

10.

Ground Conditions

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10.1 Introduction

10.1.1 The Denny to Wishaw Network Upgrade Project (“the Project”) involves the construction of a new overhead line (“overhead line”) and ancillary infrastructure. This chapter focusses solely on the new-build overhead line (“WB Route”) from Bonnybridge Substation in Falkirk to just north of Glenmavis. Further information on the Project and its key components is provided in Chapter 4: Project Description and illustrated in purple on Figure 4.1.

10.1.2 This chapter considers the likely significant effects associated with the construction of the Project on Ground Conditions. This includes:

- Contamination, degradation or erosion of soil
- Contamination of nearby surface water from construction works, temporary works, spills or plant breakdown
- Disturbance of potentially contaminated soils (identified in land contamination) and creation of new pathways allowing migration of such contaminants to reach sensitive receptors (including construction workers, site users and the water environment) during construction
- Excavation, temporary storage, backfilling and compaction of soils during tower installation, substation works, including the creation of temporary access tracks and hardstanding areas
- Disturbance and damage to peatland habitats relating to all works and construction of temporary access tracks and hardstanding areas
- If deeper foundation solutions are proposed these could present preferential pathways or reservoirs for hazardous gasses associated with both the geology and mining, an assessment of the potential receptors and risk associated would need to be reviewed in detail
- Effect on climate due to loss of carbon (discussed further in the Climate Chapter (Chapter 16))
- Surface subsidence and damage to sections where new build lines are proposed resulting from the presence of historic coal mine workings
- Consideration of the Project’s impact to geology
- Potential pollution related impacts during construction. Including accidental leaks of fuels and oils from vehicular plant or from stored liquids, and temporary impacts from the use of materials and substances with pollution potential (e.g., concrete, fuels, oils and soils)
- The risk of loss of coal and other mineral resources.

- 10.1.3 No or limited contact with or disturbance of soils will be required during the operational phase and therefore this element has been scoped out in line with the scoping report.
- 10.1.4 Further mitigation methods to address any likely effects are proposed, where appropriate, and likely residual effects are then assessed. This assessment uses the desk-based research presented in Appendix 10.1 to provide a better understanding of the baseline conditions of the Project.
- 10.1.5 In addition, the assessment uses information and findings presented in Chapter 8: Biodiversity and Chapter 9: Water Environment. It should be noted that there is overlap between these disciplines; groundwater, surface water and ecological receptors are discussed within this chapter as they will be assessed as potential receptors to any land contamination or pollution related impacts from construction of the Project. However, groundwater and surface water as strategic resources and / or discharge points, hydrogeological response to dewatering, and flooding are considered in Chapter 9: Water Environment, and ecological receptors are considered in more detail in Chapter 8: Biodiversity.
- 10.1.6 As part of the Project and to characterise peat depth and extent surrounding proposed infrastructure, a peat probing survey (taking account of relevant guidance) is to be completed to support the planning application. The probing survey is currently ongoing during the writing of this chapter and as such has not been included. Following completion of the probing, the results shall be reviewed and this chapter updated to account of the findings. This will include the provision of supporting documents such as Peat Management Plans (PMPs) and, where required, a Peat Landslide Hazard Risk Assessment (PLHRA). As the results of the probing are not available at time of writing, the worst-case scenario prior to any mitigation has been considered as part of the reporting. It is considered that following review of the probing results and the inclusion of further specific mitigation relating to the peat depth and extent identified, the updated chapter would reduce the overall effects on the peat.

10.2 Legislation and Policy

Legislation

- 10.2.1 Consent will be sought under section 37 of the Electricity Act 1989¹ ('section 37 consent') for the New Build Overhead Line and Upgraded Overhead Lines. The Applicant will also apply for deemed planning permission under section 57 (2) of the Town and Country Planning (Scotland) Act 1997² for the Substation Works (except the Cumbernauld Substation works) and the Ancillary Works (except the Distribution Line Works) and associated works (such as [temporary infrastructure and access tracks]) ('deemed planning permission'). This is hereinafter referred to as the Electricity Act Application.
- 10.2.2 There is legal, policy and advice documents which are material considerations to the decision-making process, covering relevant legislation, national and local planning policy, and advice notes / supplementary guidance. These are described in the following sections for the Ground Conditions topic.

¹ UK Legislation. (1989). Electricity Act 1989.

² UK Legislation. (1997). Town and Country Planning (Scotland) Act.

National Legislation

10.2.3 The following national legislation (and European Directives incorporated into UK law by the European Union (Withdrawal) Act 2018 and the UK withdrawal from the European Union (Continuity) (Scotland) Act 2021³) is relevant to the assessment of ground conditions:

- The Environmental Liability (Scotland) Regulations 2009⁴,
- Contaminated Land (Scotland) Regulations 2005⁵,
- The Environmental Protection (Duty of Care) (Scotland) Regulations 2014⁶,
- The Construction (Design and Management) Regulations 2015⁷,
- Nature Conservation (Scotland) Act 2004⁸,
- Town and Country Planning (Scotland) Act 1997^{Error! Bookmark not defined.},
- Environmental Protection Act 1990⁹,
- Water Environment and Water Services (Scotland) Act 2003¹⁰,
- Environmental Authorisations (Scotland) Amendment Regulations 2025¹¹,
- Water Framework Directive 2000/60/EC (European Community)¹² (“WFD”)¹³,
- Pollution Prevention and Control (Scotland) Regulations 2012 (“PPC”)¹⁴,
- Groundwater Directive 2006/118/EC¹⁵ (“GWD”)¹⁵,
- The Climate Change (Scotland) Act 2009¹⁶, and
- Environmental Authorisations (Scotland) Regulations 2018 (EA(S)R)¹⁷.

National Policy

National Planning Framework 4 (NPF4)

10.2.4 NPF4 (Scottish Government, 2023)¹⁸ sets out the Scottish Government spatial development principles, regional priorities, national developments and national planning policy, covering six spatial principles which aim to deliver sustainable, liveable and productive places.

10.2.5 Policy 5 (Soils) within NPF4¹⁸ intends to “protect carbon-rich soils, restore peatlands and minimise disturbance to soils from development.” It states that where development on

³ Scottish Parliament (2021). UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021

⁴ HM Government. (2009). The Environmental Liability (Scotland) Regulations.

⁵ HM Government. (2005). Contaminated Land (Scotland) Regulations.

⁶ HM Government. (2014). The Environmental Protection (Duty of Care) (Scotland) Regulations.

⁷ HM Government. (2015). The Construction (Design and Management) Regulations.

⁸ HM Government. (2004). Nature Conservation (Scotland) Act.

⁹ HM Government. (1990) Environmental Protection Act.

¹⁰ HM Government. (2003). Water Environment and Water Services (Scotland) Act.

¹¹ Scottish Environmental Protection Agency (2025). Environmental Authorisations (Scotland) Amendments Regulations

¹² Post Brexit, the Directive itself no longer applies directly to the UK. However, the domestic legislation that was based on the Directive continues to apply.

¹³ European Parliament. (2000). Water Framework Directive (WFD) 2000/60/EC.

¹⁴ Scottish Parliament. (2012). Pollution Prevention and Control (Scotland) Regulations (PPC).

¹⁵ European Parliament. (2006). Groundwater Directive (GWD) 2006/118/EC.

¹⁶ Scottish Parliament. (2009). Climate Change (Scotland) Act.

¹⁷ Scottish Parliament. (2018). Environmental Authorisations (Scotland) Regulations 2018 (EA(S)R).

¹⁸ Scottish Government. (2023). National Planning Framework 4.

peatland, carbon-rich soils, or priority peatland habitat is proposed, a detailed site specific assessment will be required to identify a number of factors (including peat depth, condition, stability and an assessment of the likely effects of the development on peatland) , which should inform careful project design and ensure, in accordance with relevant guidance and the mitigation hierarchy, that adverse impacts are first avoided, then minimised through best practice. It notes that a peat management plan will be required to demonstrate this approach.

- 10.2.6 Policy 9 (Brownfield, vacant and derelict land and empty buildings) within NPF4¹⁸ intends to “encourage, promote and facilitate the reuse of brownfield, vacant and derelict land and empty buildings, and to help reduce the need for greenfield development.” It states that “where land is known or suspected to be unstable or contaminated, development proposals will demonstrate that the land is, or can be made, safe and suitable for the proposed new use.”
- 10.2.7 Policy 11 (Energy) within NPF4¹⁸ states that project design and mitigation should address any effects on hydrology and the water environment (see also Chapter 9: Water Environment).

Scotland’s Zero Waste Plan

- 10.2.8 Scotland’s Zero Waste Plan (Scottish Government, 2010)¹⁹ sets the strategic direction for waste policy for Scotland. It aims to maximise the reuse, recycling and recovery of resources and minimise demand on primary resources. Decision-making for all new developments must take account of the waste management hierarchy (prevention, reduction, reuse, recycling and energy recovery over waste disposal).

Scottish Soil Framework

- 10.2.9 The Scottish Soil Framework (Scottish Government, 2009)²⁰ aims to raise awareness of the services soils provide to society, the pressures soils face, and to instigate a process by which key stakeholders work together to achieve better soil protection. It promotes the sustainable management and protection of soils consistent with the economic social and environmental needs of Scotland. The Framework identifies activities that will contribute to thirteen soils ‘outcomes.’ The activities particularly relevant to geology and soils on the Project include reducing soil contamination and reducing pressure on soils by using brownfield sites in preference to greenfield land.

Planning Advice Notes (“PANs”) and Specific Advice Sheets

- 10.2.10 PANs²¹ and Specific Advice Sheets set out detailed advice from the Scottish Government in relation to a number of planning issues. PANs and Specific Advice Sheets relevant to the Project are detailed in Table 10-1.

¹⁹ Scottish Government. (2010). Scotland's Zero Waste Plan.

²⁰ Scottish Government. (2009). Scottish Soil Framework.

²¹ Scottish Government. (2024). Planning advice notes (PANs).

Table 10.1 Planning Advice Notes and Specific Advice Sheets

Planning Advice Notes and Specific Advice Sheets	Key Requirements relating to Geology, Soils and Mining	The Project
PAN 33: Development of Contaminated Land (2017)	Provides advice on the following: - the implications of the new contaminated land regime for the planning system - the development of contaminated land - the approach to contaminated land in development plans - the determination of planning applications when the site is or may be contaminated	Mitigation measures are outlined within Section 10.5 of this chapter and will be within the CEMP prepared prior to construction.
Planning and Waste Management Advice (2015)	States that there should be environmental protection considerations to mitigate any potential effects on the water environment.	Mitigation measures are outlined within Section 10.5 of this chapter and will be within the CEMP prepared prior to construction

Local Policy

North Lanarkshire Local Development Plan

10.2.11 Local planning policies for North Lanarkshire are detailed in the North Lanarkshire Local Development Plan (“NLLDP”) (2022)²². The main policies relevant to geology, soils and mining are:

- **PROT A Policy Natural Environment and Green Network Assets:** North Lanarkshire Council will protect natural and resilient sustainable places by safeguarding natural heritage assets. When considering future development affecting the natural environment and the specific Green Network Assets identified in this Policy, the Council will seek guidance where appropriate from NatureScot. NatureScot has produced a variety of policy and guidance documents for aspects of the natural environment which the Council will utilise and will expect developers to consider in preparing proposals. Site categories

²² North Lanarkshire Council. (2022). North Lanarkshire Local Development Plan.

identified in this Policy are locations protected for their importance for species or habitats, or other environmental value: including geological / geodiversity sites.

- **PROT C Policy Mineral Resources:** North Lanarkshire Council will operate a presumption against proposals for development that would potentially sterilise valuable mineral resources. In line with National Policy the Council will safeguard the categories of mineral supplies specified below. However, applications for extraction of such resources will still require to be assessed on supply, environmental, social and economic impacts, and restoration criteria in guidance. Site categories identified in this Policy are Construction Minerals (hard rock, crushed rock aggregate and sand & gravel) and Fossil Fuels (coal and unconventional fossil fuels).

10.2.12 Environmental Design Quality (“EDQ”) Policies applicable to the Project include:

- **EDQ 1 Policy Site Appraisal:** Any proposed development will require to be appraised in terms of the site and its surroundings to ensure it will integrate successfully into the local area and avoid harm to neighbouring amenity. The matters to be addressed in the appraisal include but are not limited to: ground stability and contamination on the site and surrounding Land Use Character Area.
- **EDQ 2 Policy Specific Features for Consideration:** The Council will consider development in areas subject to hazards (Hazardous Zones) and other specific features (utilities infrastructure and management areas) identified in this Policy, in accordance with plans and protocols of the relevant managing agencies. The Council will expect applications for Planning Permission to be accompanied by an assessment of how constraints affect sites dependant on the characteristics of the site, its surroundings and the form of development. Category EDQ 2A Hazardous Zones include contaminated land and ground instability. North Lanarkshire Council has published guidance relating to the development of contaminated land, which can be accessed through the Council web site. Developers should consult this guidance when preparing their site appraisals and consult with the relevant section of the Council as required. Where a ground stability, or contamination appraisal identifies the need for any necessary mitigation measures, including treatment or remediation, development will only be permitted where those mitigation measures can be secured.

Falkirk Local Development Plan 2

10.2.13 Local planning policies for Falkirk are detailed in the Falkirk Local Development Plan 2 (2 “FLDP”) (2020)²³. The main policies relevant to geology, soils and mining are:

PE22 The Water Environment:

10.2.14 Policy PE22 of the FLDP2 recognises the importance of the water environment within the Council area in terms of its landscape, ecological, recreational and land drainage functions. Additionally, the policy emphasises the protection and enhancement of watercourses for their landscape, ecological, recreational and land drainage functions.

²³ Falkirk Council. (2020). Falkirk Local Development Plan.

PE25 Soils and Agricultural Land:

- 10.2.15 Policy PE25 of the FLDP2 safeguards high-quality and carbon-rich soils, with a presumption against development that would result in the loss of prime quality agricultural land (Classes 1, 2 and 3.1) unless it meets an overriding local or national need, is allocated in the LDP, supports a rural business, or facilitates renewable energy or minerals extraction consistent with other policies.
- 10.2.16 As relates to carbon-rich soils Policy PE25 of FLDP2 also requires that for developments that would likely disturb or cause significant irreversible damage to areas of carbon-rich soils (e.g. peat) a soil or peat management plan will be required to be submitted. This plan is required to demonstrate areas of the highest quality or deepest peat have been avoided and that any disturbance, degradation or erosion has been minimised through mitigation.

PE27 Vacant, Derelict, Unstable and Contaminated Land:

- 10.2.17 Policy PE27 of the FLDP2 supports proposals that reduce the extent of vacant, derelict, unstable, or contaminated land, provided they comply with other LDP policies. Development on unstable or contaminated sites will only be permitted where appropriate remediation or mitigation measures have been undertaken and proposals meet the requirements of PAN 33, ensuring safe and sustainable reuse of such land.

IR12 Energy Generation Development:

- 10.2.18 Policy IR12 of the FLDP2 sets out that energy infrastructure proposals will be assessed on multiple factors, including ecological and water environment effects and impacts on soils. Developments must also consider cumulative effects and waste minimisation, following detailed guidance in SG14 Renewable and Low Carbon Energy.

IR15 Mineral Resources:

- The sterilisation through development of mineral resources which are likely to be capable of environmentally acceptable extraction will not be permitted.

River Basin Management Plan for Scotland 2021 - 2027 (“RBMP”)

- 10.2.19 The RBMP (Scottish Environmental Protection Agency (“SEPA”), 2021)²⁴ sets out a range of actions to address impacts to the water environment. The RBMP outline actions for public bodies and land managers. The Project is within the RBMP. In summary, the RBMP provides the following:
- The conditions of the water environment,
 - Pressures which could or are impacting the water environment, and
 - Actions to address any impacts.

Guidance

- 10.2.20 Relevant guidance documents for geology, soils and mining are:

²⁴ SEPA. (2021). River Basin Management Plan for Scotland 2021 – 2027.

- Environment Agency's online guidance for the management of land contamination 'Land Contamination: Risk Management' (updated 2025) ("LCRM"), UK Specification for Ground Investigation²⁵,
- Eurocode 7 Geotechnical design. Part 2: Ground investigation and testing (British Standard (BS) EN 1997-2:2007)²⁶,
- BS 5930:2015+A1:2020, Code of Practice for Ground Investigations²⁷,
- BS EN 1997-1:2004 + A1:2013, Eurocode 7 – Geotechnical Design – General Rules²⁸,
- BS 10175:2026, Investigation of Potentially Contaminated Sites - Code of Practice²⁹,
- Construction Industry Research and Information Association ("CIRIA") C552, guidance, Contaminated Land Risk Assessment, A Guide to Good Practice (2001)³⁰,
- Construction Industry Research and Information Association ("CIRIA") C532, Control of Water Pollution from Construction Sites - Guidance for Consultants and Contractors (2001)³¹,
- Construction Industry Research and Information Association ("CIRIA") C578D, Abandoned Mine Workings Manual (2019),
- Construction Industry Research and Information Association ("CIRIA") C811, Environmental Good Practice on Site Guide (fifth edition) (2023)³²,
- Design Manual for Roads and Bridges ("DMRB"), LA109 Geology and Soils (2019),
- DMRB, LA 104 Environmental Assessment and Monitoring (2020),
- DMRB, LA 110 Material Assets and Waste (2019)³³,
- DMRB, LA 113 Road Drainage and the Water Environment (2020),
- CL:AIRE, Control of Asbestos Regulations 2012³⁴: Interpretation for Managing and Working with Asbestos in Soil and Construction & Demolition materials: Industry Guidance (2016) (shortened name CAR-SOILTM),
- SEPA, Guidance on the classification and assessment of waste (1st Edition v1.1), Technical Guidance WM3 (2018)³⁵,
- SEPA, Land Remediation and Waste Management Guidelines³⁶,

²⁵ Site Investigation Steering Group. (2022). UK Specification for Ground Investigation, 3rd Edition.

²⁶ British Standards. (2007) Eurocode 7 Geotechnical design. Part 2 : Ground investigation and testing.

²⁷ British Standards (BS). (2020) BS 5930:2015 + A1:2020, Code of Practice for Ground Investigations.

²⁸ British Standards (BS). (2013) BS EN 1997-1:2004 + A1:2013, Eurocode 7 – Geotechnical Design – General Rules

²⁹ British Standards (BS). (2017) BS 10175:2026, Investigation of Potentially Contaminated Sites - Code of Practice.

³⁰ CIRIA. (2001) CIRIA Report C552, Contaminated Land Risk Assessment: A Guide to Good Practice.

³¹ CIRIA. (2001) CIRIA C532 Control of Water Pollution from Construction Sites - Guidance for Consultants and Contractors.

³² CIRIA. (2023) CIRIA C811, Environmental good practice on site guide (fifth edition).

³³ Bridges, D. M. (2019) LA 110 Material assets and waste.

³⁴ CL:AIRE. (2012) Control of Asbestos Regulations 2012: Interpretation for Managing and Working with Asbestos in Soil and Construction & Demolition materials: Industry Guidance.

³⁵ SEPA. (2018). Guidance on the classification and assessment of waste, (1st Edition v1.1), Technical Guidance WM3.

³⁶ SEPA. (n.d.). Land remediation and waste management guidelines.

- Guidance of Pollution Prevention (“GPP”), available on the NetRegs website and Pollution Prevention notes where GPPs are not yet available (these are gradually being withdrawn and replaced by the GPPs),
- DEFRA’s 2009 ‘Construction Code of Practice for the Sustainable Use of Soils on Construction Sites’³⁷,
- Scottish Government (2024), CO₂ Mine Gas - Site Investigation and Risk Assessment: Best Practice³⁸,
- SNIFFER, Review of the application of 'Best Practicable Means' within a regulatory framework for the management of radioactive wastes (2005)³⁹.
- CL:AIRE, Good Practice for Risk Assessment for Coal Mine Gas Emissions (2021)⁴⁰
- CO₂ Mine Gas – Site Investigation and Risk Assessment: Best Practice (2024)⁴¹

10.3 Consultation

10.3.1 Table 10.2 outlines the relevant consultation that has taken place in preparing this assessment.

³⁷ DEFRA. (2009). Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

³⁸ Scottish Government. (2024). CO₂ mine gas - site investigation and risk assessment: best practice.

³⁹ SNIFFER. (2005). Review of the application of 'Best Practicable Means' within a regulatory framework for the management of radioactive wastes.

⁴⁰ CL:AIRE (2021) Good Practice for Risk Assessment for Coal Mine Gas Emissions

⁴¹ Scottish Government (2024) CO₂ Mine Gas – Site Investigation and Risk Assessment: Best Practice

Table 10.2. Summary of Consultation (Scoping Responses)

Consultee	Summary of Response (those specific to the geology, soils and mining topic) ⁴²	Action Taken
NatureScot	<u>Protected Sites</u> We acknowledge that there are no designated sites for Geological interest in or within the vicinity of the project area. <u>Peatland</u> We note that there are two localised areas of Class 1 (national important carbon-rich soils, deep peat and priority peatland habitat which are likely to be of high conservation value) soils present beneath the New-build Overhead Line to the east of Cumbernauld Substation. The larger of the two areas is located north of Old Shields. We understand that Peat depth surveys associated with the new-build overhead line (where potential Class 1 carbon-rich soils are present) will be undertaken to allow estimations of peat depth and extent and facilitate avoidance of the deepest areas of peat. We welcome that the EIA Report for the overhead line project components will include further baseline peat survey information, and an assessment of impacts on peat, including required mitigation.	<u>Protected Sites</u> Comments related to ecological sites are addressed within Chapter 8: Biodiversity. Ecological receptors discussed within this chapter relate to potential receptors to any land contamination or pollution related impacts from construction of the Project. <u>Peatland</u> Comments regarding peatland are noted. Peat probe surveying is underway and a PMP is to be prepared following this. As the peat probing for the Project is ongoing, outline PMPs have been produced and submitted as part of this application. This PMPs outline the general principles that will be followed for the Project. On completion of the peat probing, the PMPs shall then be completed to be more project specific and resubmitted.
SEPA	Response on Scoping Report - 4th August 2025 We note from Section 9.5 of the scoping report that desk studies will be carried out for the cable route, which involves new and replacement overhead cables as well as underground sections, and five substations on the route. Approaches have already been made by the applicant and their environmental consultants to the Radioactive Substances Unit (SEPA RS Unit) at the pre-planning stage, in order to obtain advice about the potential for radioactive contamination at Wishaw substation on the route, as a	GWDTE and watercourses are addressed within Chapter 9: Water Environment and Chapter 8: Biodiversity. Groundwater, surface water and ecological receptors are discussed within this chapter as they have been assessed as potential receptors to any land contamination or

⁴² The response summaries provided within this table are not a full quote of the responses.

precautionary matter, since it is located on land in proximity to a former clock factory that used radium-226 in the past. The applicant is advised to refer to the consultation responses previously provided by SEPA RS Unit, and to contact SEPA and the relevant local authority planning service for further advice if the route should change from that previously discussed.

We highlight a further section of the route that would require to be kept scoped in for further assessment if groundworks are required at that location, adjacent to the former OFFICIAL landfills known as Kilgarth and Dalmacoulter that were authorised to accept 'special precautions' waste. This is discussed further in additional correspondence from SEPA on 22nd January 2026 and is presented at the end of this section.

We would be pleased to liaise further with the relevant local authority planning service and applicant at a later stage of the project, given that the scoping report proposes the preparation of individual Phase 1 Geotechnical and Geoenvironmental Reports for the project components that include the existing overhead lines on the XX route. The scoping report states in Section 9.5 that "The key impacts arising from these project components would be covered under the Phase 1 Reports, which will accompany each Local Planning application." We would be pleased to comment on the findings and conclusions of any Phase 1 report at the XX route concerning any aspects that it would be prudent to investigate further using radioactive walkover surveys, should this be recommended. We will also be pleased to continue to provide advice and support to the relevant Councils as required with this Project.

Disruption to GWDTE and existing groundwater abstractions

The construction and operation of developments can disrupt groundwater flow and impact on Groundwater Dependent Terrestrial Ecosystems (GWDTE), which are protected under the Water Framework Directive, and existing groundwater abstractions. The layout and design of the development must avoid adverse impacts on such areas, ensuring the water environment, including GWDTE and existing groundwater abstractions, are protected.

Pollution Prevention and Environmental Management

The submission must include a schedule of mitigation, which includes reference to best practice pollution prevention and construction techniques (for example, limiting the maximum area to be stripped of soils and peat at any one time) and regulatory requirements.

Life extension, repowering and decommissioning

pollution related impacts from construction of the Project.

The WB Route will not intersect with Wishaw substation, and therefore the historical clock factory and radioactive substances are out of the scope of this chapter. Excavated materials, waste management and pollution prevention and environmental management is discussed within Section 10.5.71 – 10.5.79, 'Embedded Mitigation and Waste Management'.

Peat is a receptor for the Project and as such the presence of peat in relation to the Project, surveys undertaken, assessment of the impacts on peat and proposed mitigation for the peat are discussed within this chapter. Due to the limited amount of peat identified within the Project, as limited GI is available at this stage, as the works proposed will not generate large volumes of peat and as any peat generated will be reused through reinstatement of the permanent works a Peat Management Plan ("PMP") has not been produced at this stage. A PMP is to be prepared following the peat probe surveying which is being undertaken.

Following SEPA's response on 22nd January 2026, should ground disturbance be anticipated where it previously was not or if any made ground or landfill-type materials are encountered during works, specialist

The discarding of materials as waste should be avoided and the waste hierarchy applied to waste produced during construction, operation and decommissioning of the Project.

Peatland habitat

The project may intersect areas of peatland, including potentially sensitive and near-natural peatland habitats identified through peat depth surveys and mapping. These peatlands are likely to be of high conservation value, serving as significant carbon stores and supporting biodiversity, water quality, and flood management functions.

The EIA Report should include a comprehensive and detailed assessment of the potential impacts on peatland and carbon-rich soils. A Peat Management Plan (**PMP**) should be submitted. The methodologies outlined in SEPA's and NatureScot's online guidance should be followed in full, with clear justification provided for any deviations. The EIA Report must demonstrate how the project design has sought to avoid important peatland areas through careful site layout and micro-siting. Where avoidance is not possible, the report should detail the mitigation and/or compensation measures proposed to offset any adverse effects, including restoration plans and the management of excavated peat.

All mitigation and compensation measures must be clearly described, with details on how they will be secured and monitored, ensuring compliance with national planning policies and regulatory requirements.

A PMP should be undertaken and must include:

- A table setting out the volumes of acrotelmic, catotelmic and amorphous peat to be excavated. These should include a contingency factor to consider variables such as bulking and uncertainties in the estimation of peat volumes.
- A table clearly setting out the volumes of acrotelmic, catotelmic and amorphous excavated peat: (1) used in making good site specific areas disturbed by development, including borrow pits (quantities used in making good areas disturbed by development must be the minimum required to achieve the intended environmental benefit and materials must be suitable for the proposed use), (2) used in on and off site peatland restoration, and (3) disposed of, and the proposed means of disposal (if deemed unavoidable after all other uses of excavated peat have been explored and reviewed).

Details of proposals for temporary storage and handling of peat.

- Suitable evidence that the use of peat in making good areas disturbed by development, is genuine and not a waste disposal operation, including evidence on the suitability of

geo-environmental / geotechnical consultant advice will be sought prior to commencing works, see Paragraph 10.7.76.

the peat and evidence that the quantity used matches and does not exceed the requirement of the proposed use.

- If peat is to be used in the reinstatement of borrow pits on site, cross sections and plans should be provided showing the proposed maximum peat depth profiles for each category of peat, phasing and final restoration profiles in relation to surrounding land with a clear hydrological justification for the use of catotelmic peat also being given. The target restoration habitat for each borrow pit should be specified, along with how this will be maintained and managed in perpetuity.
- Use of excavated peat in areas not disturbed by the development itself is no longer a matter we provide planning advice on. Unless the excavated peat is certain to be used for construction purposes in its natural state on the site from where it is excavated, it will be subject to regulatory control. The use of excavated peat off-site, including for peatland restoration, will require the appropriate level of environmental authorisation. Excavated peat will be waste if it is discarded, or the holder intends to or is required to discard it. These proposals should be clearly outlined so that we can identify any regulatory implications of the proposed activities. This will allow the developer and their contractors to tailor their planning and designs to accommodate any regulatory requirements. Further guidance on this can be found in the document *Is it waste - Understanding the definition of waste.*”

The following should also be included to support the PMP:

- An initial phase of peat probing should take place in all locations where mapped information suggests peat may be present. Further detailed probing need only take place in locations where initial survey suggests peat greater than 1 m is present.
- Overlay maps showing infrastructure in relation to peat depth and peatland condition. Evidence that any use of peat for restoration is appropriate and not a waste disposal operation. Justification for any unavoidable disturbance, with a preference for limiting excavation to areas of shallow peat and avoiding near-natural peatland wherever feasible.

Response on additional information pertaining to Kilgarth and Dalnacoulter Landfills (22nd January 2026). Refer to Appendix 10.2.

SP Energy confirms that proposed works do not encroach on the mapped extents of the Kilgarth or Dalnacoulter landfills. SP Energy confirmed that where routes pass close to these areas, and where access tracks cross the former refuse tip identified on 1962 OS mapping near towers

	WB001, XX019B and XX019A, all access will comprise surface-laid plastic trackway with no soil stripping or planned ground disturbance. A precautionary approach is still advised, as the scope or extent of earthworks may change. SEPA recommends that specialist geo-environmental/geotechnical advice is obtained if made ground or landfill materials are exposed. Construction areas should be fenced to ensure public protection. Potential radioactive contaminants should be managed under existing health and safety procedures, with walkover surveys and screening undertaken as required. Any radioactive materials or wastes encountered will be regulated under EASR 2018.	
North Lanarkshire Council	No comments other than to support the approach suggested of mitigation via design, avoidance, and remediation to minimise disturbances. For contamination, it is noted that comments were provided separately from the council's Environmental Health team in regard to any works within the Gowkthrapple area (see row below).	The Gowkthrapple Area is not within the WB route, however this is discussed within the Phase 1 Report. Refer to Appendix 10.1: Phase 1 Geotechnical and Geo-environmental Desk Study
Environmental Health - North Lanarkshire Council	Proposed investigations with respect to potential ground contamination - Chapter 9.6 summarises the proposed scope of works in relation to the various aspects of the development and Environmental Health are in general agreement with the approach detailed. A site near to the Gowkthrapple Substation, Wishaw is associated with the historical use of the former 'Smiths Clockworks' factory site and luminous paint dating back to the second world war era. This would also relate to the land in relation to the connection of the existing overhead power cables (to be uprated) at the southernmost end of the 'XR' route where this connects to the Gowkthrapple Substation. As such we would advise that the applicant should consult with SEPA at radioactivesubstance@sepa.org.uk. This is in line with a current directive from SEPA and SEPA processes with the applicant required to follow any general safety advice required by SEPA in relation to this subject.	The WB Route will not intersect with Wishaw substation, and therefore the historical clock factory and radioactive substances are out of the scope of this chapter. This information is further discussed within the Wishaw Substation Desk Study Report (AECOM, 2026. Phase 1 Geoenvironmental and Geotechnical Report, January 2026)
Falkirk Council	No comments other than to broadly agree with the conclusions in relation to likely environmental effects.	None required.

**Scottish Ministers’
Comments**

Scottish Ministers consider that where there is a demonstrable requirement for peat landslide hazard and risk assessment (PLHRA), the assessment should be undertaken as part of the EIA process to provide Ministers with a clear understanding of whether the risks are acceptable and capable of being controlled by mitigation measures. The Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Second Edition), published at <http://www.gov.scot/Publications/2017/04/8868>, should be followed in the preparation of the EIA report, which should contain such an assessment and details of mitigation measures. Where a PLHRA is not required clear justification for not carrying out such a risk assessment is required

Comments regarding the requirement for a PLHRA are noted. A peat probe survey across the Project is currently underway. Following completion of this survey, the requirement for a PLHRA will be determined based on the conditions included within the best practice documentation. As such, at present the requirement for a PLHRA as part of this Project cannot be confirmed. Once the peat probing is completed, this chapter shall be updated and identify whether a PLHRA is considered to be required.

Where the requirement for a PLHRA is identified, a standalone document will be produced and submitted for approval by the Scottish Ministers’.

Where a PLHRA is not considered required, a summary providing justification as to why this is not required shall be provided for approval by the Scottish Ministers’.

10.4 Methodology

Scope of Assessment

- 10.4.2 The majority of the development is anticipated to have no or limited contact with or disturbance of soils, therefore the only element of the development discussed within the EIA is in relation to the construction phase of the new build overhead line. All of the Substation Works have been scoped out of the Ground Conditions Assessment. The uprating and undergrounding of existing overhead lines were also scoped out of the Ground Conditions Assessment but were included within the Desk Study report.
- 10.4.3 The potential impacts from the Project on Ground Conditions have been assessed by completing an initial desk study (Appendix 10.1: Phase 1 Geotechnical and Geo-environmental Desk Study, hereafter referred to as 'Appendix 10.1'), followed by an impact assessment. Table 10-3 summarises the scope of the assessment.

Table 10.3 Scope of Assessment

Impact	Receptors	Development Phase
Site clearance and preparation work for installation of the Project has the potential to impact the identified geological receptors, without appropriate controls or mitigation.	Geological receptors	Construction
Contamination of soils, shallow groundwater or surface waters from accidental leaks and spills, or plant breakdown. Other temporary impacts may also result from the use and storage of materials and substances (e.g. concrete, fuel, oils and soil) which have the potential to pollute (be mobilised to ground or the water environment directly or within runoff).	Soils and water environment	Construction
Impacts from existing contamination (if present) including: - Creation of new contaminant linkages (e.g. foundation construction through existing Made Ground and into underlying natural soils or shallow bedrock and/or excavation through an aquiclude and into an aquifer) - Disturbance of potentially contaminated soils and perched groundwater and creation of new pathways allowing migration of such contaminants to reach sensitive receptors (including human health, the water environment and ecological receptors) during construction	Soils, water environment, human health, ecological receptors, foundations and infrastructure	Construction

• Preferential pathways or reservoirs for hazardous gasses associated with geology and/or mining, should deeper foundation solutions be required • The potential mobilisation of any existing contamination via the exposure of soils / increases in rainwater infiltration through changes in ground cover / in excavations or bulk earthworks • Exposure by construction workers to contaminants in soil or groundwater, gases or vapours during excavations or in confined spaces • Potential exposure of buried structures (structure foundations and infrastructure) to aggressive ground conditions • Surface subsidence and damage to sections where new build lines are proposed resulting from the presence of historic coal mine workings		
Importation of potentially contaminated fill materials such as aggregates posing a potential risk to human health (construction workers) and underlying groundwater quality (although imported fill material should be screened prior to import).	Water environment and human health	Construction
Requirement to remove and reinstate soil resulting from the removal of existing foundations and other services (if present), posing a potential risk of contamination to human health and the environment.	Water environment and human health	Construction
It is anticipated that if the requirement for remediation due to contamination (if any) is carried out on potentially contaminated sites identified within a development boundary, the effects will be assessed in the context of the overall project outcomes.	Human health, water environment and property	Post-construction ⁴³
Damage / disturbance of peat and/or carbon rich soils	Peat deposits	Construction
Sterilisation or loss of mineral resource within the footprint of the Project, which are of potential	Historical quarries / pit Coal measures	Construction and operation

⁴³ Reference to post-construction phases relate to potential permanent effects that may result from any contamination being removed, remediated, or mitigated upon completion of the construction phases. This leads to removal of contaminant sources from the source-pathway-receptor linkage. However, it is not an effect related to the operation of the Project

economic value and could be extracted within the future.	Other mineral deposits (e.g. sand & gravel, limestone & ironstone)	
Potential treatment of shallow mine workings and mine entries which pose a risk of subsidence which could impact the Project.	Can have an effect on a number of other receptors (such as superficial deposits, hydrology, hydrogeology, and agricultural soils)	Construction and operation

Study Area

- 10.4.4 This section sets out the study areas adopted for the ground conditions topic, these are considered to be appropriate for the assessment of ground conditions in accordance with methodology as set out in the DMRB LA109 (2019), LA104 (2020)⁴⁴, LA110 (2019) and LA113 (2020)⁴⁵.
- 10.4.5 The study areas are presented on Figure 4.1 For ease of reporting, the features of interest are referenced to the proposed tower locations which sit within the site's red line boundary. As such, the distances discussed may be greater than 250m from the tower but are all within 250m of the red line boundary.

Geology, Soils and Mining

- 10.4.6 Impacts from the Project on geology, soils, geological sites and mining will typically occur directly within the vicinity of the Project where construction activities would take place or interface directly with these receptors. For the purposes of determining the wider geological context, geodiversity and to support the conceptual understanding of the ground model, the geology baseline will consider an extended 250m study area from the Project.

Land Contamination

- 10.4.7 For the purposes of determining the local baseline conditions with respect to land contamination, potential sources of contamination have been identified within 250m of the Project.
- 10.4.8 Potential human health, surface water and ecological receptors have been identified up to 250m from the Project. This is appropriate to assess any impact that potential land contamination might have on these receptors.
- 10.4.9 For hydrogeological receptors, the study area will be extended to 1km from the Project. This is appropriate to assess the hydrogeological setting, and any impact that potential land contamination might have on the Project or local receptors (taking into consideration the pathways for contaminant migration).

Approach to Assessment

- 10.4.10 The objective of this assessment is to determine the significance of the likely environmental effects on ground conditions (including geology, geologically designated sites, land contamination, impacts to peatland resources, and the risk of potential subsidence as a result of developing on areas of historic coal mining), during the construction of the Project.

⁴⁴ Design Manual for Roads and Bridges. (2020). LA104 Environmental Assessment and Monitoring.

⁴⁵ Design Manual for Roads and Bridges. (2020). LA113 Road Drainage and the Water Environment.

- 10.4.11 The approach to the assessment follows the general process outlined in Chapter 2: Approach to EIA.
- 10.4.12 The significance of environmental effect is typically a function of the sensitivity of a receptor and the magnitude of an impact. Effects can be beneficial, adverse. The sensitivity of the receptor reflects the qualities of a receptor and its ability to absorb an effect without perceptible change, the magnitude of a potential impact considers the scale of the predicted change to the baseline condition, and considers its duration.
- 10.4.13 As the peat probing survey is ongoing for the Project and complete results not yet available, this Chapter identifies what mitigation can reasonably be put in place at this stage and identifies what will be completed following completion of the probing survey. As relates to the effects of the Project on peat, the worst-case pre-mitigation effect is considered at this stage with this to be updated following completion of the probing survey and confirmation on mitigation measures.

Assessment Methodology

Phase 1 Geotechnical and Geo-environmental Report

- 10.4.14 Further desk-based research has been undertaken to provide a better understanding of the baseline conditions of the Project, presented in Appendix 10.1.
- 10.4.15 The report presented in Appendix 10.1 has been undertaken in line with the UK government guidance presented in LCRM (Environment Agency, 2025) and includes the following:
- A review of the Project's geological (including available British Geological Society ("BGS") borehole records), hydrological and hydrogeological setting, publicly available non-coal and coal mining records and geo-environmental information to build up an understanding of the Project setting and surrounding environmental sensitivity,
 - Review of aerial imagery for site layout and terrain evaluation to provide a current description of the Project's layout and setting within the local area,
 - Review of historical land uses for the Project and surroundings with a particular emphasis on identifying potential on-site and off-site contamination sources, and potential for presence of Made Ground,
 - Request and review of relevant records held by the Local Authority Environmental Health Contaminated Land Officers and SEPA along with public regulatory records provided within Groundsure Reports purchased for the Project,
 - Review of publicly available records from consultees including (but not limited to) Zetica bomb risk maps, UK Radon website, flooding information, NatureScot, Historic Environment Scotland, and National Library of Scotland to further inform the study,
 - Undertake a site walkover and describe the findings of a site reconnaissance visit,
 - Provide an initial Conceptual Site Model ("iCSM") for the prevailing ground conditions,

- Using the source-pathway-receptor model present a preliminary qualitative risk assessment (PRA) of potential land contamination risks to human health, environmental, or water environment receptors from contamination sources on or in the vicinity of the Project, via plausible pathways,
- Present a preliminary qualitative evaluation of potential geotechnical issues, and
- Where applicable, the report concludes with a series of recommendations for undertaking further investigative work. The purpose of such is to substantiate the findings of the preliminary risk assessment and thereby refine the iCSM.

10.5 EIA Assessment – Magnitude of Impact and Sensitivity / Importance of Receptor

10.5.1 Evaluation of the magnitude of impact (i.e., the deviation from the baseline condition) and the sensitivity / importance of the receptor will define the significance of the effects. As there is no specific guidance in relation to transmission infrastructure, reference will be made to DMRB LA 109 (2019)⁴⁶, LA 104 (2020), LA 110 (2019) and LA 113 (2020), which although applicable to road schemes, is considered to provide a suitable framework within which to conduct EIA for assessing geology and soils on schemes which include linear elements (including the Project). It is also a well-established and tested methodology, familiar to the statutory consultees.

10.5.2 Note that although DMRB has been used to define the magnitude of impact and sensitivity / importance of the receptors, it has been modified / adapted to be consistent with the approach to the assessment outline in Chapter 2: Approach to EIA.

Geology and Soils

10.5.3 The magnitude of impact and sensitivity of receptors, or importance, of the potentially affected geological features has been established using the criteria presented in Table 10.4 and Table 10.5, which have been modified from DMRB LA 109 (2019)⁴⁶.

Mining and Mineral Resources

10.5.4 The magnitude of impact and sensitivity of receptors, or importance, of the potentially affected geological features has been established using the criteria presented in Table 10.4 and Table 10.5, which have been modified taking cognisance of DMRB LA 109 (2019)⁴⁶ and LA 110 (2019).

Land Contamination

10.5.5 The approach to assessing the potential impacts of the Project from land contamination will use the iCSM presented in Appendix 10.1, which is consistent with LCRM (Environment Agency, 2025). SEPA and the Scottish Government have confirmed their endorsement of LCRM guidance⁴⁷. The assessment will be based on comparing the perceived risk levels at baseline (developed in the iCSM) and any perceived potential risk level changes during the construction and post-construction stages.

10.5.6 The following should be noted:

⁴⁶ Design Manual for Roads and Bridges. (2019). LA 109 Geology and Soils.

⁴⁷ SEPA website <https://www.sepa.org.uk/regulations/land/contaminated-land/technical-concepts/> [Accessed 18/05/2026]

- Reference to construction phases relate to the potential temporary adverse effects during the construction period.
- Reference to post-construction phases, relate to potential permanent effects that may result from any contamination being removed, remediated, or mitigated upon completion of the construction phases. This may lead to removal of contaminant sources from the source-pathway-receptor linkage. However, it is not an effect related to the operation of the Project.
- The potential level of risk defines the magnitude of impact classification for land contamination (see Table 10.4).
- The sensitivity / importance of the receptors to land contamination have been established using the criteria presented in Table 10.5 which has been modified from DMRB LA 109 (2019)⁴⁶ and LA 113 (2020). The groundwater sensitivity criteria have been tailored to suite Scottish designations and are also based on professional judgement.

Table 10.4. Magnitude of Impact (Change) Criteria for Ground Conditions

Magnitude of Impact (Change) ⁴⁸	Magnitude Criteria
High	Geology Loss of geological feature / designation and / or quality and integrity, severe damage to key characteristics, features, or elements.
	Soils & Peat Physical removal or permanent sealing of soil resource.
	Mineral Resource Scheme sterilises a large area of potentially valuable mineral resource
	Contamination 1) human health: significant contamination identified or significant contamination removed. Contamination levels significantly exceed background levels and relevant screening criteria (category 4 screening levels) within SP1010 ⁴⁹ with potential for significant harm to human health. Contamination heavily restricts future use of land or contamination remediated, 2) surface water: refer to magnitude of impact criteria in LA 113, see also Chapter 9: Water Environment, and 3) groundwater: refer to magnitude of impact criteria in LA 113, see also Chapter 9: Water Environment.
Medium	Geology

⁴⁸ NOTE: beneficial impacts are realised when there is a reduction in the magnitude of impact criteria (i.e. beneficial impacts from remediation (if required) reduces the risks).

⁴⁹ DEFRA. (2014). SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document.

Low	Partial loss of geological feature / designation, potentially adversely affecting the integrity, partial loss of / damage to key characteristics, features, or elements. Soils & Peat Permanent loss / reduction of one or more soil function(s) and restriction to current or approved future use (e.g., through degradation, compaction, erosion of soil resource.) Mineral Resource Scheme sterilises a moderately sized area of potentially valuable mineral resource Contamination 1) human health: Moderate contamination identified or moderate contamination removed Contaminant concentrations exceed background levels and do not exceed the limits of relevant screening criteria (category 4 screening levels) in SP1010. Significant contamination can be present. Control / remediation measures are required to reduce risks to human health / make land suitable for intended use, 2) surface water: refer to magnitude of impact criteria in LA 113, see also Chapter 9: Water Environment, and 3) groundwater: refer to magnitude of impact criteria in LA 113, see also Chapter 9: Water Environment.
	Geology Minor measurable change in geological feature / designation attributes, quality, or vulnerability, minor loss of, or alteration to, one (maybe more) key characteristics, features, or elements. Soils & Peat Temporary loss / reduction of one or more soil function(s) and restriction to current or approved future use (e.g., through degradation, compaction, erosion of soil resource.) Mineral Resource Scheme sterilises a small area of potentially valuable mineral resource Contamination 1) human health: Minor contamination identified or minor contamination removed Contaminant concentrations exceed background levels and are in line with limits of relevant screening criteria (category 4 screening levels) in SP1010. Significant contamination can be present. Control / remediation measures are required to reduce risks to human health / make land suitable for intended use, 2) surface water: refer to magnitude of impact criteria in LA 113, see also Chapter 9: Water Environment, and

Negligible	3) groundwater: refer to magnitude of impact criteria in LA 113, see also Chapter 9: Water Environment.
	Geology Very minor loss or detrimental alteration to one or more characteristics, features or elements of geological feature / designation. Overall integrity of resource not affected. Soils & Peat No discernible loss / reduction of soil function(s) that restrict current or approved future use. Mineral Resource Temporary loss of mineral resource Contamination 1) human health: contaminant concentrations substantially below levels outlined in relevant screening criteria (category 4 screening levels) in SP1010. No requirement for control measures to reduce risks to human health / make land suitable for intended use, 2) surface water, refer to magnitude of impact criteria in LA 113, see also Chapter 9: Water Environment, and 3) groundwater: refer to magnitude of impact criteria in LA 113, see also Chapter 9: Water Environment.
No change	Geology / Soils: No loss or alteration of characteristics, features or elements, no observable impact in either direction. Mineral Resource: No change to mineral resource Contamination: 1) human health: reported contaminant concentrations below background levels, 2) surface water, refer to magnitude of impact criteria in LA 113, see also Chapter 9: Water Environment, and 3) groundwater: refer to magnitude of impact criteria in LA 113, see also Chapter 9: Water Environment.

Table 10.5 Sensitivity / Importance Criteria for Ground Conditions

Sensitivity / Importance	Sensitivity / Importance Criteria
Very high	Geology and Mineral Resource - Very rare and of international importance with no potential for replacement (e.g. United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites, UNESCO Global Geoparks, Sites of Special Scientific Interest (SSSI) and Geological Conservation Review (GCR) sites where citations indicate features of international importance). - Geology meeting international designation citation criteria which is not designated as such. Soils and Peat - Receptor contains Class 1 or 2 priority peatland and soils directly support a designated site (e.g. SAC, Special Protection Areas (SPA), RAMSAR, SSSI etc.). Or soils directly supporting an EU designated site (e.g. SAC, SPA, Ramsar). Contamination <u>Human Health</u> - Very high sensitivity land use such as residential or allotments. <u>Surface Water</u> - Watercourse having a WFD classification shown in a RBMP and $Q95 \geq 1.0$ m³/s. - Site protected / designated under EC or UK legislation (SAC, SPA, SSSI, Ramsar site, salmonid water). - Species protected by EU legislation Ecology and Nature Conservation. <u>Groundwater</u> - Groundwater is classed as very high productivity aquifer. - Groundwater receptor vulnerability contains classes 5. - Good groundwater quality status. - Groundwater locally supports GWDTE. - Drinking Water Protection Areas (DWPA). - Water abstraction: >1,000 m³/day.
High	Geology and Mineral Resource - Rare and of national importance with little potential for replacement (e.g. geological SSSI, National Nature Reserves (NNR)). - Geology meeting national designation citation criteria which is not designated as such. Soils and Peat - Receptor contains Class 1 or 2 priority peatland. Or soils directly supporting a UK designated site (e.g SSSI).

Contamination

Human Health

- High sensitivity land use such as public open space.

Surface Water

- Watercourse having a WFD classification shown in a RBMP and Q95 <1.0 m3/s.
- Species protected under EU or UK legislation Ecology and Nature Conservation.

Groundwater

- Groundwater is classed as high productivity aquifer.
- Groundwater receptor vulnerability contains classes 4a and 4b.
- Good groundwater quality status.
- Groundwater supports a GWDTE.
- Water abstraction: 500-1,000 m3/day.

Medium

Geology and Mineral Resource

- Of regional importance with limited potential for replacement (e.g. Regionally Important Geodiversity Sites (RIGS)).
- Geology meeting regional designation criteria which is not designated as such.

Soils and Peat

- Receptor contains Class 3 or 5 peatland areas, or other areas identified as being carbon rich or peaty soils from sources outwith the 2016 Carbon and Peatland Map. Or soils supporting non-statutory designated sites (e.g. Local Nature Reserves (LNR), Local Geological Sites (LGSs), Sites of Nature Conservation Importance (SNCIs)).

Contamination

Human Health

- Medium sensitivity land use such as commercial or industrial.

Surface Water

- Watercourses not having a WFD classification shown in a RBMP and Q95 >0.001 m3/s.

Groundwater

- Groundwater is classed as moderate / low productivity aquifer.
- Groundwater receptor vulnerability contains classes 2 and 3.
- Variable groundwater quality.
- Water abstraction: 50-499 m3/day.

Low

Geology and Mineral Resource

- Of local importance / interest with potential for replacement (e.g. non-designated geological exposures, former quarries / mining sites).

Soils and Peat

- Receptor contains Class 4 soils with areas unlikely to be associated with peat or carbon rich soils. Unlikely to include carbon-rich soils. Or soils supporting non-designated notable or priority habitats.

Contamination

Human health

- Low sensitivity land use such as highways and rail.

Surface water

- Watercourses not having a WFD classification shown in a RBMP and Q95 ≤ 0.001 m3/s.

Groundwater

- Very low productivity aquifer and vulnerability classes 0 and 1.
- Poor groundwater quality.
- Water abstraction: < 50 m3/day.

Negligible

Geology

- No geological exposures, little / no local interest.

Soils & Peat:

- Previously developed land formerly in 'hard uses'. Receptor contains no peat.

Contamination

Human health

- Undeveloped surplus land / no sensitive land use proposed.

Surface water

- Not provided in LA 113 (lowest sensitivity / importance is 'low').

Groundwater

- Not provided in LA 113 (lowest sensitivity / importance is 'low').

EIA Assessment – Significance of Effects

- 10.5.7 A level of significance has been assigned to both potential effects (pre-mitigation) and residual effects (post-mitigation). The combination of the sensitivity of the receptor and the magnitude of change from the baseline condition as a result of the Project, assess the significance of the effect. Table 10.6 presents the matrix for defining the significant of effect.
- 10.5.8 Effects have the potential to be adverse, beneficial or negligible. For example, in terms of beneficial effects, the Project may remove a source of contamination or it may close a pathway that currently links a source to a receptor.
- 10.5.9 Effects also have the potential to be temporary – short (weeks / months), medium (several months to a year) or long (several years) term – or permanent (non-reversible), and can occur at local (on-site or in proximity to the Site) or district (within the wider North / South Lanarkshire Council area) level.

10.5.10 With regards to the residual effect significance, the level of significance takes into account the sensitivity of the receptor and the magnitude of the change, and also the mitigation measures applied to reduce the likelihood of significant effects to receptors. Mitigation measures implemented have the potential to alter the magnitude of impact through changing the source-receptor-pathway interaction, e.g. construction workers utilising appropriate Personal Protective Equipment (PPE) during the construction phase. The significance of effects has been determined using the matrix presented in Table 10.6. The assessment has considered the magnitude of impacts and the sensitivity / importance of the resources / receptors that are likely to be affected in order to classify the effect. Mitigation measures will be considered in this context to evaluate their influence on the residual significance of effects. After applying the matrix to determine the effect, professional judgement will be used to assess the residual significance, taking into account any mitigation implemented. Table 10.6 is consistent with the terminology and criteria outlined within Chapter 2: Approach to EIA.

Table 10.6 Assessment of Significance Matrix

Magnitude of Change	Sensitivity				
	Very High	High	Medium	Low	Negligible
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible / None
Negligible	Minor	Minor	Negligible	Negligible	Negligible / None
No change	None	None	None	None	None

10.5.11 For the purpose of this EIA, effects predicted to be ‘Minor’, ‘Negligible’ or ‘None’ are generally considered to be ‘Not Significant’. Effects assessed as either ‘Moderate’ or ‘Major’ (shaded grey in Table 10.6) are generally considered to be ‘Significant’.

10.5.12 The significance of the effects arising from the Project will generally be reported as:

- Major Adverse or Major Beneficial,
- Moderate Adverse or Moderate Beneficial,
- Minor Adverse or Minor Beneficial,
- Negligible, or
- None (no effects).

10.6 Assumptions and Limitations

10.6.1 This chapter should be read in conjunction with the Biodiversity and Water Environment (Chapters 8 and 9 respectively).

10.6.2 This chapter should be read in light of the legislation, statutory requirements and / or industry good practice applicable at the time of the assessment being undertaken. Any

- subsequent changes in this legislation, guidance or design may necessitate the findings to be reassessed in consideration of these circumstances.
- 10.6.3 It is assumed that the design, construction, and completed stages of the Project will satisfy minimum environmental standards, consistent with the contemporary legislation, practice, and knowledge applicable at the time of the assessment. Any subsequent changes in this legislation, guidance or design may necessitate the findings to be reassessed in the light of these circumstances.
- 10.6.4 The assessment assumes that during the construction phases, excavation / earthworks / cutting may be required anywhere within the Project boundary (worst-case situation).
- 10.6.5 The assessment is based on the collation and evaluation of readily available documentation provided by Groundsure (presented in Appendix 10.1), SEPA, the BGS, and other data sources made available.
- 10.6.6 A site walkover visit was undertaken along the route of the Project. Appendix 10.1 describes the features observed at the time of the survey. The site walkover was designed to identify any higher risk, potentially contaminative features along the route. The walkover allowed an assessment of the residual significance, taking into account any mitigation implemented.
- 10.6.7 The identified potential contamination sources depend on the accuracy of available historical mapping. The assessment of past quarrying activities is based on information from OS maps. It is possible that quarrying could have occurred, and the voids backfilled between the recorded years of available mapping.
- 10.6.8 Large scale ground disturbance is not expected based on the proposed design details. However, unforeseen and unforeseeable ground conditions and potentially contaminated materials or groundwater may be encountered within localised areas across the Project.
- 10.6.9 Large scale ground disturbance is not expected based on the proposed design details.
- 10.6.10 As the peat probing survey is currently ongoing and as such confirmation of all peat mitigation measures cannot be made, the effects on peat are generally assessed pre-mitigation. This Chapter will be updated on completion of the probing survey along with confirmation on the specific mitigation which will be employed as part of the Project as relates to this aspect. It is anticipated that following review of the probing results and the inclusion of further specific mitigation relating to the peat depth and extent identified, the updated chapter would reduce the overall effects on the peat.

10.7 Assessment of Effects, Mitigation and Residual Effects of the New-build Overhead Line (WB Route)

Introduction

- 10.7.2 A desk-based review has been undertaken and is presented in Appendix 10.1. The baseline data in Appendix 10.1 has been prepared using a combination of published records (e.g. BGS, SEPA), and other sources listed in Paragraph 10.4.15 .

- 10.7.3 These include statutory records and historical mapping supplied within a Groundsure Enviro+Geo Insight Reports, published geological, hydrogeological and soils / peat mapping, historical borehole records, records from the Mining Remediation Authority, correspondence with the Environmental Health Officer for North Lanarkshire Council, Falkirk Council and SEPA, and observations made during a site reconnaissance.
- 10.7.4 A summary of key baseline information for the geology, soils and mining assessment is summarised from Appendix 10.1 and is presented below. For full details Appendix 10.1 should be referred to.
- 10.7.5 For ease of reference, the following assessment cites specific tower locations using the designations “WB” as shown on Figure 4.2 (Sheets 1 to 22).

Baseline and Future Baseline Conditions

Geology

Artificial Ground

- 10.7.6 Published geological mapping records the following areas of Artificial Ground on and surrounding the Project:
- Areas to the north and west of WB059 and WB058. Larger area to the east of WB059, WB058 and WB057 (north of the A803),
 - An area east of WB052 (south of the Forth and Clyde Canal),
 - Areas around the Glasgow to Edinburgh Railway via Falkirk railway line, west of WB050 and on-site of WB051 (extending mostly to the west of this location),
 - Areas potentially on-site at WB047 and WB048, mapped immediately north of WB047 and west of WB048. Also an area to the east of these locations,
 - An area to the north of WB043, to the west of Beam Road,
 - Potentially on-site at WB038, to the immediate north of this location,
 - An area to the east of WB029, south of Arns Road,
 - Areas south of WB007 and WB008 within Cameron Glen, to the east of Old Biggar Road, and
 - Areas south of the Brackenhurst Plantation between WB001 and WB002, and potentially on-site at WB001, to the immediate east and south of this location.
- 10.7.7 Although no other Made Ground deposits are shown on published BGS mapping along the Project and within 250m of the red line boundary, localised Made Ground from the construction of roads, access tracks, railway lines, quarries/tips (and other current and historical developments / infrastructure) are likely to be present.

Superficial Deposits

- 10.7.8 The BGS GeoIndex 1:50,000 scale mapping indicates that the superficial deposits along the Project and within the 250m of the study area are dominated by Glacial Till. This material is typically a diamicton, comprising highly variable proportions of clay, silt, sand, gravel, cobbles and boulders of varying shapes and sizes. Superficial deposits shown on Figure 10.1.

- 10.7.9 The BGS record the largest areas of peat from just northeast of WB023 to immediately southwest of WB028, across Fannyside Muir. Smaller, localised, areas of peat are recorded in the following locations:
- At WB005 to WB006, north of Riggend
 - North of WB010 and adjacent to the access track southeast of this, southwest of Boglea Farm
 - Beneath WB022, east of Cumbernauld Substation
 - Various areas from WB030 to WB035, between Crowbank and Tippet Craigs
 - AT WB038, west of Cadgersloan
 - Around WB041 and WB042, north of Cadgersloan
- 10.7.10 Information on peat identified from other sources is discussed in the Soils / Peat sections (10.7.37 and 10.7.38).
- 10.7.11 Raised Marine deposits are encountered within the northernmost portion of the new build overhead line, mapped to the north of WB052 around Bonnybridge Substation. These deposits are recorded as comprising clay, silt, sand and gravel.
- 10.7.12 Hummocky (Moundy) Glacial Deposits, comprising diamicton, sand and gravel are locally mapped to the south of WB044 and WB045, beneath the new-build overhead line between WB015 and WB017, extending to the east and west, and between WB037 and WB038, extending west. Other localised areas are encountered to the immediate south of WB004 and WB042, to the east between WB047 and WB048, and to the west between WB048 and WB049.
- 10.7.13 Alluvium is locally present across the Project directly beneath the overhead line adjacent to WB007 and between WB010 and WB015. Within the study area, alluvium is recorded to the west of WB051, along the route of Rowan Tree Burn, and within the vicinity of WB056-WB059 along the River Carron and its tributaries. Within 250m of the Project, alluvium is present along the Skipperton Burn to the west of WB037 and to the east of WB015. Alluvium is recorded to consist of unconsolidated clay, silt, sand and gravel.
- 10.7.14 Glaciofluvial Ice Contact Deposits are present locally to the east of towers WB057 – WB059, comprising Devensian-Clay, silt, sand and gravel.

Bedrock Geology

- 10.7.15 The BGS GeoIndex 1:50,000 scale mapping indicates the bedrock geology across the Project. Bedrock formations are shown in Figure 10.2.
- 10.7.16 The Passage Formation (Clackmannan Group type), described as ‘fine- to coarse-grained sandstones (with some conglomerates) and structureless clayrocks (including some high-alumina seatclay, fireclay and bauxitic clay)’, is encountered beneath the majority of the WB route, from approximately Hulks Road in the South to Bonnybridge Substation in the north.
- 10.7.17 The Upper Limestone Formation (Clackmannan Group) described as ‘cyclic: includes marine limestones’ is encountered beneath WB021B and WB021C.

- 10.7.18 The Central Scotland Late Carboniferous Theoleiitic Dyke Swarm, described as ‘a quartz-microgabbro’, crosses the new-build overhead line in the vicinity of WB007, between WB029 and WB030, and WB037.
- 10.7.19 The Scottish Lower Coal Measures Formation, described as ‘sandstone, siltstone and mudstone in repeated cycles that most commonly coarsen upwards, but also fine upwards locally, with seatclay or seatearth and coal at the top. The mudstone and siltstone are usually grey to black, while the sandstone is fine- to medium-grained and off-white to grey. Coal seams are common and many exceed 0.3m in thickness’ is encountered in the following locations:
- within the northern section of the WB route: on-site and in the study area between WB037 and the northern-most extent; and only in the study area east of WB030 to WB037, and
 - within the southern section of the WB route and study area: between WB015 and the southern-most extent.
- 10.7.20 Claddens Dyke, described as ‘quartz-microgabbro’, is encountered beneath the WB route to the immediate south of WB015.
- 10.7.21 The Roman Cement Limestone is encountered beneath the WB route between WB015 and WMB017, and within the study area between WB018 and WB019.

Hydrogeology

- 10.7.22 The Project is predominantly underlain by Glacial Till, which will likely be unproductive. It is recorded to comprise sands and gravel that may store minor volumes of groundwater, but its clay matrix limits permeability. The Raised Marine Deposits have been described as a ‘low to moderate productivity’ aquifer. Alluvium deposits locally present are classed by the BGS as ‘moderate to high productivity’ aquifers. Since the site is predominantly underlain by Glacial Till, any superficial aquifers present are highly localised and discontinuous.
- 10.7.23 The BGS User Guide: Aquifer Productivity (Scotland) GIS datasets⁵⁰ indicates that there are two bedrock aquifers within the study area: Clackmannan Group and Scottish Coal Measures (see Figure 9.2).
- 10.7.24 The Scottish Coal Measures is designated as a moderately productive aquifer built of multi-layers which have been heavily mined. The aquifer is dominated with fracture flow with some minor intergranular flow.
- 10.7.25 The Clackmannan Aquifer Group is designated as a moderately productive aquifer and described as a multi-layered aquifer with low yields except where disturbed by mining. Flow is primarily through fractures and other discontinuities.
- 10.7.26 There is limited data on the groundwater quality from BGS sources. There was also no groundwater quality data received from SEPA in the Study Area. However, records indicate that the groundwater chemistry is described as often anoxic and generally moderately to highly mineralised.

⁵⁰ British Geological Survey (BGS) (2015). User Guide: Aquifer Productivity (Scotland) GIS datasets, Version 2. Revised Report.

10.7.27 According to the SEPA (2015) Water Classification Hub, the Project is underlain by the following WFD bedrock groundwater bodies (see Figure 9.4):

- The Falkirk Groundwater Body (SEPA ID: 150511) underlies the Project in the north, classified by SEPA as having a 'poor' overall status in 2024 within the Scottish Coal Measures Aquifer Group.
- The Castle Cary Groundwater Body (SEPA ID: 150560) underlies the Project in the northern and central areas, classified by SEPA as having a 'good' overall status in 2024 within the Clackmannan Aquifer Group.
- The Kirkintilloch Groundwater Body (SEPA ID: 150616) underlies the Project in the central west of the area, classified by SEPA as having a 'poor' overall status in 2024 within the Clackmannan Aquifer Group.
- The Slamannan Groundwater Body (SEPA ID: 150546) underlies the Project in the central east area, classified by SEPA as having a 'poor' overall status in 2024 within the Scottish Coal Measures Aquifer Group.
- The Glasgow and Motherwell Groundwater Body (SEPA ID: 150677) underlies the Project in the southern and central area, classified by SEPA as having a 'poor' overall status in 2024 within the Scottish Coal Measures Aquifer Group.
- The Glenboig Groundwater Body (SEPA ID: 150436) underlies the Project within the central area, classified by SEPA as having a 'good' overall status in 2024 within the Clackmannan Aquifer Group.
- The Denny Groundwater Body (SEPA ID: 150514) underlies the Project within the northern area, classified by SEPA as having a 'poor' overall status in 2024 within the Scotland River Basin District.
- The Stepps Groundwater Body (SEPA ID: 150423) underlies the Project within the eastern area, classified by SEPA as having a 'good' overall status in 2024 within the Scotland River Basin District.
- The Carron Sand and Gravel Groundwater Body (SEPA ID: 150774) underlies the Project within the northern area, classified by SEPA as having 'good' overall status in 2024 within the Scotland River Basin District.
- The Whitburn Groundwater Body (SEPA ID: 150509) underlies the Project within the southern area, classified by SEPA as having 'good' overall status in 2024 within the Scotland River Basin District.

10.7.28 According to the SEPA (2015) Water Classification Hub, the Project is underlain by the following WFD superficial groundwater bodies:

- The Carron Sand and Gravel Groundwater Body (SEPA ID: 150774) underlies the Project in the north, classified by SEPA as having a 'good' overall in 2024.

10.7.29 As part of SEPA's River Basin Management Planning to protect and improve Scotland's water environment, Drinking Water Protected Areas ("DWPAs") have been established for surface waters (SEPA, 2013) and groundwaters (SEPA, 2013) across Scotland. No part of the Project is located within a DWPA for surface water. The whole of the Project and study area is within a DWPA for groundwater.

- 10.7.30 Private Water Supplies (“PWS”) information was received from North Lanarkshire Council on the 10 June 2025, and from Falkirk Council on the 08 July 2025. They confirmed that there were no PWS identified within 1km of the Project. PWS assessments have therefore been scoped out.

Hydrology

- 10.7.31 The Project runs near to and across numerous surface water courses. Significant water courses (up to 250m from the Project) and the surface water quality information (SEPA, 2024) are described in Table 10.7, listed in the approximate order at which the WB route meets them going from north to south. The locations of the surface water features are shown on Figure 9.1.

Table 10.7 Significant Water Courses and Surface Water Quality

Surface Water Feature	Distance (m) and Direction	Details
Unnamed inland watercourses	Numerous unnamed watercourses recorded on site.	Numerous unnamed inland surface and underground water courses recorded along the Project and surrounding the Project. Note: A full list of all surface water features with their descriptions, locations, associated WFD classified waterbody sub-catchment and allocated IDs is given in Appendix 9.1 Surface Water Feature Register and Appendix 9.3 Water Framework Directive Groundwater and Surface Water Bodies.
Bonny Water / Red Burn (SEPA ID 4205)	Within the north of the study area, to the north of WB059	Bonny Water/Red Burn is a river in the River Carron (Falkirk) catchment of the Scotland river basin district. The main stretch is approximately 13.9 km in length. The water body has been designated as a heavily modified water body on account of physical alterations that cannot be addressed without a significant impact on the drainage of agricultural land. It had an overall status of “moderate ecological potential” in 2024 with a water quality of “moderate”. The Rowan Tree Burn and Walton Burn, although not classified on SEPA’s Water Classification Hub, are tributaries of the Bonny Water / Red Burn and are present within the study area.
Forth and Clyde Canal (Wyndford to Rough Castle) (ID: 3)	Route crosses the watercourse to the west of Carmuir’s / the Falkirk Wheel. The watercourse is oriented approximately east to west. The Forth & Clyde Canal flows generally eastward from the River Clyde toward the Firth of Forth.	The Forth and Clyde Canal (Wyndford to Rough Castle) is a river in the River Carron (Falkirk) catchment of the Scotland river basin district. The main stretch is approximately 9.5km in length. The water body has been designated as an artificial water body on account of physical alterations that cannot be addressed without a significant impact on navigation. It had an

		overall status of “good ecological potential” in 2024 with a water quality of “high” .
Glencryan Burn (ID: 4206)	The route crosses the river in south, between WB021 and WB020. The watercourse is oriented east to west. Flow direction unknown.	The main stretch is approximately 3.2 km in length and is part of the River Carron catchment if the Scotland River basin district. The overall condition of the water is ‘moderate’ with a ‘high’ water quality.
Luggie Water (ID: 10751)	The route crosses the river in south, between WB017 and WB016. The watercourse is oriented east to west. Flow direction unknown.	Luggie Water is a river in the River Kelvin catchment of the Scotland river basin district. The main stem is approximately 11.1 km in length. The overall condition of the water is ‘moderate’ with a ‘good’ water quality. The Cameron Burn, although not classified on SEPA’s Water Classification Hub, is located upstream of Luggie Water and is present within the study area.
River Carron (Avon Burn to Bonny Water Confluences) (ID: 4201)	The route crosses the river in the north, between ZG011 and ZG010. The watercourse is orientated west to east. Flow is assumed to be west to east.	River Carron (Avon Burn to Bonny Water Confluences) is a river in the River Carron (Falkirk) catchment of the Scotland river basin district. The main stem is approximately 4.4 km in length. The over condition of the water is ‘poor’ with a ‘moderate’ water quality.

Ecological Sites

- 10.7.32 Sensitive land uses have been identified within the vicinity of the Project such as SSSI, Environmentally Sensitive Areas, World Heritage sites, Nature Reserves, National Parks, Nitrate Sensitivity Areas / Vulnerability Zones, Special Area of Conservation (SAC), Special Protection Area (SPA) and ancient woodlands.
- 10.7.33 As indicated in Paragraph 10.4.8, sensitive land uses have been identified within 250m of the Project and are listed in Table 10.8.

Table 10.8 Sensitive Land Uses within 250m of the Project

Sensitive Land Use	Number	Location	Details
SSSI	2	2 on-site	Slamannan Plateau is located within the study area between WB024 and WB025 southeastwards and eastwards from WB031 and WB036, with a documented area of 559.17ha. It is a SSSI based on the taiga bean goose population. Howierig Muir is located within the study area, approx. 150m to the east of WB047. It is a SSSI as a raised bog.
Designated Ancient Woodland	Numerous	Both on- and off-site	Numerous designated ancient woodland are identified within the site boundary. Those on-site are listed as unknown, Howierig Wood, Tor Wood, Drum Wood and CastleCary High Wood.

Those off-site are listed as unknown, Douglas Plantation, Copse Wood, Gartsherrie Wood, Oakbank Wood and Dales Wood.

SPA	1	Off-site (160m east)	Slamannan Plateau, with a documented area of 559.17ha. It is a SPA based on the taiga bean goose population.
Country Park	1	Both on- and off-site	Palacerigg Country Park, approximately 291ha.
World Heritage Sites	1	On and off-site	The Antonine Wall and/or the buffer zone is recorded along the route of the Project between WB049 and WB056.

Potential Sources of Contamination

- 10.7.34 The data gathered in Appendix 10.1 have been used to identify potential sources of contamination on and within 250m of the Project.
- 10.7.35 Based on the above, the following historical activities which represent potential sources of contamination have been identified:
- Made Ground associated the presence of or construction and demolition of the following:
 - Quarries identified on-site at WB001, WB009, WB030 and WB033 and off-site at WB001, WB006, WB008, WB009, WB015, WB021A, WB021B, WB023 and WB034
 - Orchards identified on-site at WB019
 - Collieries identified on-site at WB001, WB002, WB012 and WB013 and off-site at WB003 and WB010
 - Refuse tips identified on-site at WB013 and off-site at WB021A and WB021B
 - Open cast workings identified on-site at WB001 and WB052
 - Sand pits identified on-site at WB019 and WB057
 - Lime kilns identified on-site at WB007, WB013, WB015 and WB059 and off-site at WB001, WB008 and WB021
 - Filtering beds identified off-site at WB021B
 - Slag heaps identified on-site at WB013
 - Coal mine and shafts identified on-site at WB001, WB002, WB009, WB013, WB021, WB039, WB043, WB048, WB049 and WB052 and off-site at WB003, WB008, WB014, WB042, WB044 and WB045
 - Slag heaps identified on-site at WB013
 - Pits and ponds identified on-site at WB019, WB025, WB033, WB038, WB041, WB042, WB048, WB049, WB051 and WB052 and off-site at WB019 and WB021A
 - Engineering works identified on-site at WB039 and WB051 and off-site at WB021C and WB052

- Chemical works identified on-site at WB051 and WB052 and off-site at WB017
- Tanks identified off-site at WB043, WB050, WB052 and WB053
- Off-site sewage works identified off-site at WB058.

10.7.36 Based on the above, the following recent activities which represent potential sources of contamination have been identified:

- Tanks identified on-site at WB046 and WB047 and off-site at WB019, WB020, WB026, WB058 and WB059
- Licensed waste sites identified on-site at WB059 and off-site at WB059 and WB001
- Active or recent landfill identified off-site at WB006 and WB038
- Electrical substations and infrastructure identified on-site at WB059 and off-site at WB012, WB021A, WB021B, WB021C, WB022, WB023, WB024, WB025, WB026, WB027, WB028, WB029, WB030, WB031, WB032, WB033, WB034, WB035, WB036, WB037, WB038, WB039, WB040, WB041, WB042, WB043, WB044, WB045, WB046, WB047, WB048, WB049, WB50, WB051, WB052, WB053, WB054, WB055, WB056, WB057, WB058 and WB059 and off-site at WB046
- Opencast mine identified on-site at WB001
- Recycling centre identified off-site at WB059
- Sewage works identified off-site at WB058
- Petrol station identified off-site at WB006.

Soils/Peat

10.7.37 The 1:25,000 Soil Map of Scotland (Scottish Government, 2013)⁵¹ was used to determine the soils present across the Project. This identified mineral (non calcareous) gleys, brown earth soils, undifferentiated basin peats, peaty gleys, peaty alluvial soils, mineral alluvial soils, humus-iron podzols, restored opencast ground and areas with no soil type recorded. The non calcareous gleys are the predominant soil type. Undifferentiated basin peats were identified in the following locations:

- Southwest of Boglea Farm (in proximity to Tower WB011).
- Around Fannyside Muir (beneath towers WB021 to WB028).
- Between Crowbank and Tippet Craigs (beneath or in proximity to towers WB031 to WB035).
- Northwest and north of Cadgersloan (beneath or in proximity to towers WB038 to WB041).

10.7.38 NatureScot⁵² (formerly Scottish Natural Heritage) produced a Carbon and Peatland map in 2016 which identifies carbon rich soil, deep peat and priority peatland habitats. Based on this map, the majority of the Project falls within Class 0 (mineral soils). Figure 10.3

⁵¹ Scottish Government. (2013). Soil Map of Scotland (partial cover).

⁵² NatureScot. (2016). NatureScot Carbon and Peatland 2016 Map. (NatureScot).

shows location of Class 1 to Class 5 soils within the vicinity of the Project. There are peat soils recorded beneath the Project at the following locations:

- Class 1 (National important carbon-rich soils, deep peat and priority peatland habitat which are likely to be of high conservation value) soils are present in localised areas northwest of Riggend (in close proximity to towers WB005 and WB006), at Fannyside Muir (beneath part of tower WB023 and in close proximity to tower WB025) and north of Old Shields (beneath towers WB031 to WB034).
- Class 3 (dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat) soils are present in localised areas to the southeast of Cumbernauld Substation (beneath towers WB021A, WB021 and WB022) and northwest of Birchwood Farm (beneath tower WB042).
- Class 5 (Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat) soils are present in localised areas north of Wattston (in close proximity to tower WB011) and in a few locations between Tippet Craigs and just north of Greenrigg Farm (beneath towers WB035, WB039 and WB040). There is also a larger area present across Fannyside Muir (in close proximity to tower WB022 and beneath towers WB023 to WB028).

10.7.39 At the time of reporting peat probing is ongoing at numerous locations across the route which will further identify peat depths and extents across the proposed infrastructure associated with the Project. The probing locations being completed include the area surrounding the existing and proposed locations of steel towers, and associated temporary access tracks and areas of temporary works within areas where peat is recorded to be present from the desk-based sources and site walkovers completed. The Outline PMPs completed for the Project provide figures showing where probing is being completed along with areas of potential peat deposits as identified from desk-based sources.

Mining and Quarrying

10.7.40 Figure 10.4 shows the location of Mining Remediation Authority features in the vicinity of the Project. The whole length of the Project is within a Mining Remediation Authority Coal Mining Reporting Area. Large portions of the Project lie within development high risk areas and / or have development high risk areas within the immediate vicinity.

10.7.41 Significant numbers of mine entries are recorded by the Mining Remediation Authority within and in the immediate vicinity the Project. These are recorded north/northeast of Wattston (in close proximity to the WB-B05 access track and to the Project at tower WB012), east of Boglea Farm (in proximity to tower WB013), southeast of the Cumbernauld Substation (in proximity to the Project around tower WB021) and between Rowanview and Carmuir (in proximity to the Project between towers WB047 and WB052). The mine entries recorded include both adits (inclined mine entries) and shafts (vertical mine entries). There is also potential for additional unrecorded mine entries to be present throughout the Project.

10.7.42 Former Mining Remediation Authority surface coal mining areas (i.e. opencast) are present within and in the immediate vicinity of the Project to the north and east of Wattston (in

proximity to the Project between towers WB007 and WB011) and to the east and north Rowanview (in proximity to the Project between towers WB047 and WB051).

- 10.7.43 Former Mining Remediation Authority recorded and probable shallow (<30m bgl) underground coal mine workings and associated sub-crops are present within and in the immediate vicinity of the Project throughout much of the route to the south of Riggend (including beneath towers WB001 to WB003). They are also present around Wattston (beneath the WB-B05 access track) and between Cameron Glen to just west of Wester Glentore Farm (including beneath towers WB011 to WB014), southeast of Cumbernauld Substation (south of tower WB019, in close proximity to tower WB021 and beneath towers WB021A and WB022) and from just west of Cadgersloan to just south of the Forth and Clyde Canal (including beneath towers WB038 to WB052).
- 10.7.44 The Groundsure Report obtained for the Project (included as Appendix B of Appendix 10.1) shows former recorded non-coal underground mining of minerals such as ironstone and fireclay is present in the immediate vicinity of the Project to the south of Riggend (including beneath towers WB001 to WB003) and to the northeast of Rowantree (including beneath towers WB048, WB049 and WB051).
- 10.7.45 The BGS and Groundsure Report obtained for the Project (included as Appendix B of Appendix 10.1) indicate that numerous mines and quarries are present in the vicinity of the Project. Most of these entries appear to be related to the extraction of coal and so predominantly relate to the coal mine entries or opencast mines recorded by the Mining Remediation Authority already discussed. However, many also appear to be related to the extraction of sandstone, ironstone, fireclay, ganister, sand, gravel, clay and shale indicating potential for additional non-coal mine workings. All of the mines and quarries recorded by the BGS are noted to have ceased operations.

Summary of Sensitive Receptors

- 10.7.46 The assessment considers the resources / receptors in Table 10.9. With regards to the Water Environment, Chapter 8 Biodiversity discusses what effects habitat change may have on Groundwater Dependent Terrestrial Ecosystems (GWDTE) and Chapter 9 Water Environment concludes that there would be no significant effects on potential GWDTEs following the implementation of embedded mitigation. Therefore, GWDTEs are not discussed further in this chapter.

Table 10.9 Sensitive Resources / Receptors

Aspect / Criteria	Resource / Receptor	Location	Resource Sensitivity / Importance	Justification
Bedrock Geology	Passage Formation (Clackmannan Group)	Across the majority of the Project (between WB059 – WB052, WB044 – WB015 (excluding igneous intrusions mentioned below) and WB005)	Low	Non-designated geological exposures
	Upper Limestone Formation	Beneath WB021B and WB021C	Low	

	(Clackmannan Group)			
	Central Scotland Late Carboniferous Tholeiitic Dyke Swarm	Encountered at various locations beneath the Project (WB007, between WB029 and WB030, WB037)	Low	
	North Britain Palaeogene Dyke Suite (Claddens Dyke)	Encountered around WB0015	Low	
	Scottish Lower Coal Measures Formation	Most northern and southern areas (between WB001 – WB004, WB006, WB0014, and between WB044 and WB052)	Low	
Soils	Glacial Till and Hummocky (Moundy) Glacial Deposits	Across the Project	Low	Soils supporting non-designated notable or priority habitats
	Raised Marine Deposits	Northernmost section of the Project	Low	
	Alluvium	Locally recorded in the vicinity of Luggie Water and Skipperton Burn, and in the north near Bonnybridge Substation	Low	
	Glaciofluvial Ice Contact Deposits	To the east of Bonnybridge Substation	Low	
	Class 1 Peat	Localised areas are mapped northwest of Riggend and between Cumbernauld Substation and Fannyside Muir, with a larger area present north of Old Shields, as identified on Figure 10.3.	High	Class 1 peat, however, not supporting a designated site
	Class 3 & 5 peatland, BGS recorded areas of peat, organic soils with dystrophic blanket peat and peaty gleys with	Mapped locally throughout the Project	Medium	Non-nationally important peat has been identified which does not support a designated site

Water Environment – aquifer designation and groundwater bodies	dystrophic blanket peat (outwith those corresponding to Class 1)			
	Bedrock aquifer of the Clackmannan Group (Passage Formation and Upper Limestone Formation)	Across the majority of the Project	Medium	Moderately productive aquifer
	Bedrock aquifer (Scottish Coal Measures)	The north and southern ends of the Project	Medium	Moderately productive aquifer
	Shallow aquifer within the alluvial and glaciofluvial deposits	Locally around Luggie Water and Skipperton Burn, and to the north of the Project	High	Moderate to high productivity aquifer
	Shallow aquifer within the raised marine deposits	To the north of the Project	Medium	Low to moderate productivity aquifer
	Falkirk Groundwater Body (SEPA ID: 150511)	Within the north of the Project	Low	‘Poor’ overall water quality status
	Carron Sand and Gravel (SEPA ID: 150774)	Within the north of the Project	High	‘Good’ overall water quality status
	Castle Cary Groundwater Body (SEPA ID: 150560)	Within the northern and central areas of the Project	High	‘Good’ overall water quality status
	Kirkintilloch Groundwater Body (SEPA ID: 150616)	Within the central west of the Project	Low	‘Poor’ overall water quality status
	Slamannan Groundwater	Within the central east of the Project	Low	‘Poor’ overall water quality status

Water Environment – Surface Water Courses	Body (SEPA ID: 150546)			
	Glenboig (SEPA ID: 150436)	Within the central east of the Project	High	'Good' overall water quality status
	Glasgow and Motherwell Groundwater Body (SEPA ID: 150677)	Within the south and central area of the Project	Low	'Poor' overall water quality status
	Denny (SEPA ID: 150514)	Within the north of the Project	Low	'Poor' overall water quality status
	Whitburn (SEPA ID: 150509)	Within the south of the Project	High	'Good' overall water quality status
	Stepps (SEPA ID: 150423)	Within the central east of the Project	High	'Good' overall water quality status
	Forth and Clyde Canal (Wyndford to Rough Castle) (SEPA ID: 3)	North of the Project	High	See Chapter 9: Water Environment
	Glencryan Burn (SEPA ID: 4206)	In the south of the Project	High	
	Luggie Water (SEPA ID: 10751)	In the center of the Project	High	
	Bonny Water / Red Burn (SEPA ID: 4205)	In the north of the Project	High	
Human Health	River Carron (SEPA ID: 4201)	In the north of the Project	High	
	Luggie Water (SEPA ID: 10751)	In the east of the Project	High	
	Current site visitors and public and private land users, potential right to roam land	Across the Project and study area	High	As detailed in Table 10.5, the sensitivity criteria for human health are categorised as follows:

	users and trespassers			• Very High Sensitivity: Residential areas and allotments • High Sensitivity: Public open spaces • Medium Sensitivity: Commercial or industrial land
	Future site visitors and public and private land users, potential right to roam land users and trespassers	Across the Project and study area	High	
	Adjacent site users (residential houses)	Housing present sporadically, within 250 m from the Project, mostly in the south	Very High	
	Adjacent site users (commercial users)	Sporadic	Medium	
Ecological Sites	Slamannan Plateau SAC	160m east of the Project	High	Scoped out as considered to be too distant from the Project to be impacted by land contamination
Mineral Resources	Coal and other mineral resources	There are areas with coal and other mineral resources, as well as historical quarries and pits, within and in the immediate vicinity of the Project through much of its extent.	Low	The mineral resources present are of local with potential for regional importance, however, given the scale of the Project there is potential for a replacement within the immediate vicinity.

Future Baseline

- 10.7.47 The future baseline will likely remain the same unless future new developments cross potential contamination sources (if present). If this occurs, there may be a requirement for remediation in these areas.
- 10.7.48 Effects from climate change will lead to more rain, rising groundwater levels, more leaching of contaminants from soil and potentially land instability as a result of wetter conditions.

Embedded Mitigation Measures

- 10.7.49 The Project has been designed, as far as possible, to avoid or minimise impacts and effects on geology, soils and mining through the process of design development, and by embedding mitigation measures into the design of the Project.

- 10.7.50 Mitigation for the Project will follow the hierarchy of risk mitigation, with the avoidance of significant risks undertaken where possible as the first course of action. Where risks cannot be avoided further engineering measures will be explored.
- 10.7.51 The following embedded mitigation measures are assumed to have been incorporated into the design of the Project for the purposes of the assessment.

Ground Investigation

- 10.7.52 Ground investigation (geo-environmental and geotechnical) will be undertaken before construction to inform the development of the detailed design. The geo-environmental ground investigation will validate the assumptions made in the iCSM and Preliminary Risk Assessment (“PRA”) (Appendix 10.1) and provide site-specific data upon which to base a generic quantitative risk assessment (Stage 1, Tier 2 under LCRM (Environment Agency, 2025)).
- 10.7.53 The ground investigation would be undertaken in accordance with the UK Specification for Ground Investigation (2022), and carried out in accordance with Eurocode 726 (BS EN 1997-2:2007), BS 5930:2015+A1:202027) and BS 10175:2011+A2:201729).
- 10.7.54 Peat probing is already underway at the time of reporting which will allow for an initial understanding of peat depth variation and extent across working areas of the Project. Given peat probing does not recover samples of peat, the probing results only provide an estimation of the peat extent and depth. In order to prove the peat depth and extent and also allow an understanding of the nature of the peat, intrusive ground investigation (e.g. trial pitting, boreholes, etc.) should be undertaken on a targeted basis where peat has been identified across the Project. Where infrastructure is micro-sited and moved away from completed probing, further peat probing should be completed to characterise the peat depth across the micro-sited location.
- 10.7.55 Targeted Ground Investigation may also be required to investigate the risk to construction from legacy underground mine workings and mine entries. Where the Project is planned over recorded or potentially unrecorded underground and opencast mines, mine entries, or mineral quarries, targeted ground investigation may be required to ensure that the construction methods proposed at these locations are appropriate for the ground conditions.
- 10.7.56 The ground investigation will be designed to target the potentially contaminative sources identified within the Project boundary, including the following:
- Made Ground (associated with construction and demolition of former and current railways and roads, and unspecified/refuse heaps and pits)
 - infilled land (associated with disused and abandoned quarries and pits),
 - current and historical railways (on-site),
 - mining activities including former collieries and associated shafts / entries,
 - electricity production and distribution centre within the Project, and
 - former industrial activities within the study area of the Project.

- 10.7.57 Where the preliminary conceptual site model indicates potentially unacceptable risks, targeted ground investigation and, if required, detailed quantitative risk assessment may be undertaken to refine the evaluation and inform proportionate remediation or design measures. The initial assessment is based on published geological and hydrogeological mapping, historical land-use records, regulatory datasets, and site reconnaissance to characterise likely ground conditions and plausible contaminant linkages. Conservative risk-based assumptions are applied and embedded control measures are included that form part of the Project. This approach allows identification of the potential for likely significant effects and to define where further investigation or mitigation may be required. Findings from subsequent ground investigation will feed into the detailed design of tower foundations and earthworks to implement any additional, location-specific measures (e.g. localised remediation or design refinements).
- 10.7.58 The assessment of structural and engineering geology will be undertaken as part of a GIR and Geotechnical Design Report which will include further details regarding geotechnical considerations / ground stability, and how the Project design will mitigate any effects.
- 10.7.59 Based on the nature of the Project (no buildings or enclosed occupied structures), the requirement for long-term ground or mine gas monitoring is not anticipated to be required. However, this will be confirmed through the ground investigation and verification process. Given the potential presence of Made Ground and Coal Measures (including historic workings and shafts) within the Project boundary, it is considered that during ground investigation and construction works, personnel entering excavations or confined spaces should use personal gas alarms, as ground/mine gas could be displaced during construction and accumulate in confined spaces. A site-specific risk assessment will define the need for alarms and any supplementary controls.
- 10.7.60 A Verification Report and the scope of any Remediation Strategy (if required) will be agreed with the Local Authority and the Verification Report sent to the Local Authority for approval.

Soils / Peat

- 10.7.61 The Project has been designed to avoid areas of recorded peat, although these are acknowledged to still be present within the Project. During the detailed design phase, prior to construction, careful micro-siting of the final steel tower locations and temporary infrastructure (e.g. access tracks, laydown areas, construction compounds, etc.) would be undertaken to avoid areas of recorded peat where feasible, particularly avoiding areas of Class 1 peat land.
- 10.7.62 Where peat cannot be completely avoided, areas of deep peat (>1.0m) as identified through ground investigation (inclusive of peat probing) would be avoided. Where deep peat is unavoidable due to other constraints, methods to reduce disturbance or damage of the peat are to be employed. This would include consideration of using deep foundation solutions (e.g. piles) through the peat, although it should be noted that the minimum depth of the conventional shallow foundations is proposed at 1.0m bgl and as such deep foundation may only be considered if peat or unsuitable soils are present below this depth.

- 10.7.63 For extra vigilance the Class 1 Nationally Important peatlands and areas of deep peat not underlying the proposed permanent works or associated temporary infrastructure is to be demarked onsite and the working areas during construction controlled to minimise the chances of these areas being disturbed.
- 10.7.64 As part of the Project any excavated peat would be proposed to be temporarily stored and either reused or reinstated within the Project. At present it is anticipated all excess peat generated as part of the Project will be reused/reinstated within the Project itself with this to be confirmed following completion of the peat probing survey, with both this Chapter and the associated Outline PMPs updated and resubmitted to confirm the proposed details of the peat reuse. Where peat cannot be reused within the Project this will be clearly identified as part of the updated Chapter and Outline PMPs with details provided as to what is expected of the peat generated which cannot be reused.

Mining / Quarrying

- 10.7.65 During the design of the Project areas of mining and quarrying have been identified and taken into consideration within the outline alignment process. This includes Mining Remediation Authority Development High Risk Areas, mine entries and quarries / pits. The identified areas of mining risk / potential for mineral resource sterilisation were avoided, wherever possible, during the outline alignment process of the Project.
- 10.7.66 As parts of the Project are located within Mining Remediation Authority Development High Risk Areas, or other areas where mining risk has been identified within the Phase 1 Geotechnical and Geo-Environmental report (Appendix 10.1), there is a potential risk of the development being affected by subsidence. As a result of this, a Mining Risk Assessment will be undertaken for the sections of the Project where the Development High Risk and other areas of mining risk have been identified. This would require obtaining a detailed Consultant's Coal Mining Report from the Mining Remediation Authority, along with other supplementary information such as mine entry data sheets and mine plans. The undertaking of the Mining Risk Assessment would allow an understanding of where legacy mining represents a constraint, allow agreement with the Applicant on a risk management approach, identify any areas where ground investigation would be recommended to inform the detailed design and allow identification on any mitigation measure to be imposed on the design and construction.
- 10.7.67 As the Project is within close proximity to Network Rail Assets within areas of identified mining risk, within those relevant sections Network Rail mining reports may be required, along with the preparation of a separate Mining Risk Assessment, to satisfy Network Rails requirements.
- 10.7.68 Mining Risk Assessments would be produced as part of the detailed design process, the siting of the towers, and any other pre-construction works. As part of the Mining Risk Assessments, it will be anticipated that further investigation and treatment of shallow underground workings would only be required where permanent structures are proposed, and micro-siting to avoid areas of mining risk is not possible. This is anticipated to be at steel tower locations. Where temporary works are proposed, including access tracks, laydown areas and construction compounds, it would be anticipated that further investigation and treatment of shallow underground workings would generally not be required due to the type of infrastructure being proposed. In these locations a reactive

approach, where if subsidence occurred any maintenance or remediation would then be undertaken, would be agreed by the Applicant and any relevant parties (e.g., local Council, Mining Remediation Authority, etc.).

- 10.7.69 As part of the design development of the final alignment and associated temporary infrastructure (e.g., access tracks, laydown areas, construction compounds), careful design to avoid areas where mine entries and their associated exclusion zones (to be confirmed as part of Mining Risk Assessments undertaken) may be present would be required. Similarly, areas of shallow mine working and former quarries will be avoided wherever possible. Where mine entries are avoided as part of the Project, however, are still present within the immediate vicinity, the mine entry exclusion zone will be demarked onsite and the working areas during construction controlled to minimise the chances of these areas being disturbed.
- 10.7.70 Note that as the presence of unrecorded mine entries or shallow mine workings cannot be discounted and will only have limited discussion and mitigations within the Mining Risk Assessments undertaken, the micrositing of steel towers, temporary access tracks, laydown areas and construction compounds may be required during construction if these unrecorded features are encountered.

Control Mitigation Measures

- 10.7.71 For the purposes of the initial assessment, it is assumed that the Project includes control mitigation measures that are embedded in the design and represent standard industry good practice and regulatory compliance.

Construction Environmental Management Plan (CEMP)

- 10.7.72 The main mitigation measure to prevent adverse effects on geology, soils and mining during all phases of the development will be to ensure good site practice and management throughout the development and adherence to a CEMP. Measures contained within the CEMP will limit the potential for dispersal and accidental releases of potential contaminants, soil derived dusts and uncontrolled run-off to occur during construction. For example, the CEMP will set out how material is to be excavated, segregated, and stockpiled to minimise the potential for run-off, soil quality degradation and wind dispersal of dusts. The CEMP will also establish procedures for dealing with unexpected soil or groundwater contamination that may be encountered. A CEMP has been prepared for the project, the details of which are as follows:

- SP Energy Networks, 2025. Construction Environment Management Plan, DWNO – Denny Wishaw 400kV Reinforcement. Document Number: DWNO-MORG-XE- ZZZZZZZ-EP-KE-0001, Revision P01, Date 23rd April 2025.

Dealing with Potential Contamination during Construction

- 10.7.73 Potential impacts specific to construction workers during site preparation and construction works would be controlled and mitigated by the following measures and through working in accordance with CIRIA C811⁵³:

- measures to minimise dust generation,

⁵³ CIRIA. (2023) CIRIA C811, Environmental good practice on site guide (fifth edition).

- provision of Personal Protective Equipment (“PPE”), such as gloves, barrier cream, overalls etc. to minimise direct contact with soils,
- provision of adequate hygiene facilities and clean welfare facilities for all construction site workers,
- monitoring of confined spaces for potential ground gas accumulations, restricting access to confined spaces, i.e., to suitably trained personnel only, and use of specialist PPE, where necessary, and
- preparation and adoption of a site and task specific health and safety plan as is required under Health and Safety legislation.

10.7.74 The 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 a suitably qualified environmental consultant to be notified, and further characterisation and risk assessment to be undertaken before remediation or mitigation proposals are agreed with all stakeholders.

10.7.75 If unacceptable risks are identified or encountered during construction, and routing through these areas is unavoidable, specific mitigation measures may be required in the form of treating / remediating contamination (e.g., contamination that may be associated with potentially contaminative sites identified as part of 2025 Desk Study provided in Appendix 10.1). This will be confirmed based on information gathered through ground investigation. Any remediation works, or the removal of contaminated soils or waters associated with the construction of the Project would be expected to result in the enhancement of the local environment. Any such need will be defined by the ground investigations and interpretive assessments that follow.

10.7.76 With specific reference to the Kilgarth and Dalmacoulter landfills, it is understood that proposed works do not encroach into these areas, and where access tracks cross the former refuse tip identified on 1962 OS mapping near towers WB001, XX019B and XX019A, all access will comprise surface laid plastic trackway with no soil stripping or planned ground disturbance. Following SEPA’s response on 22nd January 2026, should ground disturbance be anticipated where it previously was not or if any made ground or landfill-type materials are encountered during works, specialist geo-environmental / geotechnical consultant advice will be sought prior to commencing works.

Excavated Materials and Waste Management

10.7.77 Prior to construction, a strategy will be prepared as part of the design development, which will set out how the earthworks stage of the construction phase will be undertaken. Where necessary the strategy will consider what excavated materials can be reused or are required for the various components of the Project, and what materials are surplus and require either off site disposal to a suitably licensed facility or onward management to ensure appropriate re-use (with reference to SEPA’s (2024) Land Remediation and Waste Management Guidelines36).

10.7.78 Soil resources would be protected and conserved where possible through adherence to best practice guidance such as DEFRA 2009 ‘Construction Code of Practice for the Sustainable Use of Soils on Construction Sites’.

- 10.7.79 To minimise the effects on soil resources during any earthworks, including materials management following foundation construction in relation to the Project, high standards of soil handling and management will be employed with a view to minimise, where possible, the double handling of soils and the extent to which exposed soils will be left vulnerable to erosional processes.
- 10.7.80 Stockpiling of contaminated soil materials should be avoided where practicable. Soils are to be placed within suitable constructed bunded areas and covered to prevent migration of contaminants via rainwater run-off and leaching.
- 10.7.81 The disposal of soil waste, contaminated or otherwise, to landfill sites would be mitigated by minimisation of the overall quantities of waste generated during construction, and by considering whether that excavated material consigned to landfill, as an alternative, could be re-used either on the Project or on other development sites.
- 10.7.82 Surplus soil for which no use can be found on site must be removed from site. Either it can be disposed of to a licensed landfill or potentially re-used on another site under a waste management license exemption waste treatment license, however Special wastes (i.e., soils classified as hazardous for the purpose of disposal) are not suitable for exempted uses – a detailed waste classification assessment is recommended to identify which soils requiring excavation are classified as hazardous and non-hazardous so that off-site disposal and/or re-use of soils can be appropriately planned and managed.
- 10.7.83 There is potential for asbestos to be present in any Made Ground within the Project boundary. Any Made Ground found to be contaminated with asbestos will require suitable management if it is to be retained on-site or removed (in line with the CL:AIRE, CAR-SOIL 201234). As asbestos only presents a risk if it is disturbed or is present at the surface, it is considered that the highest risk would be during the construction of the Project. Asbestos management will be included within the CEMP.
- 10.7.84 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 SEPA's (2018) Technical Guidance WM3 and then once this is established, the appropriate disposal facility will be determined through Waste Acceptance Criteria analysis, as required.

Soil, Groundwater and Surface Water Pollution Control Mitigation

- 10.7.85 It is unlikely that the proposed works will require deep excavation. Currently the foundation construction will be to a minimum of 1.0m bgl. There will be a requirement to avoid creating flow paths between potentially contaminated soils and / or groundwater in the underlying superficial deposits and the bedrock aquifers.
- 10.7.86 A Pollution Prevention Plan will be in place prior to the commencement of construction works. This will include reference to GPPs, available on the NetRegs website and Pollution Prevention guidance where GPPs are not yet available (these are gradually being withdrawn and replaced by the GPPs). These cover a number of environmental issues relating to construction, including, but not limited to:
- GPP 1: Understanding your environmental responsibilities – good environmental practices (2021),

- GPP 5: Works and maintenance in or near water (2018),
- GPP 6: Working on construction and demolition sites (2023),
- GPP 8: Safe storage and disposal of used oils (2021),
- GPP 21: Pollution incident response planning (2021), and
- GPP 22: Dealing with spills (2018).

10.7.87 Various fuels, oils and chemicals would be required during the construction of the Project. Measures to reduce potential effects associated with these substances during construction (which shall be detailed in the CEMP) include but may not be limited to:

- The Pollution Prevention 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 the water environment or soils.
- All bulk fuel and COSHH items will be stored in accordance with the relevant GPP (NetRegs, 2024), Pollution Prevention notes, and storage regulations. Tanks and dispensing pumps will be locked when not in use to prevent unauthorised access.
- Any hazardous materials will be stored in designated locations with specific measures to prevent leakage and the release of their contents. This will include a requirement for storage areas to be set back an appropriate distance from surface water features / drains to prevent any uncontrolled discharge (and take into consideration the positions of any groundwater abstraction wells), on an impermeable base with an impermeable bund that has no outflow and is of adequate capacity to contain at least 110% of the contents. Valves and trigger guns will be protected from vandalism and kept locked when not in use. Furthermore, storage of hazardous material will be avoided in areas at risk of flooding.
- Only well-maintained plant and other equipment 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 on 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 within the Project boundary for the duration of the works. Refuelling of vehicles will be in a designated area where spillage containment measures are in place.

10.7.88 Reference should also be made to the mitigation measures detailed in Chapter 9: Water Environment.

Peat Mitigation

10.7.89 A Geotechnical Risk Register will be compiled for the Project which will include risks relating to the peat and any instability.

10.7.90 Given that peat is recorded within the Project and will be disturbed or excavated as part of the works, a PMP is required to be developed. Outline PMPs have been provided in support

of the planning documentation, including for the Uprating Works, and Substation Works which are not covered by this Chapter. The PMPs provide best practice for excavating, handling, storing, transporting and reusing the peat. The purpose of the PMPs is also to further identify how the peat will be reused. As the peat probing has not been completed the PMPs produced for the project are also incomplete, providing general details on how the peat would be managed and anticipated reuses, however, not providing the specific details or confirmation on how the peat would be reused. Following completion of the peat probing, the PMPs shall be updated to provide project specific details on peat depth and extent, as well as confirming peat excavation volumes and reuse/reinstatement uses and volumes for the Project.

- 10.7.91 As peat is indicated to be present within the Project there is a risk of peat instability locally. It is therefore likely that a Peat Landslide Hazard Risk Assessment (PLHRA) will be required for the Project. However, as peat probing is currently ongoing for the Project with peat depths yet to be estimated throughout the areas where peat is recorded, it is not yet possible to conduct a PLHRA. As such, on completion of the peat probing survey the peat depth results will be reviewed alongside topographic data for the Project to identify whether a PLHRA is required, based on the Peat Landslide and Hazard Risk Assessment as per the Scottish Government (2017) guidance. Where a PLHRA is required, this document will be produced to support the planning application and this chapter updated to take account of this. Where a PLHRA is not required, this Chapter will be updated to justify why a PLHRA is not considered required.
- 10.7.92 The PMPs and, where required, the PLHRA provided as part of this EIA Report will be updated by the Principal Contractor following consent and full design maturity, taking into consideration any new information becoming available (i.e. ground investigation data) and provided to the relevant parties for comment and acceptance.
- 10.7.93 Geotechnical supervision throughout the construction works by a suitably experienced and competent Geotechnical Engineer or Engineering Geologist will also be undertaken to ensure best practice and methodologies as identified within the PMPs and, where required, PLHRA are followed.

Mining / Quarrying

- 10.7.94 In locations where micro-siting of critical infrastructure is not sufficient to mitigate mining risk, localised treatment of mine entries or mine workings may be required. The treatment of the mine entries or workings by infill grouting can have an effect on a number of other receptors such as superficial deposits, hydrology, hydrogeology, and agricultural soils. Thus, should the treatment of mine entries or workings be required to facilitate the construction of the Project, a major part of the scheme mitigation measures will be to ensure the control of grout. Mitigation measures as below should be implemented if required:
- Control grout run-off on the ground surface and prevent grout reaching agricultural soils, watercourses or causing contamination of groundwater
 - Minimise disturbance to superficial deposits and agricultural soils during grouting by use of appropriate construction controls such as perimeter bunds, soil protection matting, silt traps and the like and best practice during drilling

- Prevent grout leaks into the surrounding environment below ground from mine workings or mine entries that are being infilled with grout
- Implement monitoring to detect displacement of mine gases and potentially contaminated mine waters

10.7.95 Where mine entry and / or mine workings treatment is required, SEPA shall be consulted to obtain their agreement with the proposals. The contractor shall comply with the guidance from SEPA including BRE (2009)⁵⁴ Stabilising mine workings with pulverised fuel ash (“PFA”) grouts, Environmental code of practice (BR 509). Additionally, SEPA’s local team will have to be notified when the grouting works start, what works are involved and what watercourse / ditches they may affect.

10.7.96 The Mining Remediation Authority shall be consulted to obtain their agreement and permission to proceed with proposed works relating to the stabilisation of coal mine workings and mine entries.

Assessment of Effects

10.7.97 The assessment of effects is based on the Project description outlined in Chapter 4: Project Description.

10.7.98 Potential impacts on geology, soils and mining have been considered for the different phases of the Project (construction and operation). The impacts have been identified with reference to relevant guidance, through consultation and project team discussions, through targeted research on geology, peat, soil and mining impacts, and by considering the information provided by the project engineers on infrastructure and construction methods.

Potential Construction Impacts of the Project

10.7.99 The Project has limited potential to give rise to effects on the geology, soils and mining due to the nature of the Project having minimal footprint as an overhead line carried on steel lattice towers, which is unlikely to cause significant disturbance to the geology, soils and mining environments. However, construction activities may have localised and temporary effects. The potential impacts anticipated are detailed below and are aligned with the impact pathways listed in Table 10.3.

10.7.100 Temporary ancillary development will be required during the construction phase to facilitate the overhead line installation. Key phases of construction (including ancillary development) comprise the following activities:

- Tree felling or lopping (where required),
- Preparation of temporary accesses (where required),
- Excavation and construction of foundations and trench excavations,
- Assembly and erection of steel towers,
- Insulator and conductor fitting and tensioning
- Clearance and reinstatement.

⁵⁴ BRE (2009) Stabilising mine workings with PFA grouts; Environmental Code of Practice (BR 509).

Geology

10.7.101 Site clearance and preparation works for installation of the Project have the potential to impact identified geological receptors (Table 10.3). The preliminary magnitude of impact is assessed as low (adverse), reflecting the limited excavation footprint and the expected reinstatement of excavation areas. Without appropriate controls or mitigation, the following potential adverse impacts include:

- Potential adverse impact and / or damage to sensitive geological receptors (i.e. the bedrock geology), and
- An adverse impact on geological setting from pollution, fuel, oil, concrete or other hazardous substances (from construction plant and equipment).

Land Contamination

- During construction:
 - Contamination of soils and shallow groundwater from accidental leaks and spills, or plant breakdown. Other temporary impacts may also result from the use and storage of materials and substances (e.g., concrete, fuel, oils and soil) which have the potential to pollute (be mobilised to ground or the water environment directly or within runoff). The preliminary magnitude of this impact is assessed as low (adverse) given the implementation of appropriate controls through the CEMP.
- Impacts from existing contamination (if present) including:
 - Creation of new contaminant linkages (e.g. foundation construction through existing Made Ground and into underlying natural soils or shallow bedrock and / or excavation through an aquiclude and into an aquifer),
 - Disturbance of potentially contaminated soils and perched groundwater and creation of new pathways allowing migration of such contaminants to reach sensitive receptors (including human health, the water environment and ecological receptors) during construction,
 - The potential mobilisation of any existing contamination via the exposure of soils / increases in rainwater infiltration through changes in ground cover / in excavations or bulk earthworks,
 - Exposure by construction workers to contaminants in soil or groundwater, gases or vapours during excavations or in confined spaces, and
 - Potential exposure of buried structures (building foundations and infrastructure) to aggressive ground conditions.
- Importation of potentially contaminated fill materials such as aggregates posing a potential risk to human health (construction workers) and underlying groundwater quality (Table 10.3). The preliminary magnitude of this impact is assessed and negligible-low (adverse), provided that imported fill material is adequately screened prior to import.

- The requirement to remove and reinstate soil resulting from the removal of existing foundations and other services (if present), poses a potential risk to human health and the environment (Table 10.3). The preliminary magnitude of this impact is assessed as low. Proper management of soil handling can mitigate risks. These limitations are discussed further in the Limitations section (10.1.49 – 10.1.58).
- Post-construction:
 - It is anticipated that if remediation is required due to contamination (if any) on potentially contaminated sites identified within the Project boundary, the effects will be assessed in the context of overall Project outcomes (Table 10.3). The preliminary magnitude of impact is not applicable at this stage, as it will depend on the findings of ground investigations and subsequent assessments. If required, site-specific permanent remediation measures, which will focus on source removal, pathway breakage or receptor protection, will be developed during the detailed design stage and implemented during the construction phase. These measures would be agreed with the Local Authorities and SEPA to reduce risks to human health, water environment and property from contamination, including from vapours in the ground, to an acceptable level.

Soils / Peat

10.7.102 Peat has been recorded within the Project which may be affected by the proposed works. The following impacts are likely:

- Excavation, temporary storage, backfilling and compaction of soils during foundation, associated services infrastructure, and the creation of temporary access tracks and hardstanding areas. Specifically over compaction of soils caused by the use of heavy machinery onsite and structural deterioration, erosion and loss of soil materials during excavation, soil handling, storage and replacement. The preliminary magnitude of this impact is assessed as low (adverse) reflecting the limited footprint of the Project and given the implementation of appropriate controls through the CEMP and the implantation of the measures included in the 'Excavated Materials and Waste Management' Section.
- Disturbance of natural surface and groundwater flow / drainage, including that relating to peatland habitats, due to temporary diversion or obstruction, excavations and construction of temporary access tracks and hardstanding areas. The preliminary magnitude of this impact is assessed as negligible given the limited excavation required as part of the Project and the limited footprint the Project would have on the preferential flow of the water.
- Disturbance, damage and loss of peatland habitats relating to construction of steel towers, temporary laydown areas and construction of temporary access tracks and construction compounds. The preliminary magnitude of this impact is assessed as medium. Although the actual permanent disturbance of the peat will be minimal due to the scale of the works in relation to the peat deposits and as the temporary works will be fully reinstated or use measures to avoid peat excavation (i.e. trackway for temporary access tracks), as the peat probing has not been completed and as such the peat management proposals (included within the PMP) and the peat stability

assessment (included within a PLHRA, if required) has not been confirmed, this means no confirmation or commitment on specific mitigation measures to reduce the impact on peat can be made at this stage. Therefore, the preliminary magnitude has been increased to account for uncertainty. On completion of the peat probing this Chapter will be revisited along with the supporting documentation (e.g. PMP and, if required, PLHRA) with the assessment updated to take account of this and confirm the mitigation measures which are to be committed to. It is anticipated the magnitude of impact will reduce following consideration of the peat probing and specific peat management proposals/peat instability assessment with any required mitigation.

Mining / Quarrying / Onshore Gas

- 10.7.103 Where required to be undertaken the treatment of mine workings or mine entries by infill grouting can have an effect on a number of other receptors (such as superficial deposits, hydrology, hydrogeology, and agricultural soils).
- 10.7.104 Where the Project crosses shallow underground coal mine workings and treatment has not been determined to be required, i.e. for infrastructure with limited additional loading or which is not sensitive to settlement, recognition that these workings may collapse potentially causing surface subsidence and damage to the Project should be noted with the result of this being maintenance and remediation to repair any potential damage caused.
- 10.7.105 Parts of the study area fall within areas designated by The Mining Remediation Authority as surface coal resource areas.
- 10.7.106 The NLLDP (2022) states that *“Certain coal and aggregate deposits are seen as an economic resource and are required to be protected from developments that sterilise those resources. Opencast coal extraction and hard rock quarrying are expected to continue. Opencast coal development can exploit undisturbed deposits or former shallow mine workings. There are coal reserves north east of Airdrie, at Shotts, and at Morningside”*
- 10.7.107 The FLDP (2020) states that “The Falkirk area contains several minerals of economic importance including coal, fireclay, coal bed methane (“CBM”) and aggregates (sand, gravel and hard rock). The British Geological Survey (“BGS”) Mineral Resource Map identifies the mineral resource in the area.” and “there are three broad areas of shallow coal resources in the area: on the Slamannan Plateau; around Airth; and north of Banknock. An Area of Search for Surface Coal Mining is identified south of Falkirk and on the Slamannan Plateau. In landscape terms the Slamannan Plateau is less constrained and has more opportunities for restoration of abandoned/derelict works than the other areas of shallow coal. One site is consented in the Slamannan Plateau, however lack of developer interest suggests that working is not viable at the present time. Hard rock quarries are located to the north of Denny. These quarries and those in adjacent areas are considered to provide an adequate aggregates land bank for the local market area.”
- 10.7.108 The FLDP (2020) also states that “the Council area has remaining reserves of coal, although the scope for its economic extraction by surface coal mining methods currently appears limited. Nonetheless, in line with Scottish Planning Policy, areas of search for surface coal extraction have been identified, focusing on the Slamannan Plateau, which is

less constrained in landscape terms and provides more opportunities for restoration of abandoned works.” and “The Council is covered by two Petroleum Exploration and Development Licences (“PEDL”), and has onshore gas reserves, including coal bed methane and shale gas, which may be recoverable by unconventional methods. In line with Scottish Planning Policy, PEDL areas are identified. However, there is a current Scottish Government moratorium on granting consents for unconventional oil and gas developments”.

10.7.109 The PEDL zones within the Falkirk Council area do not fall within the vicinity of the site.

10.7.110 For Project construction, including any treatment of mine workings which may be required, the magnitude of impact on both coal and non-coal mineral resources is assessed to be minor as the extent of sterilisation or loss of mineral resource is considered to be negligible given the scale of the Project in comparison to the mineral resources recorded to be present in the area.

10.7.111 The magnitude of impact on the superficial or bedrock geology which may be of use as aggregate, as a result of the construction activities and the Project, is considered to be negligible as the reduction in extent of these deposits will be minimal considering their widespread occurrence and the scale of the Project.

10.7.112 Although historic and now ceased quarries and pits have been identified within close proximity to the Project, the works generally do not remove the quarry or pit and as such, these could be reopened in the future if considered required, although the reopening would require taking into account the presence of the infilled material which could contain anthropogenic material and contaminants.

Assessment of Effects

10.7.113 The assessment of likely effects is presented in Table 10.10. The assessment considers that the embedded mitigation as discussed above is implemented.

10.7.114 Operational effects are scoped out of the assessment (for the reasons indicated in Table 10.3 and Section 10.1.3) and therefore, only construction phases are considered.

10.7.115 Furthermore, construction workers are scoped out of the assessment as it is considered that these acute linkages will be managed by appropriate health and safety measures and are discussed in Section 10.1.125 – 10.1.27 ‘Control Mitigation Measures’ section of this chapter.

Table 10.10 Ground Conditions and Contamination Summary of Residual Effects

Description of Effect (on receptor)	Sensitivity of Receptor	Nature of Effect	Magnitude of Impact	Classification of Effect	Further Mitigation	Residual Effect
Effects of hazardous material and ground contamination on human health – construction workers	High	Temporary, medium term	Medium	Major adverse (significant)	Adhering to the recommendations provided within the Generic Quantitative Risk Assessment and Interpretative Report (Appendix 10.1). Preparing a remediation framework covering the identification, assessment, and mitigation of contamination risks associated with in-situ soils and re-use of excavated materials, should this be required. Adoption of a suitable capping / break layer between any residual contaminated ground and the soft landscaping areas.	Negligible (not significant)
Effects of hazardous material and ground contamination on human health – on-site users, neighbouring uses, occupiers and the general public immediately adjacent to the Site	High	Temporary, medium term	Medium	Major adverse (significant)		Negligible (not significant)
Effects of hazardous material and ground contamination on human health – neighbouring uses, occupiers, and the general public >100m from the site boundary	Low	Temporary, medium term	Low	Negligible (not significant)		Negligible (not significant)
Effects of hazardous material and ground contamination on	High to Medium	Temporary, medium term	Medium	Major to Moderate adverse (significant)	Adhering to the recommendations provided within the Generic Quantitative Risk	Negligible (not significant)

					Assessment and Interpretative Report (Appendix 10.1)	
water environment (superficial aquifers)						
Effects of hazardous material and ground contamination on water environment (bedrock aquifers)	High to Medium	Temporary, medium term	Medium	Major to Moderate adverse (significant)		Negligible (not significant)
Effects of hazardous material and ground contamination – utilities, infrastructure and buildings	Medium	Temporary, medium term	Medium	Moderate adverse (significant)	Adhering to the recommendations provided within the Generic Quantitative Risk Assessment (Appendix 10.1)	Negligible (not significant)
Excavation, temporary storage, backfilling and compaction of soils during foundation construction, associated services infrastructure, and the creation of temporary access tracks and hardstanding areas. Specifically over compaction of soils caused by the use of heavy machinery onsite and structural deterioration,	Low	Temporary, medium term	Low	Negligible (not significant)	Implementation of the Embedded mitigations inclusive of control measures discussed in this chapter are considered adequate with no further mitigation required.	Negligible (not significant)

erosion and loss of soil materials during excavation, soil handling, storage and replacement.						
Class 1 Nationally Important Peatland - Disturbance, damage and loss of peatland habitats relating to construction of steel towers, temporary laydown areas and construction of temporary access tracks and construction compounds.	High	Temporary, medium term	Medium	Moderate Adverse (significant)	Peat probing is currently ongoing for the Project and as such the full effects on the peat cannot be confirmed. The peat probing is required to fully assess the peat as relates to peat management and peat stability, so that fully committed mitigation measures can be made. The classification of effect therefore considers the uncertainty surrounding the peat within the Project and what can be committed to at this stage. On completion of the probing, this chapter will be updated to include any further specific mitigation as relates to the peat. The associated PMPs (detailing the management of the peat within the Project and how this will be reused/reinstated) will also be updated and where required a PLHRA will be produced detailing the peat stability within the Project and any mitigation measures required to reduce the risk. It is anticipated that following these the overall effects relating to the peat would reduce.	Moderate Adverse
Other areas where peat identified outwith those classed as Class 1 - Disturbance, damage and loss of peatland habitats relating to construction of steel towers, temporary laydown areas and construction of temporary access tracks and	Medium	Temporary, medium term	Medium	Moderate Adverse (significant)		Moderate Adverse

construction compounds.						
Subsidence resulting from the collapse of mine workings or mine entries and associated treatment of the mine workings by infill grouting can have an effect on a number of other receptors (such as superficial deposits, hydrology, hydrogeology, and agricultural soils).	High to Medium	Temporary, short term	Medium	Major to Moderate adverse (significant)	The requirement for mine workings and/or mine entry treatment will be confirmed following completion of Mining Risk Assessments and any further investigation recommended from these, however based on extensive shallow mine workings and presence of mine entries across large portions of the site it is considered to be highly likely that treatment of shallow mine workings and entries will be required to facilitate the Project. With appropriate design of the Project construction activities and the implementation of the measures included in the 'Embedded Mitigation and Control Mitigations Measures' sections, it is anticipated impacts would be negligible (not significant).	Negligible (not significant)
Loss of coal and other mineral resources.	Low	Permanent	Negligible	Negligible	The extent of mineral resources which will be affected and potentially lost / sterilised by the Project is minimal in comparison to their overall extent. As such, it is anticipated impacts would be negligible (not significant).	Negligible (not significant)

Additional Mitigation and Monitoring

- 10.7.116 No additional mitigation, compensation and enhancement measures are anticipated to be required for geology, soils and mining (other than those specified in the 'Control Mitigation Measures' section) during the construction phases.
- 10.7.117 No monitoring measures are anticipated to be required for geology, soils and mining (other than those specified in the 'Control Mitigation Measures' section) during the construction phases.

Residual Effects

- 10.7.118 Other than relating to peat, no significant effects are reported in Table 10.10, and therefore no additional mitigation, compensation and enhancement measures are anticipated to be required for those aspects of geology, soils and mining (other than those specified in the 'Control Mitigation Measures' section) during the construction phases.
- 10.7.119 The effects on peat have been assessed to be significant with this mainly due to the peat probing survey currently ongoing across the Project. This has meant mitigation measures as relates to peat including peat management (contained in the PMP) and peat stability (covered in a PLHRA, if required) cannot be confirmed at this stage. On completion of the probing survey, the assessment within this chapter shall be updated with mitigation measures confirmed. The supporting documentation of the PMPs (detailing peat management inclusive of confirming peat reuse/reinstatement) will also be updated to confirm project specific considerations and mitigation measures and, where required, a PLHRA shall be produced to consider peat stability and any mitigation measures associated with any instable areas. It is anticipated that following completion of the probing and consideration of the results within this Chapter and associated supporting documentation, with specific mitigation measures confirmed, the effects of the Project on peat would reduce to not significant.

10.8 Cumulative Effects

- 10.8.1 Cumulative effects occur when a single receptor is affected by more than one effect at any point in time. An exercise which tabulates the residual effects of this ES against relevant receptors, and so identifies the potential for combined cumulative effects has been undertaken.
- 10.8.2 Temporary impacts during construction from ground disturbance or where groundwater controls may inadvertently mobilise contamination or create preferential pathways:
- It is assumed that the cumulative developments listed in Chapter 2: Approach to EIA may require a degree of earthworks during construction. Based on the contaminated land risk and impact assessment in this chapter there may be some temporary adverse effects during construction from ground disturbance or where groundwater controls may inadvertently mobilise contamination or create preferential pathways.
- 10.8.3 Permanent impacts from remediation (if undertaken):
- Beneficial impacts associated with remediation if the developments affect contaminated land that results in removal of potential contaminant sources or mitigation.

- 10.8.4 The cumulative developments listed in Chapter 2 may cause an increased risk of surface subsidence from mine working or mine entry collapse. It is anticipated these developments will have had a Mining Risk Assessment undertaken and mitigation in place, where required, to stabilise workings or mine entries. Where this remediation is undertaken, this would have a beneficial impact on all other developments within the area in relation to legacy mining. As such, the cumulative effects for the developments listed in relation to the legacy mining would be expected range from minor beneficial to negligible to minor adverse (i.e., not significant).

Cumulative Assessment Mitigation

- 10.8.5 It is assumed that the development listed in Chapter 2: Approach to EIA will be regulated as part of the Town and Country Planning (Scotland) Act 1997², or other relevant legislation, and will therefore be required to mitigate effects during construction.
- 10.8.6 No additional mitigation measures are therefore expected to be required as a result of cumulative effects.

Cumulative Assessment Residual Effects

- 10.8.7 During construction, residual effects would be expected to be negligible to minor adverse (not significant).
- 10.8.8 It is not considered that remediation will result in any significant beneficial effects, based on the assessment of land contamination undertaken within this chapter. The residual effects would be expected to be negligible to minor beneficial (not significant).

10.9 Summary of Effects

- 10.9.1 No significant effects have been identified for the geology, soils and mining topic.