inspections by Environmental Manager/ Project Manager;
- other environmental surveys and investigations; and
- environmental equipment test records.

5.10.6 The CEMP will be updated as necessary, with a full review as required (at least quarterly) throughout the construction period.

5.10.7 A brief report will be produced and submitted to RCBC and STBC at the end of each key activity shown in the construction programme and following completion of commissioning. This will summarise the monitoring process, observed deviations from the Final CEMP and the corrective actions taken.

Management Review

5.10.8 The CEMP will be signed off on completion of the construction works.

Annex A: Framework Site Waste Management Plan

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A.1 Introduction

Overview

A.1.1 This Outline Site Waste Management Plan (OSWMP) sets out the measures that will be implemented by the Principal Contractors (PC) to manage waste generated by the construction of the Project.

A.1.2 This OSWMP will be updated by the PC into a contractor Site Waste Management Plan (SWMP) prior to commencement of works.

A.1.3 Key terminology used in this OSWMP is detailed in Table A4-1.

Table A4-1 Key terminology

Terminology	Definition
The Considerate Constructors Scheme (CCS)	The CCS – a non-profit making, independent organisation founded in 1997 by the construction industry to raise standards in the construction industry.
C&D waste	Construction and demolition waste
CD&E waste	Construction, demolition and excavation waste
CIRIA	Construction Industry Research and Information Association – a member-based research and information organisation dedicated to improvement in all aspects of the construction industry.
Controlled waste	Household, industrial and commercial waste (not agricultural waste, waste from mines or quarries and most radioactive waste).
Duty of Care	Legal responsibility for anyone who produces, imports, keeps, stores, transports, treats or disposes of waste to take all reasonable steps to ensure that the waste is managed properly.
Duty of Care checks	Checks to ensure that only authorised persons transfer waste, and that the waste is managed legitimately, including checks on: The waste carrier's registration certificate. The waste broker's registration certificate (if used). The Environmental Permits for waste management facilities or proof of exemptions from permitting.
Environment Agency (EA)	The main environmental regulatory body in England.
European Waste Catalogue (EWC) code	A six-digit number used to classify a particular waste stream.
Exempt activities	Activities not requiring an Environmental Permit (an exemption will require registration).
Flood Zone 3	The area of the floodplain where there is a high risk of flooding.
Hazardous Waste Consignment Note (HWCN)	A document that accompanies the movement of any hazardous waste from production (cradle) to disposal (grave).
Hazardous waste	Waste with any hazardous properties as listed in Annex III of The Hazardous Waste (England and Wales) Regulations 2005 (as amended).
Non-hazardous waste	Waste which does not display any of the hazardous properties listed in Annex III of The Hazardous Waste (England and Wales) Regulations 2005 (as amended).

Principal Contractor (PC)	Contractor appointed to coordinate the construction phase of a project where it involves more than one contractor.
Registered Waste Carrier	A person who holds a registration certificate from the EA to transport waste.
Site Waste Management Plan (SWMP)	Sets out how material resources and waste will be managed and controlled at all stages during a construction project.

Purpose and benefits

A.1.4 SWMPs are used as a good practice measure on construction projects and to support planning and consenting applications.

A.1.5 This OSWMP has been developed to act as a guide to Project personnel on how to manage material assets (construction materials) and waste, in accordance with both legal and best practice requirements. The PC will use this OSWMP as a framework for producing the contractor SWMP for use throughout the duration of the Project.

A.1.6 The PC will take all reasonable steps to ensure that:

- All waste from the site is dealt with in accordance with the waste duty of care (defined in section 34 of the Environmental Protection Act 1990 (Ref 4.1) and The Waste (England and Wales) Regulations 2011 (as amended) (Ref 4.2).
- Materials are handled efficiently, and waste managed appropriately.

Scope

A.1.7 This OSWMP includes:

- An overview of applicable legislation.
- Details of the Project.
- Management arrangements, including roles and responsibilities, training, key performance indicators (KPIs) and best practice measures.

A.1.8 Estimates of wastes arising and how they will be managed.

A.1.9 Materials and waste management on-site.

A.1.10 Opportunities for waste minimisation, reuse, recycling and recovery in line with the requirements of the waste hierarchy.

A.2 Waste management legislation

A.2.1 This section summarises the key legal requirements with regards to waste management and control within England.

Definition of waste

A.2.2 Waste is defined by Article 1(a) of the European Waste Framework Directive (EWFD) (Ref 4.3) as “any substance or object (in the categories set out in Annex I) which the holder discards or intends to discard or is required to discard”.

A.2.3 The legal definition of waste also covers substances or objects, which fall outside of the commercial cycle or out of the chain of utility. In particular, most items that

are sold or taken off-site for recycling are wastes, as they require treatment before they can be resold or reused.

A.2.4 In practical terms, wastes include surplus earthworks materials and soil, scrap, unwanted surplus materials, packaging, recovered spills, office waste, and damaged, worn-out, contaminated or otherwise spoiled plant, equipment and materials.

Duty of care

A.2.5 The duty of care for waste management is set out under section 34 of the Environmental Protection Act 1990 (Ref 4.1) and The Waste (England and Wales) Regulations 2011 (as amended) (Ref 4.2). It requires anyone who produces, imports, keeps, stores, transports, treats or disposes of waste to take all reasonable steps to ensure that the waste is managed properly. Anyone in possession of waste must take all reasonable steps to:

- Prevent unauthorised or harmful deposit, treatment or disposal of waste.
- Prevent a breach (failure) by any other person to meet the requirement to have an environmental permit, or a breach of a permit condition.
- Prevent the escape of waste.
- Ensure that waste is transferred to an authorised person.
- Provide an accurate description of the waste when it is transferred to another person, by using a compulsory system of Waste Transfer Notes (WTN) that control the transfer of waste between parties.

A.2.6 Failure to comply with the duty of care requirements is a criminal offence and could lead to prosecution.

Apply the waste hierarchy

A.2.7 The Waste (England and Wales) Regulations 2011 (as amended) (Ref 4.2) transpose the requirements of the EWFD (Ref 4.3), and require:

A.2.8 Those undertaking waste management activities, such as the import, production, collection, transportation, recovery and/or disposal of waste, to take all reasonable measures to apply the waste hierarchy, in priority order, as follows:

- Prevention
- Preparation for reuse
- Recycling
- Other recovery, such as energy recovery
- Disposal

A.2.9 Those producing waste to confirm that they have applied the waste hierarchy when transferring waste and to include a declaration on their WTN or consignment note.

Hazardous waste

A.2.10 The Hazardous Waste (England and Wales) Regulations 2005 (as amended) (Ref 4.4) require that a consignment note be used to document the transfer and management of all hazardous waste.

Registration of waste carriers

A.2.11 Under the Control of Pollution (Amendment) Act 1989 (Ref 4.5) it is a criminal offence for anyone not registered as a waste carrier to transport controlled waste. The Waste (England and Wales) Regulations 2011 (as amended) (Ref 4.2) updated the system for the registration of waste carriers, including brokers and dealers.

- Anyone undertaking any of the following activities as part of their business must register as a waste carrier, broker or dealer:
- Transporting their own waste.
- Transporting waste for someone else.
- Buying or selling waste.
- Acting as a waste broker (arranging for someone to handle waste produced by someone else).

A.2.12 Details of all appointed waste carriers, brokers and contractors must be included in the contractors SWMP, including copies of appropriate waste carrier licences/registrations. The register of waste carriers, brokers and dealers can be checked using the Environment Agency's Public Registers (at: environment.data.gov.uk/public-register/view/search-waste-carriers-brokers).

Environmental permits and exemptions

A.2.13 The Environmental Permitting (England and Wales) Regulations 2016 (as amended) (Ref 4.6) require sites where waste is processed, treated or disposed of to hold a valid Environmental Permit issued by the Environment Agency (EA).

A.2.14 The Regulations also include a schedule of activities that are exempt from the requirements of permitting. However, to comply with these Regulations, an exempt activity must generally be registered with the EA before commencing.

A.2.15 A permit is not usually required where waste is temporarily stored on the site where it is produced prior to management or disposal. Depending upon the types and quantities of waste to be stored, the duration and place of storage and compliance with other defined conditions:

- A non-waste framework directive exemption may apply, which does not need to be registered.
- An exemption may need to be registered with the EA.

A.2.16 The PC will be responsible for obtaining the necessary permits and exemptions, where required.

A.3 Details of the Project

A.3.1 The PC will complete Table A4-2 below prior to commencement of construction.

Table A4-2: Details of the scheme

Project title		[HOLD]	
Project location	Address		
	Town		
	Postcode		
Client	Name		
	Address		
	Contact	Email	
	Phone	Mobile	
PC	Name		
	Address		
	Contact	Email	
	Phone	Mobile	
SWMP Drafter	Name		
	Address		
	Contact	Email	
	Phone	Fax	
Construction cost (estimated)			
Site area (gross area)			
	Construction programme:		
Start date	Day	Month	Year
Completion date	Day	Month	Year
Waste Management Champion			
Person responsible for SWMP			
Document Controller/ Secretary			
Location of SWMP			

A.4 Description of the Project

A.4.1 A description of the Project activities is presented in Section [x.x] of the CEMP.

A.5 Management arrangements

Roles and responsibilities

A.5.1 The main contract personnel responsible for producing the contractor's SWMP are shown in Table A4-3 below. The PC will complete Table A4-3 prior to the commencement of construction.

Table A4-3: Roles and responsibilities

Position	Name	Contact details	SWMP responsibility
Main Contract personnel			
Client Project Manager	*To be confirmed*	*To be confirmed*	• Monitor the PC's performance against the contract including any environmental commitments and targets agreed for the Project.
Project Manager (Principal Contractor (PC PM))	*To be confirmed*	*To be confirmed*	• Approval of the SWMP for the relevant phase of works. • Ensure that all controls specified within the SWMP are implemented by employees and sub-contractors.
Environment Manager (Principal Contractor PC EM))	*To be confirmed*	*To be confirmed*	• Undertake site inspections to monitor compliance with the environmental licences/consents for the works and the measures within the SWMP. • Ensure that the Project complies with all environmental legislation, consents, objectives, targets and other environmental commitments, including those arising from the ES throughout the relevant project phase.
Site Materials and Waste Manager (Principal Contractor)	*To be confirmed*	*To be confirmed*	• Prepare the SWMP. • Implement the SWMP throughout the construction of the Project and ensure that waste is disposed of legally, economically and safely in line with the SWMP and all relevant legislation. • Provide appropriate professional and practical advice to contractors, consultants and project team members associated with materials and waste issues.
Sub-contractor details			
Individual Sub-contractor(s), as appointed	*To be confirmed*	*To be confirmed*	• Read through, familiarise and understand the requirements of the SWMP. • Produce waste documentation and a Management Plan. • Comply with the requirements set out in the SWMP.

Instruction and training

A.5.2 The PC will incorporate the contractors SWMP requirements into the site induction and training procedures and must provide on-site instruction of

appropriate construction materials and waste separation, handling, recycling, reuse and return methods to be used by all parties at all appropriate stages of the Project.

A.5.3 The PC must ensure that all personnel working on the site, including sub-contractors, are inducted and appropriately trained.

Key performance indicators (KPIs)

A.5.4 Prior to commencement of construction, the Client will develop KPIs for waste management, which will be incorporated in the SWMP.

Best practice measures

A.5.5 To reduce the potential impacts from materials and waste, and to achieve high levels of sustainability in the Project as a whole, the PC will apply the principles of the waste hierarchy and adopt best practice measures (BPM) which go beyond statutory compliance.

A.5.6 This may include BPMs set out in construction industry guidance for example, guidance from the CCS, Waste & Resources Action Programme (WRAP) and CIRIA.

A.5.7 The following approaches will be implemented, where practicable, to minimise the quantity of waste arising and requiring disposal:

- Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme.
- Implementation of a ‘just-in-time’ material delivery system to avoid materials being stockpiled, which can increase the risk of damage and subsequent disposal as waste.
- Attention to material quantity requirements to avoid over-ordering and the generation of waste materials due to surplus.
- Reuse of materials on-site wherever feasible, e.g. reuse of excavated soil for landscaping, recycling of demolition materials into aggregates.
- Off-site prefabrication, where practical, including the use of prefabricated structural elements.
- Segregation of waste at source, where practical, to facilitate a high proportion and high-quality recycling.
- Off-site reuse, recycling and recovery of materials and waste where reuse on-site is not practical, e.g. Through use of an off-site waste segregation or treatment facility or for direct reuse or reprocessing off-site.

A.5.8 The PC will implement the following waste management measures in order to minimise the likelihood of any localised impacts from pollution or nuisance from waste on the surrounding environment:

- Damping down of surfaces during spells of dry weather and brushing/water spraying of heavily used hard surfaces/access points across the site as required.
- Burning of waste or unwanted materials will not be permitted on-site.

- All hazardous materials including fuels, chemicals, cleaning agents, solvents and solvent containing products to be properly sealed in containers at the end of each day prior to storage in appropriately protected and bunded storage areas.
- All demolition and construction workers will be required to use appropriate personal protective equipment whilst performing activities on-site.
- Any waste effluent will be tested and, where necessary, disposed of at a correctly licensed facility by a licensed specialist contractor/s.
- Materials requiring removal from the site will be transported using licensed carriers and records will be kept detailing the types and quantities of waste moved, and the destinations of this waste, in accordance with the relevant regulations.

A.6 Estimate of construction waste arisings

Introduction

A.6.1 The SWMP will include estimates of:

- The types and quantities of earthworks materials arising during construction of the Project and the likely cut and fill balance and material management routes.
- The types and quantities of waste arising during the Project demolition and construction works and the likely management routes and resulting recovery rate.

A.6.2 The PC will review, update and monitor these estimates throughout the design and construction of the Project, and incorporate these updates in the contractors SWMP.

A.6.3 The main types and quantities of waste expected to arise during the demolition works and construction of the Project are shown in Table A4-4.

Table A4-4: Estimated main types of construction waste and management routes

Activity	Waste	Potential management routes
Construction materials	Asphalt	• Recycling
	Concrete	• Recycling
	Aggregates	• Recycling
	Excavated materials	• Reuse (on or offsite) • Recovery (offsite) • Landfill disposal
	Metal	• Recycling
	Packaging and mixed waste	• Recycling • Energy recovery
	Hazardous waste (e.g. paints, chemicals, solvents and oils)	• Recycling • High temperature incineration

Activity	Waste	Potential management routes
	Wood	• Recycling • Energy recovery
Staff activities	Office waste	• Recycling (for separately collected fractions) • Energy recovery (residual waste)
	Waste from canteens and welfare facilities	• Anaerobic digestion (separately collected food waste) • Recycling (separately collected recyclable fractions) • Energy recovery (residual wastes)
Construction plant maintenance	Oils (including oil filters)	• Recycling • Energy recovery • High temperature incineration
	Tyres	• Recycling • Energy recovery
	Batteries	• Recycling

A.7 Waste management on-site

Waste management routes

A.7.1 The waste hierarchy sets out the priority order that should be considered when managing wastes. A basic representation of the waste hierarchy is provided below in Figure A4-1 (taken from Ref 4.7) and the PC will use the hierarchy as a guide to encourage the prevention of waste and to define waste management options.

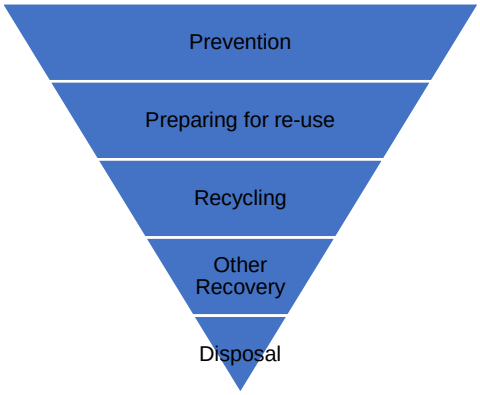


Figure A4-1: Waste hierarchy

A.7.2 When considering waste management options for the Project, the PC will take account of the site's location, natural environment and available infrastructure. The PC will consider the following options when determining the preferred waste management option for each waste stream.

Preparing for Reuse

A.7.3 The aim is to provide design features on the Project to use materials in their current state and form. Reuse can be undertaken either on-site or off-site.

A.7.4 Where possible, excavated earthworks materials and soils arising from the Project will be stockpiled on-site and reused within the Project.

Recycling

A.7.5 The aim is to reuse materials won on-site by recycling them into an alternative form that can be used for construction purposes (for example crushing concrete, brick or other inert wastes to produce aggregate material). By recycling on-site, as far as practicable, the quantity of waste requiring off-site management is reduced and carbon emissions associated with transportation are eliminated.

A.7.6 Recycling may also be achieved by utilising materials with a recycled content, such as recycled aggregates produced off-site.

Recovery

A.7.7 This generally aims to recover energy from waste which cannot otherwise be reused or recycled. This may include waste materials such as hazardous liquids or solids that can be sent to energy from waste facilities.

A.7.8 Recovery may also include the beneficial use of materials on land for restoration (deposit for recovery).

Disposal

A.7.9 The least preferred option in the waste hierarchy is a final disposal route such as landfill. Some waste streams will inevitably end up with such a solution.

A.7.10 When placing waste disposal contracts, the PC will consider the implications of long distance travel in terms of health and safety risk, commercial terms and increased emissions from vehicles.

A.7.11 The PC will ensure the pre-treatment of all hazardous and non-hazardous wastes prior to disposal to landfill. The methods of pre-treatment will enable the waste to meet the ‘three-point test’:

- It must be a physical, thermal, chemical or biological process including sorting.
- It must change the characteristics of the waste.

A.7.12 It must do so in order to:

- Reduce its volume
- Reduce its hazardous nature
- Facilitate its handling
- Enhance its recovery

A.7.13 Source segregation can be seen as a pre-treatment option and as such can be applied to waste generation on-site including general waste and arisings, and will take place on the Project.

A.7.14 The PC will ensure that a declaration stating the pre-treatment method applied to the waste is appended to any WTN for non-hazardous waste being sent for disposal.

Waste storage and segregation

A.7.15 The PC will store excavated soils and earthworks materials on-site in stockpiles until required for use.

A.7.16 Demolition materials that are to be recycled for use on-site must be separated at source and stored separately both before and after the treatment process.

A.7.17 Construction materials that are stored on-site must be in designated areas that are flat, accessible and secure in order to avoid damage or loss. Materials must be stored in appropriate conditions to avoid damage through, for example, water ingress or vermin. Materials must be retained in their original packaging to protect them from damage.

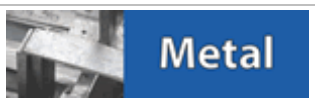
A.7.18 The PC must ensure that the construction site compounds incorporate designated waste storage areas for skips or similar suitable waste receptacles. The PC must ensure that these areas are surfaced with an impermeable barrier, such as hardstanding/tarmac or using impermeable membranes and the location of any existing drainage will be noted.

A.7.19 At the waste storage areas, the PC must segregate waste into the following types as a minimum: inert; wood; metals; packaging; general waste; hazardous solid wastes; hazardous liquid wastes.

A.7.20 The PC will implement the following waste management procedures:

- All waste containers must be secure and ensure that no waste is allowed to escape.
- All waste containers must be clearly labelled using a colour coding system so that users know what wastes can be placed in each container.

A.7.21 Waste containers must be appropriately colour coded using generic colour codes as shown below:

Grey: Inert		Green: Wood	
Black: Mixed		Brown: Packaging	
Blue: Metal		Orange: Hazardous	

White: Gypsum			

- Lockable storage will be provided for all hazardous waste.
- All waste containers must be sited at least 10m away from watercourses, ditches and other areas of environmental sensitivity.
- Liquid wastes must be stored in enclosed/lidded containers and stored within a suitable bunded area, or otherwise provided with secondary containment.
- Separate containers must be provided for each type of hazardous waste.
- Each type of hazardous waste must not be mixed with any other hazardous or non-hazardous waste.
- Sewage from the site offices/compounds will drain to septic tank and be collected by a suitable specialist waste contractor.
- Portable toilet facilities on-site (portaloos etc.) must be emptied by the facility provider as per their service agreement.

Waste carriers and facilities

A.7.22 The PC will manage all waste generated on the Project in accordance with legal requirements. The PC must record details of the proposed waste carrier for each waste stream in the registration table (see Annex 1 for example), with Waste Carriers Licence details appended to the contractors SWMP.

A.7.23 The PC will ensure that the following information is recorded for all waste facilities used:

- Contractors name.
- Date(s) of waste removal.
- Type(s) of waste removed (i.e. Non-hazardous waste, hazardous waste, inert (specify).
- Method of treatment, recovery or disposal (i.e. Reuse, recycling, incineration, landfill etc.).
- Volume or weight of waste removed.
- Recovery rate achieved.
- Costs associated with waste removal, transport and treatment, including Landfill Tax charges where applicable.

Waste Transfer Notes (WTN)

A.7.24 The PC must ensure that all movements of waste from site are accompanied by a WTN, which will detail specific information. The PC's Site Materials and Waste Manager or other competent person will check that each WTN contains the following:

A.7.25 The name of the person receiving the waste and what they are authorised to do with that waste as a Registered Waste Carrier can only transport waste.

- Type of waste.
- The Standard Industrial Classification (SIC) code.
- The six-digit EWC code.
- Address of the producing site and details of the waste producer.
- Waste carrier's details including registration number.
- Quantity of waste.
- How it is contained (e.g. 8 cubic yard skip).
- Address of the receiving site (e.g. Landfill) and the Environmental Permit or Exemption No. Associated with the receiving site.
- The date to which the WTN applies.
- If the material is non-hazardous waste and it is destined for disposal directly to landfill, pre-treatment must have been applied and a declaration detailing the treatment applied appended to the WTN.
- A declaration that the waste has been treated in line with the requirements of the waste hierarchy.

A.7.26 The site representative signing the WTN must ensure all WTNs are placed in the Site Waste Management File and kept for a minimum period of two years (for non-hazardous waste).

A.7.27 By signing a WTN the site representative is confirming that all the details are correct and that the material is to be sent by a licensed waste carrier to a suitably licensed receiving site, permitted to receive that type of waste. The signature is binding of this fact and completes the WTN as a legal document.

A.7.28 The Site Materials and Waste Manager or other competent person signing the WTN must additionally ensure that the Waste Carrier is using a suitable vehicle with adequate, covered containment for the waste.

Waste Consignment Notes (Hazardous Waste)

A.7.29 The PC must ensure that a Hazardous Waste Consignment Note (HWCN) is completed for every movement of hazardous waste. The HWCN must be prepared before the waste is moved. Prior to signing, the Site Materials and Waste Manager or another competent person must ensure that the HWCN includes:

- Hazardous Waste Premises Code.
- Consignment note code.
- SIC Code.
- Name and address of the site from which the waste is being moved.
- Date of removal.

- Type of waste produced, including the quantity and the EWC code.
- The name of the person who is receiving the waste and what they are authorised to do with that waste e.g. Registered waste carrier can only transport waste.
- The final disposal site that is authorised to accept the waste;
- Retention period for hazardous waste.
- The PC must retain a copy of the HWCN for a minimum of three years.

Waste Documentation

A.7.30 The PC must retain all waste documentation at the main site compound and, following completion of the Project, at the PC's head office. This includes:

- The SWMP (two years after end of construction of the Project).
- Waste transfer documentation (two years for WTNs and three years for HWCNs);
- Copies of any exemptions or permits.
- Copies of waste carrier and treatment/disposal site licences or permits.

Fly-tipping

A.7.31 Fly-tipping of waste on or adjacent to ongoing construction projects can be a significant issue.

A.7.32 A site assessment of pre-existing fly tipping hotspots must be undertaken and, where appropriate, security measures to prevent access to such areas will be implemented.

A.7.33 If waste is fly-tipped on the site, the PC will have a duty of care to ensure it is dealt with safely and disposed of correctly, even if not the producer of the waste. The PC must report any instance of fly-tipping to the local authority.

A.8 Key responsibilities

Reporting and auditing

A.8.1 The effectiveness of the contractor SWMP will depend upon the enforcement of its requirements on-site by the nominated Site Materials and Waste Manager and Site Manager. Responsibility for the formal recording of waste movements lies with the Site Materials and Waste Manager or PM.

A.8.2 The PC must maintain a record of all materials that come on to site. The quantity of reused, recycled and secondary aggregate must be recorded, alongside details of the supplier, the producing facility and records that demonstrate that the material meets all relevant technical and regulatory requirements.

A.8.3 The PC must maintain a record of all wastes that are removed from the site and their management route. Each waste management contractor must provide details of the types and quantities of waste removed from the site, the receiving waste management facility and the associated recycling, recovery and disposal rates for each waste stream (See Annex 2 for example).

A.8.4 The PC must monitor and record details of the wastes placed in all waste receptacles to ensure that contamination has not occurred.

A.8.5 The PC must continually review the types of surplus materials and waste being produced and change the site set up to minimise wastage rates and maximise reuse or recycling.

A.8.6 The Authority or its representatives may carry out 'spot checks' in relation to the completeness of any WTNs and any HWCNs.

Review of the Site Waste Management Plan

A.8.7 The PC must review the contractors SWMP at least once every six months during the lifetime of the Project to ensure that KPI targets are being achieved and that realistic solutions are provided for unplanned events or abnormal wastes. The PC must also review the final WMP if there is any significant change in the Project. These reviews will involve the completion and submission of a monitoring report to The Authority (or its representative) in an agreed format.

Additional duty of care checks

A.8.8 The PC must periodically, at intervals to be determined, follow waste loads to confirm that the waste has been transferred to the place stated on the WTN, with any irregularities investigated immediately, and reported as an environmental incident. Action may involve termination of contract and/or notification to the EA.

Site inspections

A.8.9 The Site Manager or nominated deputy must undertake a daily inspection of the construction areas including all areas used for waste management. Any issues shall be recorded in the daily log along with any corrective action taken.

Closure reporting

A.8.10 Within three months of the completion of works, the PC must submit a Waste Management Closure Report to the Client (or its representative) to demonstrate the effective implementation, management and monitoring of construction materials and waste during the construction lifetime of the Project.

A.9 References

Ref 4.1 The Stationary Office, Environmental Protection Act 1990, 1990 http://www.legislation.gov.uk/ukpga/1990/43/contents

Ref 4.2 The Stationary Office, The Waste (England and Wales) Regulations 2011, 2011 http://www.legislation.gov.uk/uksi/2011/988

Ref 4.3 The European Parliament and the Council of the European Union, Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives, 2008 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02008L0098-20180705

Ref 4.4 The Stationary Office, Hazardous Waste (England and Wales) Regulations 2005, 2005 http://www.legislation.gov.uk/uksi/2005/894/contents

Ref 4.5 The Stationary Office, Control of Pollution (Amendment) Act 1989, 1989 https://www.legislation.gov.uk/ukpga/1989/14/contents

Ref 4.6 The Stationary Office, Environmental Permitting (England and Wales) Regulations 2016, 2016 http://www.legislation.gov.uk/uksi/2016/1154/contents

Ref 4.7 Defra, Guidance on Applying the Waste Hierarchy, 2011 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69403/pb13530-waste-hierarchy-guidance.pdf

Annex 1: Waste carriers [Example]

Waste type(s)	EWC code	Waste carrier name	Contact details	Waste carriers registration number	Expiry date (dd/mm/yyyy)	Date checked with Environment Agency (dd/mm/yyyy)

Annex 2: Waste Management [Example]

Waste type and quantity			Management route (% or quantity)						Waste carrier	Off-site waste management facility
Waste type	EWC Code	Quantity (tonnes)	On-site		Off-site					
			Reused on-site	Recycled for use on-site	Reused off-site	Recycled off-site	Recovered off-site	Disposal		