EAST PARK ENERGY

East Park Energy

EN010141

Environmental Statement
Volume 1 – Main Report

Chapter 12: Ground Conditions

Document Reference: EN010141/DR/6.1

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009: Regulation 5(2)(a)

September 2025

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EAST PARK ENERGY

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Environmental Statement
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Chapter 12: Ground Conditions

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12.0 GROUND CONDITIONS

12.1 Introduction

12.1.1 This chapter of the Environmental Statement (ES) presents the findings of an assessment of the likely significant effects of the Scheme to existing ground conditions, and any impacts and effects the Scheme may have on the surrounding area.

12.1.2 The chapter provides a review of third-party information on the environmental setting of the Scheme and its previous and current uses with respect to potential risks to the environment or human health. A site walkover has also been undertaken to inform the findings of the assessment. The assessment comprises a qualitative risk assessment with respect to contamination, and where appropriate makes recommendations for further investigation and the mitigation measures required to prevent, reduce, or offset the impacts and the significance of residual effects.

12.1.3 The chapter is supported by the following appendix in **ES Volume 2 [EN010141/DR/6.2]**:

- **ES Vol 2 Appendix 12-1: Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2]**.

Statement of Competence

12.1.4 The chapter has been prepared by Smith Grant LLP (SGP), an environmental consultancy specialising in contaminated land (and air quality) consultancy.

12.1.5 The author is an environmental scientist with over 20 years' experience in the field of environmental risk management. The author regularly provides contaminated land consultancy input to planning applications for a wide range of developments including housing, light and heavy industrial development, waste management and treatment facilities and energy infrastructure. The author is a Chartered Scientist and a full Member of the Institute of Environmental Sciences (IES).

12.1.6 The lead technical author is a Chartered Member of the Chartered Institute of Water and Environmental Management and is an Associate Member of the Chartered Institution of Wastes Management.

12.2 Legislation, Policy and Guidance

Legislation

12.2.1 Land contamination can harm human health, groundwaters, surface waters, soils, ecosystems, and property. As such it is controlled, either directly or indirectly, through a range of legislation, including, but not limited to:

i) Part IIA of the Environmental Protection Act 1990[1] (Part IIA): establishes a system for identifying and remediating statutorily defined 'contaminated land'; and focuses on addressing contaminated land that meets the specific legal definition and cannot be dealt with via other means, including planning;

ii) Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009[2]: These regulations amend certain provisions of the Water Resources Act 1991[3] in order to implement requirements of the Water Framework Directive to improve the water quality of water bodies by, in particular, the control of diffuse pollution.

iii) Environment Act 1995[4]: Part IIA (as indicated above) is inserted into the Environment Act as Section 57;

iv) Contaminated Land (England) Regulations 2006[5]: Provides provisions for the identification and remediation of contaminated land under Part IIA of the Environmental Protection Act 1990.

v) The Control of Asbestos Regulations (CAR) 2012[6]: require duty holders (being any person who is responsible for maintenance or repair) of non-domestic properties to identify and manage asbestos containing materials (ACMs) within their buildings.

vi) The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017[7]: replaces previous legislation and outlines duties of regulators in relation to characterisation and classification of water bodies, environmental permitting, abstraction and impoundment of water; and,

vii) Environmental Permitting (England and Wales) Regulations 2016[8]: impose provisions to prevent ground and water contamination from

operations requiring an Environmental Permit to operate; and implement controls for operations relating to the treatment or handling of contaminated soils.

12.2.2 Similarly, when dealing with land that may be unstable, the planning system works alongside several other regimes including Building Regulations.

Policy

National Policy

12.2.3 The following National Policy Statements (NPS) set out national planning policies in relation to nationally significant solar photovoltaic generation developments:

- Overarching National Policy Statement for Energy (EN-1)[9]; and
- NPS for Renewable Energy Infrastructure (EN-3)[10].

12.2.4 Although it is relevant to the Scheme, there are no specific policies within the NPS for Electricity Networks Infrastructure (EN-5) which relate to contaminated land and the Scheme.

12.2.5 The policies of the National Planning Policy Framework (NPPF)[11] are also important and relevant considerations. The Planning Practice Guidance (PPG)[12] provides further context with regard to Contaminated Land and Land Stability.

12.2.6 Relevant sections of these policies in relation to ground conditions are set out in Table 12.1:

Table 12.1 Summary of National Planning Policy

Document	Policy / Paragraph Reference	Summary of Policy / Paragraph	Where addressed in the ES?
NPS EN-1	Land Use, Including Open Space, Green Infrastructure, and Green Belt	Development of land will affect soil resources. Indirect impacts may also arise from changes in the local water regime, organic matter content, soil	The assessment detailed within this chapter and the supporting **ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2]** follow the Land Contamination

Document	Policy / Paragraph Reference	Summary of Policy / Paragraph	Where addressed in the ES?
	(5.11.4 and 5.11.5)	biodiversity and soil process. Where pre-existing land contamination is being considered within a development, the objective is to ensure that the site is suitable for its intended use.	Risk Management[13] (LCRM) guidance to assess the risks presented from contaminated land and land stability. Section 12.4 of this ES chapter details the assessment methodology and Table 12.15 details mitigation measures for removing significant contaminant linkages.
	5.11.14	Applicants are encouraged to develop and implement a Soil Management Plan which could help minimise potential land contamination.	An **outline Soil Management Plan [EN010141/DR/7.9]** has been prepared to support the application which will be secured by the DCO.
	5.11.17 and 5.11.18	Applicants should ensure that a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. For developments on previously developed land, applicants should ensure that they have considered the risk posed by land contamination. Where contamination is present, applicants should consider opportunities for remediation where possible. It is important to do this as early as possible and engagement with the relevant bodies before the official pre-application is preferred.	A land contamination assessment has been undertaken within this ES chapter and is detailed within the supporting **ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2]**. Recommendations for further assessment alongside other appropriate mitigation measures are provided within this ES chapter as Table 12.17 (Residual Effects).
	5.11.19	Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future	An assessment of the impact on mineral reserves is provided in **ES Vol 1 Chapter 13: Land and Soils [EN010141/DR/6.1]** and at Appendix B of the **Planning Statement [EN010141/DR/5.3]**).

Document	Policy / Paragraph Reference	Summary of Policy / Paragraph	Where addressed in the ES?
		decommissioning has taken place.	
NPS EN-3	(2.10.29)	While land type should not be a predominating factor in determining the suitability of the site location applicants should, where possible, utilise suitable previously developed land, brownfield land, contaminated land and industrial land.	The Applicant notes this and has addressed this within **ES Chapter 3: Alternatives and Design Evolution [EN010141/DR/6.1].**
	Agricultural land classification and land type (2.10.34)	Applicants are encouraged to develop and implement a Soil Resources and Management Plan which could help to use and manage soils sustainably and minimise adverse impacts on soil health and potential land contamination. This should be in line with the ambition set out in the Environmental Improvement Plan to bring at least 40% of England's agricultural soils into sustainable management by 2028 and increase this up to 60% by 2030.	An **outline Soil Management Plan [EN010141/DR/7.9]** has been prepared to support the application.
NPPF	Paragraph 187	'Planning policies and decisions should contribute to and enhance the natural and local environment by […] e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality; and, f) remediating and mitigating despoiled, degraded, derelict,	The assessment detailed within this ES chapter alongside the supporting **ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2]** follows the LCRM guidance to assess the risks presented from contaminated land and land stability. Section 12.4 of this ES chapter details the assessment methodology and an assessment of likely effects alongside proposed mitigation is provided as Table 12.17 (Residual Effects).

Document	Policy / Paragraph Reference	Summary of Policy / Paragraph	Where addressed in the ES?
		contaminated and unstable land, where appropriate'.	
	Paragraph 196	'Planning policies and decisions should ensure that: a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation measures including land remediation (as well as potential impacts on the natural environment arising from that remediation); b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and, c) adequate site investigation information, prepared by a competent person, is available to inform these assessments.	The assessment detailed within this ES chapter alongside the supporting **ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment EN010141/DR/6.2]** follows the LCRM guidance to assess the risks presented from contaminated land and land stability. Section 12.4 of this ES chapter details assessment methodology and an assessment of likely effects alongside proposed mitigation is provided as Table 12.17 (Residual Effects).
NPPG	Land affected by contamination	Failing to deal adequately with contamination can cause harm to human health, property and the wider environment. It can also limit or preclude new development. To ensure a Site is suitable for its new use and to prevent an unacceptable risk from pollution, the implications of contamination for development should be considered through the planning process to the extent that it is not addressed by other regimes.	The assessment detailed within this ES chapter alongside the supporting **ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment EN010141/DR/6.2]** follows the LCRM guidance to assess the risks presented from contaminated land and land stability. Section 12.4 of this ES chapter details assessment methodology and an assessment of likely effects alongside proposed mitigation is provided as

Document	Policy / Paragraph Reference	Summary of Policy / Paragraph	Where addressed in the ES?
			Table 12.17 (Residual Effects).
	Land stability	The effects of land instability may result in landslides, subsidence or ground heave. Failing to deal with this issue could cause harm to human health, local property and associated infrastructure, and the wider environment. They occur in different circumstances for different reasons and vary in their predictability and in their effect on development. The planning system has an important role in considering land stability by: Minimising the risk and effects of land stability on property, infrastructure and the public Helping to ensure that development does not occur in unstable locations or without appropriate precautions; and To bring unstable land, where possible, back into productive use.	The assessment detailed within this ES chapter alongside the supporting **ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment EN010141/DR/6.2]** follows the LCRM guidance to assess the risks presented from contaminated land and land stability. Section 12.4 of this ES chapter details assessment methodology and an assessment of likely effects alongside proposed mitigation is provided as Table 12.17 (Residual Effects).

Local Policy

12.2.7 The Scheme lies within the administrative boundaries of Bedford Borough Council (BBC) and Huntingdonshire District Council (HDC), with HDC being a two-tier authority with Cambridgeshire County Council (CCC). Planning policy of relevance to the assessment includes:

- Bedford Borough Local Plan 2030[14];
- Huntingdonshire Local Plan to 2036[15]; and
- Cambridgeshire and Peterborough Minerals and Waste Local Plan[16].

12.2.8 Only those policies that are relevant to ground conditions have been included in Table 12.2.

Table 12.2 Summary of Local Planning Policy

Document	Policy / Paragraph Reference	Summary of Policy / Paragraph	Where addressed in the ES?
Bedford Borough Local Plan 2030	46S	Use of previously developed land and use of undeveloped land. This policy outlines that where significant development is demonstrated to be necessary on agricultural land, poorer quality land should be used in preference to the best and most versatile agricultural land grades (grades 1-3a). Where the Site is located on agricultural land outside of existing settlements, applications will be required to provide evidence of the grade of agricultural land and, where that land is likely to be grade 3 or higher, undertake a detailed survey of land quality	The Applicant notes this and has addressed the steps taken to avoid development of agricultural land (as far as practicable) as set out within **ES Vol 1 Chapter 3: Alternatives and Design Evolution [EN010141/DR/6.1]** and its supporting appendices. An **outline Soil Management Plan [EN010141/DR/7.9]** has been prepared to support the application, with an assessment of the likely effects of the Scheme on agricultural land and soil resources reported in **ES Vol 1 Chapter 13: Land and Soils [EN010141/DR/6.1])**.
	47S	Pollution, disturbance and contaminated land requires that all development proposals prevent emissions of significant levels of pollutant into the soil, air, water and remediate and mitigate despoiled, degraded, derelict, contaminated and unstable land so that it is suitable for its proposed use. This policy also extends to avoidance of significant impact from artificial light, vibration, dust, gases, and odours.	The assessment detailed within this chapter alongside the supporting **ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment EN010141/DR/6.2]** follows the LCRM guidance to assess the risks presented from contaminated land and land stability. An assessment of likely effects alongside proposed mitigation is provided within Table 12.17 (Residual Effects).
	LP37	Ground Contamination and Groundwater Pollution requires that	The assessment detailed within this chapter alongside the supporting

Document	Policy / Paragraph Reference	Summary of Policy / Paragraph	Where addressed in the ES?
Huntingdonshire Local Plan to 2036		where ground contamination of a site and/or adjacent land is possible, due to factors including but not limited to existing or previous uses, the risks of ground contamination including ground water and ground gases, will need to be investigation. If investigations show that the development could result in unacceptable risk then a risk assessment will be required. If the risk assessment shows that the risk is acceptable, the proposal will be supported subject to appropriate arrangements being put in place to ensure that works stop if unexpected contamination comes to light. If the risk assessment shows that risks will not be acceptable, a more detailed investigation or remediation scheme will be required.	**ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment EN010141/DR/6.2]** follows the LCRM guidance to assess the risks presented from contaminated land and land stability. An assessment of likely effects alongside proposed mitigation is provided within Table 12.17 (Residual Effects).
	LP14	The purpose of this policy is to ensure that the physical environment created by new development protects and promotes a standard of amenity for future occupiers and users and surrounding uses. This includes contamination and water pollution.	The assessment detailed within this chapter alongside the supporting **ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment EN010141/DR/6.2]** follows the LCRM guidance to assess the risks presented from contamination and effects to surface waters and groundwater. An assessment of likely effects alongside proposed mitigation is provided within Table 12.17 (Residual Effects).
Cambridgeshire and	3	Encourages the conservation of peat soils	There are no peat soils within the Order Limits.

Document	Policy / Paragraph Reference	Summary of Policy / Paragraph	Where addressed in the ES?
Peterborough Minerals and Waste Local Plan		through sustainable soil management.	

Guidance

12.2.9 The Environment Agency (EA) LCRM guidance (last updated June 2025) provides an overarching framework for the assessment and investigation of land contamination. It replaces the previous Contaminated Land Report 11: Model Procedures for the Management of Contaminated Land 2004[17].

12.2.10 It is designed to be used in a range of regulatory and management contexts such as voluntary remediation, planning, assessing liabilities or under the Part IIA Environmental Protection Act (1990) (EPA). The guidance sets out a phased approach to the assessment of land contamination and specifies requirements for reports produced as part of the process, including Preliminary Risk Assessments (PRAs) and Generic and Detailed Quantitative Risk Assessments (GQRAs) and (DQRAs).

12.2.11 The EA Guidance is supported by, and cross-refers to, an extensive range of additional statutory and non-statutory guidance relating to aspects such as site investigations, protection of groundwater, understanding and managing asbestos, definition of waste and the specific investigation and assessment procedures under the EPA.

12.2.12 The assessment uses the source-pathway-receptor concept which forms part of a conceptual site model (CSM) which follows the guidance principals of CIRIA C552[18].

12.2.13 The contaminated land assessment within this report has taken full account of the above planning context, legislation and best practice guidance, and where necessary, such guidance is referenced.

12.3 Consultation and Engagement

Scoping

12.3.1 Scoping of this ground conditions assessment was undertaken as part of a wider EIA scoping exercise, the findings of which were recorded in **ES Vol 2 Appendix 4-1: EIA Scoping Report [EN010141/DR/6.2]** that was submitted in October 2023.

12.3.2 A Scoping Opinion was received in December 2023 as presented in **ES Vol 2 Appendix 4-2: EIA Scoping Opinion [EN010141/DR/6.2]**. The feedback received from PINS and stakeholders within the Scoping Opinion has been reviewed and the points relating to this chapter are summarised in Table 12.3 below.

Table 12.3 – Scoping responses with respect to ground conditions

Consultee	Summary of Comments	Response
PINS	3.4.1 An assessment of contaminant exposure to human health during the operational phase can be scoped out of further assessment. However, it is unclear whether the potential for exposure during the decommissioning phase remains. The ES should include an assessment of the likely significant effects on human health resulting from exposure to contaminants during construction and decommissioning or provide evidence to demonstrate the absence of LSE including evidence of agreement with relevant consultation bodies.	An assessment of the decommissioning phase is included in Sections 12.8.43 to 12.8.50 and Table 12.17 (Residual Effects). An assessment if the construction phase is included in Sections 12.8.2 to 12.8.25 and Table 12.17 (Residual Effects)
PINS	3.4.2 Melchborne Woods Ministry of Defence (MOD) bulk storage and filling station is located 1.5km and was formerly used to store ordnance. It is unclear whether unexploded ordnance surveys (UXO) have been undertaken to determine the potential for undetected UXO to be present on-site, particularly as the proximity to	A detailed UXO desk-based study has been undertaken and is provided in Appendix E of **ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment EN010141/DR/6.2]** and proposed mitigation is provided in Section 12.6.36 to 12.6.39 within this chapter.

Consultee	Summary of Comments	Response
	the MOD depot means there is potential for a higher UXO risk if the Site was a target of ordnance. On the basis of the information provided, the Inspectorate does not agree to scope this matter out at this stage. The ES should assess the potential for LSE to occur from UXO or demonstrate the absence of LSE eg through the provision of surveys or agreement with relevant consultation bodies.	There is a commitment to produce a UXO Management Plan prior to construction. This is secured by the **outline Construction Environmental Management Plan [EN010141/DR/7.4]**.
PINS	3.4.3 The Inspectorate has considered the characteristics of the Proposed Development and is content to scope an assessment of controlled waters during Site operation out for the operational phase on the assumption that the assessment of construction effects would inform the design proposal. However, paragraph 9.5.19 states there is a small risk of pollution from chemical spills from on-site maintenance or faults in the PV modules. As such, the ES should clarify the potential sources of pollution during the maintenance phase and outline any measures in place to limit the potential for chemical spillage/ leakage, including from BESS, as well as the mechanism by which these measures are secured.	The potential sources of pollution during the operational phase are addressed within Embedded Mitigation in Section 12.7.2 and the **outline Operational Environmental Management Plan (oOEMP) [EN010141/DR/7.5]**.
PINS	3.4.4 The Inspectorate considers that decommissioning phase activities are likely to be like those of construction and therefore have potential to introduce new pathways for contamination and/ or the remobilisation of contaminants. The ES should include an assessment of these matters, or the information referred to demonstrating agreement with the relevant consultation bodies and the absence of LSE.	An assessment of the decommissioning phase has been included in Table 12.15.
PINS	3.4.5 The Inspectorate has considered the characteristics of the Proposed Development and is content to scope out an assessment of the potential for land instability	An **outline Construction Environmental Management Plan [EN010141/DR/7.3]** has been produced which details procedures in the event of unexpected

Consultee	Summary of Comments	Response
	and aggressive conditions for the operational and decommissioning phases, noting that this matter is proposed to be scope in for the construction phase and would inform remedial works and construction design proposals. However, should the assessment of the construction phase effects identify any on-going risk for the operational phase, this should be assessed within the ES.	contamination encountered or a pollution incident and requirement for a UXO Management Plan to be produced prior to construction. This is secured by the **outline Construction Environmental Management Plan [EN010141/DR/7.4]**.. **Outline Operational Environmental Management Plan (OEMP) [EN010141/DR/7.5]** includes mitigation/management of soils during construction phase. Potential contamination during maintenance works and measures to limit this is provided in Section 12.7.2, 12.8.27 to 12;8;28 and Table 12.17.
PINS	3.4.6 The Scoping Report states that the Proposed Development is not envisaged to impact on ground conditions during operation "providing all potential effects are investigated and scope out of the stage of the development". The term "design stage" is not defined; it is not clear if it refers to detailed design post-consent. , The ES should include an assessment of operational effects or information demonstrating agreement with the relevant consultation bodies and the absence of LSE.	An **outline Operational Environmental Management Plan [EN010141/DR/7.5]** has been prepared which sets out mitigation measures regarding unexpected contamination, leaks or spills during the operational phase of the Scheme. Potential contamination during maintenance works and measures to limit this is provided in Section 12.7.2, 12.8.27 to 12;8;28 and Table 12.17.
PINS	3.4.7 The Scoping Report states that the presence of contaminated soils and groundwater on-site is likely to be limited due to the "longstanding agricultural history of the site". Paragraph 10.6.1 notes that a Preliminary Risk Assessment (PRA) is yet to be conducted to determine the risks relating to contamination. As such, these assumptions have not been verified and there remains a risk that burial pits, fuel/ oil or agrichemical spills or areas of waste burial may be present. The ES should be supported by the findings of a PRA and where land contamination is identified, the ES should assess	Phase 1 Geo-Environmental Desk Study is provided as **ES Vol 2 Appendix 12-1 Phase 1 Geo-Environmental Assessment EN010141/DR/6.2]** and referred to throughout Ch 12 of the ES. The Phase 1 states there is unlikely to be significant point sources of contaminants and no tanks, or chemicals stores and such like, were observed across the scheme area during the walkover. Embedded mitigation (section 12.7.1) includes a protocol to deal with unexpected contamination and sampling for contamination analysis where disturbance of soils is

Consultee	Summary of Comments	Response
	significant effects where they are likely to occur	proposed during construction. **outline Construction Environmental Management Plan [EN010141/DR/7.3]** includes mitigation/management of soils during construction phase Section 12.7.3 details embedded mitigation during the decommissioning phase.
PINS	3.4.8 The ES should assess the LSE of the Proposed Development on the sterilisation of important mineral resources. The Applicant should seek agreement from the Minerals Planning Authority regarding the approach to assessment of this matter.	An assessment of the impact on mineral reserves is provided in **ES Vol 1 Chapter 13: Land and Soils [EN010141/DR/6.1]** and at Appendix B of the **Planning Statement [EN010141/DR/5.3]**).
HDC	A query with respect to the potential for UXO on the Scheme area from the presence of nearby Ministry of Defence 'MOD' facilities was raised.	A detailed UXO desk-based study has been undertaken and associated risk mapping for the Site and proposed mitigation is provided in Section 12.6.34 to 12.6.37 within this chapter. The UXO desk-based assessment is provided in Appendix E of **ES Vol 2 Appendix 12-1: Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2]**.

12.3.3 Following receipt of the scoping opinion, the Applicant engaged with the host authorities to agree matters relevant to the ground conditions assessment.

12.3.4 Under the terms of a Planning Performance Agreement (PPA) between the Applicant, BBC, HDC and CCC, the Councils have a memorandum of understanding that the Environmental Protection Officer (EPO) at HDC can act on behalf of each Council as a 'single voice' with regards the East Park Energy project.

12.3.5 A meeting was held with the EPO of Huntingdonshire District Council, SGP and others in the project team on 12 March 2024. During this meeting the Environmental Protection Officer confirmed that any ground investigations,

should they be required, could be undertaken at detailed design stage and thus post DCO consent.

12.3.6 Both HDC and BBC have been contacted requesting environmental information relating to matters of contaminated land within the Order Limits. Both authorities have confirmed there are no areas within the scheme that are or have been considered as potentially contaminated under Part IIA of the 1990 EPA. BBC has confirmed that there are records showing the presence of historical gravel pits/sand pits/brick pastures. BBC acknowledges that historical pits connected with former brick works are potentially located within the vicinity of the Site, but their exact location (and whether they have since been infilled) is not currently known. Neither council has any records in association with potential UXO on Site nor hold any information with respect to previous intrusive ground investigations undertaken on Site.

Statutory Consultation

12.3.7 Statutory consultation on the project took place between September 2024 and October 2024. This included consultation on the Preliminary Environmental Information Report (PEIR). The feedback received from statutory consultees is summarised within Table 12.4.

Table 12.4 – PEIR consultation responses with respect to ground conditions

Consultee	Summary of Comments	Response
BBC	The Host Authority acknowledge that there may be isolated areas of made ground which will be investigated further in line with the Environment Agency guidance, Land Contamination Risk Management (LCRM). Contaminated Land In terms of the following material submitted by the Promotor, the BBC raises no significant matters of concern or objection. Any Works carried out on Site should be done in line with a) remediation as proposed; b) verification resulting from the	The Applicant acknowledges this and proposed works are included within embedded mitigation (Section 12.7)

Consultee	Summary of Comments	Response
	findings of site investigation; c) the conclusions and recommendations of the submitted reports; and, d) signed off by the relevant statutory body, so as to ensure that the Site is deemed safe and suitable for its intended use.	
CCC	The Council reserves the right to comment on this subject through technical working groups and future consultation.	The Applicant acknowledges this.
HDC	We acknowledge that there may be isolated areas of made ground which will be investigated further in line with the Environment Agency guidance, LCRM.	The Applicant acknowledges this and proposed works are included within embedded mitigation (Section 12.7)
Environment Agency	In 12.6.18, BGS borehole logs within the site boundary are discussed, but those within the surrounding area are ignored with no explanation as geology can be expected to be similar.	BGS boreholes have been reviewed and are included in Appendix 12-1. Boreholes greater than 1.5km away from the Order Limits have not been included as SGP do not consider these representative of the ground conditions present within the Order Limits.
	In 12.8.13, it states “perched water is not expected”, but no explanation or source is given for this.	BGS borehole records have been reviewed for groundwater information and summarised this in Sections 12.6.19 to 12.6.21 and within Appendix 12-1. It was concluded that shallow groundwater may be encountered. A geotechnical investigation has been recommended to inform design proposals which will include information on groundwater strikes / groundwater ingress. Further proposed works are included within embedded mitigation during the construction and decommissioning phases (Section 12.7).

Consultee	Summary of Comments	Response
	In 12.8.43 it states: “Where below ground infrastructure is to be decommissioned and removed, groundwater management and dewatering practices would be adopted where groundwater is encountered”. If this is a risk for decommissioning, we assume it may also be a risk for construction, but a similar statement isn’t given in the relevant section.	This has been added to the embedded mitigation for the construction phase (12.7.1).
	Nearby boreholes are discussed in Appendix 12-1, and geological descriptions are summarised. There is, however, no mention of shallow groundwater in the review (either the presence or absence).	SGP has reviewed surrounding BGS borehole records for groundwater information and summarised this in Sections 12.6.19 to 12.6.21 and within Appendix 12-1. It was concluded that shallow groundwater may be encountered. A geotechnical investigation has been recommended to inform design proposals which will include information on groundwater strikes / groundwater ingress. Further proposed works are included within embedded mitigation during the construction and decommissioning phases (Section 12.7).
	Dewatering is given only passing reference in Appendix 2-3 oCEMP and Appendix 8-2 oSWMP. The presence of shallow groundwater can have a significant impact on construction and design, including the size and viability of SuDS. We have not seen sufficient commentary about groundwater, either its presence or absence, to be reassured that it has been adequately considered. A permit may be required for dewatering activities. Not considering shallow groundwater	SGP has reviewed surrounding BGS borehole records for groundwater information and summarised this in Sections 12.6.19 to 12.6.21 and within Appendix 12-1. It was concluded that shallow groundwater may be encountered. A geotechnical investigation has been recommended to inform design proposals which will include information on groundwater strikes / groundwater ingress. Further proposed works are included within embedded mitigation during the construction and decommissioning phases (Section 12.7).

Consultee	Summary of Comments	Response
	at this stage could cause delays to construction Review historical borehole logs for information about shallow groundwater. If there is insufficient information, a site investigation may be required. This might include longer-term monitoring to identify seasonal changes. Review design of SuDS once this information is available to ensure scale and position is suitable.	
	The aquifer designations for Glaciofluvial Deposits and Oadby Member are incorrect. Within Appendix 12-1, the "Hydrogeology/ Groundwater" descriptions in tables 5.3, 6.3 and 7.3 all have errors or omissions.	These errors have been corrected.
	12.7.1, 12.7.2 and 12.7.3: Statements that the CEMP, OEMP and DEMP "will be insubstantial accordance with" the oCEMP, oOEMP and oDEMP. We assume that this is a typographical error, and "in substantial" should be two words. The error gives the sentence a very different meaning.	This error has been corrected.

12.4 Assessment Methodology

Scope of Assessment

12.4.1 This assessment has been undertaken in accordance with the framework outlined for a Tier 1 Preliminary Risk Assessment in the LCRM guidance[17]. The full assessments are presented in the supporting Phase 1 Geo-Environmental Assessment Report prepared by Smith Grant LLP (SGP) which is provided in **ES Volume 2 Appendix 12-1: Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2]**.

12.4.2 This chapter considers the existing ground conditions, particularly contaminated land which can impose constraints on land use, construction, and decommissioning works for the study area which is the Site plus 50m beyond the Site boundary. For consideration of landfills, this is the Site plus the area within 500m of the Site boundary.

Works Undertaken

12.4.3 In undertaking this assessment, the following activities have been carried out:

- walkover to view the existing Site and its setting;
- review of historical mapping information;
- review of comprehensive environmental setting information (geology, hydrology, hydrogeology, industrial land uses, mineral excavation/extraction, landfilling/waste management activities);
- review of information relating to potential unexploded ordnance (UXO);
- review of development proposals;
- development of preliminary CSM and qualitative risk assessment with regards to ground contamination; and,
- provision of recommendations for further investigations and mitigation, where deemed necessary.

Sources of Information

12.4.4 The baseline data has been obtained through a desk top study and Site visit by an experienced Geo-Environmental Consultant. Third-party information pertinent to the Scheme has also been reviewed in the preparation of this report (as detailed and discussed within **ES Vol 2 Appendix 12-1: Stage 1 Geo-Environmental Assessment [EN010141/DR/6.2]**).

Site Inspection

12.4.5 A Site walkover of accessible parts of the Scheme (confined to roads and public rights of way) was undertaken by an experienced Geo-Environmental Consultant, between 3 October 2023 and 5 October 2023.

12.4.6 A photographic record of relevant features is provided in **Appendix B** of **ES Vol 2 Appendix 12-1: Stage 1 Geo-Environmental Assessment [EN010141/DR/6.2]**.

Preliminary Risk Assessment

12.4.7 The information has been used to determine:

- the potential for any ground contamination to be present on or near the Site due to historical and current land uses; and,
- the potential for any such contamination to pose a constraint to the proposed use of the Site and/or impact the surrounding environment.

12.4.8 The available information has been used to inform the expected baseline condition at the Site with regards to ground and contamination status. The assessment considers the potential for impacts on receptors as a consequence of encountering contaminated land (soils, groundwater, ground gases and vapours) during the construction, operational and decommissioning phases of the Scheme. The assessment uses the source-pathway-receptor concept which forms part of a CSM which follows the guidance principals of CIRIA C552[19].

12.4.9 This considers all potential sources of contamination, all environmentally sensitive receptors that exist now and would exist following the Scheme, and all potential pathways between the sources and receptors (referred to as 'contaminant linkages').

12.4.10 The information has been used to inform the risk assessment and determine any further work and/or investigations that may be required to identify any remedial requirements to ensure the Site is suitable for the Scheme with regards to ground contamination and land stability.

Source Potential

12.4.11 The source potential considers the likely nature, type and extent of contamination that may be present within the underlying and surface soils and groundwater. Potential off-Site sources that may impact the Scheme are also considered.

Receptor Identification

12.4.12 The principal receptors considered in this assessment are:

viii) Human Health – construction workers, Site users, maintenance workers, nearby land occupiers/users;
ix) Controlled Waters – surface waters and groundwater;
x) Ecology – designated nature conservation sites, sensitive habitats and features; and,
xi) Building/Structures – future buildings, foundations and sub-structures and utility services.

Potential Pathways

12.4.13 Potential pathways for exposure of identified receptors to contamination are identified in Table 12.5.

Table 12.5: Potential Pathways

Receptor	Potential Pathways
Human Health	Ingestion, dermal, inhalation and asphyxiation.
Ecology/Ecosystems	Plant uptake from soils, groundwater, toxic impacts on fauna (ingestion/inhalation) and indirect contamination of surface waters.
Controlled Waters	Leaching, direct discharge and surface water run-off.
Buildings/Property	Direct contact/attack on buried structures, permeation of water supplies, explosion from build-up of flammable gases and encountering UXO.

12.4.14 The effectiveness of each contaminant pathway will be dependent on the nature and likelihood of the potential linkage and will be influenced by factors such as the distance of receptors from the source, the local topography and terrain, the nature of release and dilution and dispersion, and the presence of any barriers to exposure. Where a contaminant pathway is not present then no further assessment is undertaken.

12.4.15 The assessment takes account of any embedded mitigation measures to be incorporated within the design of the development.

Assessment of Significance/Assessment Criteria

12.4.16 The resulting effects are the consequences of the potential impacts, i.e. changes in environmental status of receptors arising for example from changes in pollutant concentrations. The potential effects are determined through the assessment of the potential magnitude, or severity, of impacts and the sensitivity of the receptors and follows the guidance principals of CIRIA C552.

12.4.17 The determination of the potential magnitude of an impact takes account of several factors such as nature and type of potential contamination, duration, spatial extent and the likelihood of a potential contaminant linkage being present.

12.4.18 The sensitivity of a receptor is determined through consideration factors such as human health exposure and the designation and legal status of controlled waters and ecological sites. Examples of receptor sensitivity are summarised in Table 12.6:

Table 12.6: Examples of Receptor Sensitivity

Sensitivity	Type	Criteria
High	Human Health	Construction workers: extensive earthworks e.g. extensive ground disturbance and soils movement, deep excavations Future end use of a Site: Residential, allotments, Children's play areas
	Controlled Waters	Groundwater: Principal Aquifer, Zone I Source Protection Zones, drinking water abstractions located within zone of influence of the Site. Surface Waters: River Quality – High to Good.
	Ecology	Internationally/nationally Designated Nature Conservation Sites
	Buildings/Property	High historical value or other sensitivity (Listed Buildings), World Heritage Sites, Proposed piling and significant excavations.
Medium	Human Health	Construction workers: limited earthworks, ground disturbance and movement of Site won soils, shallow excavations only Future end use: Public Open Space, landscaping
	Controlled Waters	Groundwaters: Secondary aquifers, Zone II and III SPZ, industrial water abstractions located within zone of influence of the Site
	Ecology	Nature conservation sites of local importance
	Buildings/Property	No buildings of historical value or importance. Belowground excavations and/or piling
Low	Human Health	Construction workers: minimal/no ground disturbance

Sensitivity	Type	Criteria
		Future End use: Industrial/commercial, hardscaping (e.g. significant areas of hardstanding/buildings).
	Controlled Waters	Groundwater: Unproductive aquifers, outside of SPZ, no water abstraction nearby.
	Ecology	Soft landscaping and other areas of green space that do not have any habitat designation and are not of local importance.
	Buildings/Property	Aboveground infrastructure only.

12.4.19 Example criteria for the determination of the magnitude of impact are set out in Table 12.7:

Table 12.7 Examples of Magnitude of Impact

Classification	Definition
Large	Qualitative risk assessment identifies one or more relevant pollutant linkages of high likelihood. Contamination levels encountered in excess of assessment criteria (for human health/environment/property). Total loss of, or alteration to, the baseline resource such that post-development characteristics or quality would be fundamentally and irreversibly changed.
Medium	Qualitative risk assessment identifies one or more relevant pollutant linkages of probable likelihood. Contamination levels encountered marginally in excess of assessment criteria (for human health/environment/property). Loss of, or alteration to, the baseline resource such that post-development characteristics or quality would be partially changed.
Small	Qualitative risk assessment identifies one or more relevant pollutant linkages of low likelihood. Contamination levels encountered below, but potentially approaching, assessment criteria (for human health / environment / property). Small changes to the baseline resource, which are detectable, but the underlying characteristics or quality of the baseline situation would be similar to pre-development conditions.
Negligible	Qualitative risk assessment identifies pollutant linkages unlikely. Contamination levels encountered well below assessment criteria (for human health/environment/property).

12.4.20 The likelihood of a contaminant linkage being present is classified as per Table 12.8.

Table 12.8: Likelihood of Contaminant Linkages

Classification	Definition
High Likelihood	Contaminant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor.
Likely	Contaminant linkage may be present, and it is probable that the risk will occur over the long term.
Low Likelihood	Contaminant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Unlikely	Contaminant linkage may be present but the circumstances under which harm would occur are improbable.

12.4.21 The resulting significance of effect is determined in relation to the sensitivity of the receptor and potential magnitude of the impacts as per Table 12.9.

Table 12.9 Significance of Effect of Contaminant Linkage

		Receptor Sensitivity		
		High	**Medium**	**Low**
Magnitude / Severity of Impact	Large	Major	Moderate/Minor	Minor
	Medium	Moderate	Moderate	Negligible
	Small	Moderate/Minor	Minor	Negligible
	Negligible	Minor	Minor	Negligible

12.4.22 In general, a contaminant linkage that has either a *minor* or *negligible* effect is considered as not significant whereas contaminant linkage that has a perceived moderate, or major effect is generally significant in EIA terms.

12.4.23 The significance of the effect for each contaminant linkage, however, is ultimately subject to professional judgement whereby it is possible that some moderate levels of effect may be deemed insignificant depending upon the

specific circumstances or minor levels of effects could be deemed significant. In such instances an explanation of this judgement is provided.

12.4.24 Examples of resulting effects are presented in Table 12.10 below.

Table 12.10 Examples of Contaminant Linkage Risk Ratings

Effect on the Receptor	Definition
Major	Severe harm to a receptor may already be occurring, or there is a high likelihood that severe harm could occur form an identified hazard. Urgent investigation and remedial works/mitigation in the short term is likely to be required. Examples include: Short-term (acute) damage to human health. Significant water pollution incident caused by uncontrolled release of contaminants e.g. major spillage or leak. Damage to a particular European, national or locally designated eco-system as a result of acute exposure. Catastrophic damage to crops, buildings or property.
Moderate	Harm is likely to arise to a receptor from an identified hazard. Investigation is required, and remedial works may be necessary in the short term and are likely to mitigate risks over the long term. Examples include: Long-term (chronic) damage to human health e.g., contaminants present above appropriate threshold values. Pollution of sensitive water resources such as through slow release of contaminants through leaching into an aquifer. A significant change in a particular ecosystem. Significant damage to crops, buildings, structures and services potentially rendering unsafe or impairing function.
Minor	There is a low be not negligible possibility that harm in the long term would arise to a receptor and if realised, harm would at worst be mild. Examples include: Long-term (chronic) damage to human health is improbable e.g. contaminants well below appropriate threshold values. Appreciable pollution of a low or non-sensitive water resource, e.g. non-classified groundwater is unlikely. Easily repairable damage to sensitive buildings/structures/services or the environment.
Negligible	There is a negligible possibility that harm could arise to a specific receptor.

12.5 Assumptions and Limitations

12.5.1 The assessment has been undertaken based on available information as detailed within Table 3.1, p.11 of **ES Vol 2 Appendix 12-1: Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2],** as well as sources of information and observations made during the site walkover. Access during the walkover was limited to rights of way, access roads and associated viewpoints.

12.5.2 Baseline ground condition data has been obtained through a review of existing information which included a Phase 1 Geo-Environmental Assessment. Whilst the investigation is adequate to assess and characterise the Site qualitatively, conditions may exist at the Site that have not been identified to date and may be encountered during the geotechnical site investigation as proposed.

12.6 Baseline Conditions

Site Description and Context

12.6.1 A description of the Site setting and surroundings is set out in **ES Vol 1 Chapter 1: Introduction [EN010141/DR/6.1]** and within **ES Vol 2 Appendix 12-1: Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2]**. Only the key aspects of relevance are summarised here.

Site Characterisation

Site Descriptions

12.6.2 The Order Limits have been sub-divided into East Park Sites A to D in which all of the above ground infrastructure proposed as part of the Scheme would be located. The Order Limits also cover land outside of East Park Sites A to D which will be required for access, construction, cabling, and the grid connection to the Eaton Socon Substation. The Site can be described as follows:

- **East Park Site A** – comprising agricultural fields west and south-west of Pertenhall which are crossed by several public rights of way, the Pertenhall Brook, and farm access tracks;
- **East Park Site B** – comprising agricultural fields interspersed with small blocks of woodland between the villages of Pertenhall, Keysoe, and Little Staughton which are crossed by public rights of way, an unnamed watercourse, field ditches and farm access tracks;
- **East Park Site C** – comprising agricultural land to the south of the River Kym, and south of Great Staughton, interspersed by woodland and tree belts, and crossed by farm access tracks;
- **East Park Site D** – comprising agricultural fields to the south of the B645 and the west of Pastures Farm and Wood Farm, crossed by public rights of way and farm access tracks;
- **Cable Corridor (Site B to Site C)** – which connects Site B to Site C across an unnamed road and agricultural fields;

- **Cable Corridor (Site C to Site D)** – which connects Site C to Site D across Moor Road and arable fields; and
- **Grid Connection (Site D to Eaton Socon Substation)** – which connects Site D to the Eaton Socon Substation and crosses open arable fields, the Duloe Brook, and Duloe Road and Bushmead Road.

Access

12.6.3 The main site access will be from the B645 into Site D, with all HGVs arriving into the Site from this point, and the majority of daily staff movements arriving into Site D. A small number of daily staff movements would access Sites A and B without passing through the main site access.

12.6.4 The construction access strategy has been designed to avoid vehicles using the public highway as far as practicable. Once vehicles arrive in Site D from the main site access at the B645, a temporary access road will connect westward across fields to Site C, avoiding the use of Moor Road. From Site C, access will be taken north-west via a new access track to an existing HGV access to Great Staughton Road where vehicles will follow the public highway to access Site B, thus avoiding large volumes of traffic passing through Great Staughton. Vehicles would be routed through Site B crossing Little Staughton Road close to Lodge Farm before continuing west towards the B660. At the B660 vehicles would follow the public highway for a short section before accessing Site A using an existing access at Manor Farm.

12.6.5 The grid connection will be accessed via a temporary access from Site D to the Eaton Socon Substation.

Setting and Topography

12.6.6 East Park Site A is located at an approximate elevation of between 40 and 70m above ordnance datum (AOD) rising in the south of East Park Site A according to spot heights on OS mapping.

12.6.7 East Park Site B is located at an approximate elevation of between 40 and 60m AOD rising in the south of East Park Site B according to spot heights on OS mapping.

12.6.8 East Park Sites C and D are located at an approximate elevation of between 30 and 50m AOD rising in the south of both Sites according to spot heights on OS mapping.

12.6.9 The cable corridors from Sites B to C and Sites C to D are located at an approximate elevation of between 30 and 35 m AOD and 30m AOD, respectively, according to spot heights and contours on OS mapping.

12.6.10 The cable connection from Site D to Eaton Socon Substation is located at an approximate elevation of 30 m AOD according to spot heights on OS mapping.

Structures

12.6.11 A group of farm buildings (Middle Lodge Buildings) were observed just off-site to the north of the southern parcel of East Park Site A (with ancillary farming equipment and haybales located within external areas which suggests this area is still operational to a certain extent.

12.6.12 A structure approximately 2m high and 5m wide made of brick with a plastic/sheet metal roof was observed along the north-east boundary of East Park Site B. It appeared to store hay bales at the time of the site walkover.

12.6.13 A sheet metal barn is present in the centre/east of East Park Site C.

12.6.14 No structures were present on East Park Site D.

12.6.15 The only structures along the grid connection to the Eaton Socon substation were electricity pylons and the Eaton Socon substation.

Geology and Hydrogeology

12.6.16 The presence of made ground or artificial deposits is not mapped recorded on Site but was observed in localised areas associated with

footpaths/bridleways/gate entrances etc. which is presumed to have been placed to provide a robust layer of ground in trafficked areas.

12.6.17 Where mapped, the superficial deposits of glaciofluvial deposits or the Oadby Member of Diamicton are present. Alluvium/River Terrace Deposits are mapped within the vicinity of the natural watercourses. Superficial deposits are absent within select areas.

Table 12.11: Underlying Superficial Geology

Site	Location	Superficial Deposits
East Park Site A	North	River Terrace Deposits of sands and gravels and Alluvium of clay and silt following Pertenhall Brook.
	South	Glaciofluvial Deposits of Mid-Pleistocene Sands and Gravels/Oadby Member of Diamicton/no superficial deposits.
East Park Site B	North	River Terrace Deposits of sands and gravels and Alluvium of clay and silt following Pertenhall Brook.
	South-East	Glaciofluvial Deposits of Mid-Pleistocene Sands and Gravels/Oadby Member of Diamicton/no superficial deposits.
East Park Site C	North	River Terrace Deposits of sands and gravels and Alluvium of clay and silt following the River Kym.
	Southwest boundary	Oadby Member of Diamicton.
	Remainder of Site	No superficial deposits.
East Park Site D	Across most of Site	Oadby Member of Diamicton.
	Southern boundary	Alluvium of clay and silt following South Brook.

Site	Location	Superficial Deposits
Cable Connection Corridor between Sites B and C	Across all of Site	No superficial deposits
Cable Connection Corridor between Sites C and D	Across most of Site	No superficial deposits
	Southeastern area	Oadby Member of Diamicton.
400 kV grid connection from Site D to Eaton Socon Substation	North	Oadby Member of Diamicton.
	South	Alluvium of clay and silt following Duloe Brook.

12.6.18 The full Site is recorded to be underlain by bedrock of the Oxford Clay Formation of Mudstone. This is recorded as an unproductive aquifer.

British Geological Survey Borehole Logs

12.6.19 There are seven British Geological Survey (BGS) borehole logs available on the scheme. These are present to the south-east of the grid connection route, associated with the Eaton Socon substation (TL15NE64-69 and TL15NE71-72). These reported ground conditions as a stiff light grey/brown silty clay with chalk fragments and rounded flint pebbles to the base of the exploratory holes (max depth of 9.6m below ground level (bgl)). This is concurrent to the Oadby Member of Diamicton which has been mapped within the same area. Groundwater was only encountered in one location within the substation (TL15NE64) at both 1.5m bgl within soft to firm silty clay and 5.4m bgl within chalky boulder clay.

12.6.20 There are limited BGS borehole logs available in the surrounding area. SGP has reviewed the closest boreholes; however, boreholes at a distance of greater than 1.5km from the scheme boundary are not considered representative of ground conditions within the Order Limits.

12.6.21 The available BGS records in the surrounding 1.5km reported groundwater levels between 1.7m and 7.62m bgl. To the north of East Park Site A, groundwater was reported between 16 and 21m bgl. To the west of East Park Site A, groundwater was reported in wells between 2.6 and 2.7m from the wellhead; however, the wellhead height / depth was not recorded. To the south of East Park Site B, a groundwater spring was reported at 7.62m bgl at the interface between boulder clay and Oxford Clay. To the north of East Park Site C, a well record states the water level was at 2.7m bgl. To the north of East Park Site D, groundwater was reported in various boreholes / wells between 1.2 and 3.35m bgl.

12.6.22 Within the Eaton Socon Substation, seven boreholes were drilled with only one reporting groundwater at 1.7m bgl.

Natural Ground Stability

12.6.23 According to the environmental data reports for the whole Site the following land stability risks are apparent:

- Risk of compressible ground is moderate;
- Risk of landslides is low;
- Risks from running sand, shrinking and swelling clays are low for East Park Site B and the Grid Connection to Eaton Socon Substation, and are very low elsewhere;
- Risk of collapsible ground is very low; and,
- There is a negligible hazard risk from ground dissolution.

12.6.24 BGS mapping shows the closest fault to be located 9.15 km to the north-east of East Park Site A.

Hydrogeology/Groundwater

12.6.25 The aquifer designations of the underlying geological units are:

Table 12.12: Hydrogeology of Scheme

Site	Superficial Deposits	Aquifer Designation	Groundwater Vulnerability
East Park Site A, B, C	River Terrace Deposits of sands and gravels	Secondary undifferentiated aquifer	High (Site B)
			Medium (Sites A and C)
East Park Sites A, B, C, D, 400 kV Grid Connection to Eaton Socon Substation	Alluvium of clay and silt following watercourses	Secondary undifferentiated aquifer	High (Site B)
			Medium (Sites A, C, D, and the Grid Connection to Eaton Socon Substation)
East Park Sites A and B.	Glaciofluvial Deposits of Mid-Pleistocene Sands and Gravels	Secondary aquifer	High (Site B)
			Medium (Site A)
East Park Sites A, B, D, Cable Corridor from Site C to D and grid connection from Site D to Eaton Socon substation	Oadby Member of Diamicton	Secondary undifferentiated aquifer	High (Site B)
			Medium (Sites A, D, and the Grid Connection from Sites C to D and Site D to Eaton Socon Substation)

Where aquifers are present. There is no aquifer underlying the Cable Corridor from Sites B to C.

12.6.26 The underlying bedrock across the Order Limits (Oxford Clay Formation) supports unproductive strata with low groundwater vulnerability.

12.6.27 While no BGS records are available within the Order Limits, SGP has reviewed the neighbouring records within 1.5km of the Order Limits. Groundwater has been encountered between 1.7m bgl and 7.62m bgl within well records and groundwater strikes during drilling works.

Hydrology/Drainage

12.6.28 East Park Sites A, B, C, D, the Cable Connection Corridor between Sites B and C, Cable Connection Corridor between Sites C and D and the grid connection to Eaton Socon Substation are currently all predominantly within arable agricultural use. Drainage will predominantly be via shallow infiltration into soft ground or via surface ditches.

12.6.29 Multiple surface watercourses cross the Site. This includes the River Kym, Duloe Brook, Pertenhall Brook, South Brook, Colmworth Brook and Honeydon Brook. All surface watercourses form part of the Lower Great Ouse catchment. Several farm drainage ditches are also located across the Site, particularly at field boundaries.

12.6.30 Table 12.13 sets out the watercourses in a River Basin Management Plan in accordance with the Water Framework Directive (WFD):

Table 12.13: WFD Water Body Characteristics

WFD Indicator	Pertenhall Brook	Colmworth Brook	Duloe Brook	River Kym
Water Body ID	GB105033042960	GB105033043220	GB105033043260	GB105033043270
Overall Status	Moderate	Moderate	Moderate	Moderate
Ecological Status	Moderate	Moderate	Moderate	Moderate
Chemical Status	Fail (2019) Does not require (2022)	Fail (2019) Does not require (2022)	Fail (2019) Does not require (2022)	Fail (2019) Does not require (2022)
Overall Objective	Moderate by 2027	Good by 2027	Good by 2027	Moderate by 2027

12.6.31 The remaining watercourses (and field drains) have not been classified under the WFD.

East Park Site A

12.6.32 The nearest mapped surface watercourse is Pertenhall Brook running through the north of East Park Site A.

East Park Site B and Cable Corridor to Site C

12.6.33 The nearest mapped surface watercourses are an unnamed watercourse that flows south to northwest through East Park Site B and a small unnamed watercourse crossing the northeast of East Park Site B located within the vicinity of Great Staughton Road.

East Park Site C and Cable Corridor to Site D

12.6.34 The nearest mapped surface watercourse is the River Kym, bounding the north of East Park Site C.

East Park Site D

12.6.35 The nearest mapped surface watercourse is South Brook running along the southern boundary.

Grid Connection to Eaton Socon Substation

12.6.36 Four mapped surface watercourses are mapped crossing the Grid Connection to Eaton Socon Substation:

- South Brook – north;
- Duloe Brook – South;
- Colmworth Brook – centre; and
- Honeydon Brook – south-west boundary.

Excavation/Mining

12.6.37 East Park Sites A, B, C, D, the Cable Connection Corridor between Sites B and C, Cable Connection Corridor between Sites C and D and the grid connection to Eaton Socon substation are not located within an area of historical coal mining although localised sand and gravel extraction

historically occurred on Site and within the wider local area. This is evident from the former gravel pits, of which one was present on Site (in the southern part of East Park Site A) and two others located just beyond the Site boundary of East Park Site A and Site B.

Landfill/Waste Disposal

12.6.38 There are no current or historical landfills located within 500m of East Park Sites A, B, C, D, the Cable Connection Corridor between Sites B and C, Cable Connection Corridor between Sites C and D. One historic landfill has, however, been identified 407m to the south-east of the grid connection to Eaton Socon Substation:

- Pit 23 – accepted household waste but no dates are available. This is shown on historical mapping from 1950 and is no longer shown on mapping of 1974. By 2007, a large warehouse was constructed on the location. Planning application references: 0501090FUL, 0602351FUL, 0603452FUL located on the planning portal available on Huntingdonshire District Council website[20] shows that a desk study and ground investigation was undertaken on this former landfill in 2001. The site investigation found made ground in the area of the former pit to depths between 1.4 m and 2.6 m. No remediation or further investigation reporting can be found on the planning portal.

Radon

12.6.39 East Park Sites A, B, C, D, the Cable Connection Corridor between Sites B and C, Cable Connection Corridor between Sites C and D and the grid connection to Eaton Socon substation lie within an area where <1% of homes are estimated to be at or above the Radon Action Level.

UXO Risk

12.6.40 The UXO risk map identifies East Park Sites A, B, C, D, the Cable Connection Corridor between Sites B and C, Cable Connection Corridor between Sites C and D and the grid connection to Eaton Socon substation as located within

an area of Low Risk. However, a preliminary (pre phase 1) UXO desk study was completed which recommended that a Detailed UXO Desk Study would be required. This is due to the following Royal Air Force (RAF) facilities being located within 5 km of the Order Limits:

- 'Melchbourne Woods MOD/Former Riseley RAF' located 1.8 km to the west of East Park Site A;
- RAF Little Staughton formerly located at Little Staughton Airfield at around 0.3 km to the southwest of East Park Site C; and,
- RAF Thurleigh which was formerly located at 1.8 km southwest of East Park Site B.

12.6.41 One World War Two 'WWII' bombing decoy was previously located at approximately 0.5 km south of the Order Limits although the exact location has not been disclosed.

12.6.42 A UXO specialist consultancy (1st Line Defence) has undertaken a detailed UXO Desk Based Risk Assessment for the Site. The findings of this study (see **Appendix E** of **ES Vol 2 Appendix 12-1: Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2]**) are:

- Risk of both German and anti-aircraft unexploded ordnance: Part of East Park Site B including the sections between Keysoe and Little Staughton, surrounding Lodge Farm and the former Kangaroo Inn, have been elevated to Medium Risk whereas the remainder of the Site is attributed a Low Risk.
- Risk of Allied Ordnance: The whole Site is attributed as a Low Risk from the potential of such UXO.

12.6.43 The UXO specialist has made the following recommendations:

- a UXO Risk Management Plan is prepared and adopted for the whole Scheme area and site specific UXO awareness briefings are given to all personnel involved in the development who will conduct intrusive works; and,

- Within the areas designated as a having a Medium Risk of UXO, there should be UXO specialist on-site support wherever excavation is proposed and an intrusive downhole magnetometer survey should be undertaken where boreholes and piled foundations are proposed.

Nature Conservation

12.6.44 Sites A, B, C, D, the Cable Connection Corridor between Sites B and C, Cable Connection Corridor between Sites C and D and the grid connection to Eaton Socon substation are all located in a nitrate vulnerable zone related to the Huntingdon River Gravels groundwater aquifer which feeds basal flow to the river Great Ouse. The whole Site plus its environs is located within a SSSI impact risk zone for nearby SSSIs including: the Little Paxton Wood (deciduous woodland), St Neots Common (lowland grassland) and Swineshead Wood (Broadleaved, mixed and Yew lowland woodland). No other environmental designations have been identified either on, or within 500m of the Scheme.

Foot and Mouth Burials

12.6.45 The Site is not within an area where there are records of foot and mouth burial sites. Both local authorities were approached and confirmed they had no records. The risk of their presence is considered as negligible[21].

Development History

12.6.46 A series of 'Site Feature Plans' are provided within **ES Vol 2 Appendix 12-1: Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2]**. These show the historical features on Site as identified on OS and aerial mapping.

12.6.47 A summary of key changes to each Site and the surrounding area is detailed below. Full details are provided within the **ES Vol 2 Appendix 12-1: Phase 1 Geo-Environmental Assessment [EN010141/DR/6.2]**.

East Park Site A (see Drawing D02 in ES Volume 2 Appendix 12-1 [EN010141/DR/6.2])

- An old gravel pit and pond (A1) are present in the south of East Park Site A from earliest available mapping (1883) to 1979-1980 when the gravel pit shrinks and is remapped as a pond. Both are no longer shown on historical mapping by 1999 with the gravel pit presumably being infilled but the pond remains present and can still be seen in satellite imagery.
- Beaver's Park in the south is present from the earliest available mapping (1883) to 1952.
- Another pond (A2) is located to the along the farm track/bridleway leading to Manor Farm from 1883 to 1984.

East Park Site B (see Drawing D03 in ES Volume 2 Appendix 12-1 [EN010141/DR/6.2])

- A historic pond (B1) was present in the southwest field from the earliest available mapping (1884) to sometime between 1901 and 1979 when it is no longer shown on mapping. No evidence is visible on satellite imagery and the area could not be seen during the site walkover.
- An existing pond (B2) has been present on the south-west boundary from the earliest available mapping (1884). Satellite imagery shows the area to be covered with grass and trees in 2023 which indicates a seasonal pond. However, the area could not be seen during the site walkover.
- A small set of historical buildings has been identified on the south-west corner, adjacent to pond B2. These were present on mapping from 1884, were partially demolished by 1901, and were no longer present on mapping by 1979. No evidence is visible on satellite imagery and the area could not be seen during the site walkover.
- An old gravel pit is present to the immediate north of East Park Site B from earliest available mapping (1883) to 1979-1980 when it is no longer shown on mapping and cannot be seen on satellite imagery in 1999. No visible evidence of the gravel pit was observed during the site walkover and therefore, it has most likely been infilled.

- Two ponds (B3+B4) are located in the north-east and west and are no longer shown on historical OS mapping by the 1970s. However, B3 in the north-east can be seen on aerial imagery up until 2006 when the area is covered with grass. Whereas B4 in the west cannot be seen on any aerial imagery and could not be seen from the access points during the site walkover.

East Park Site C (see Drawing D04 in ES Volume 2 Appendix 12-1 [EN010141/DR/6.2])

- Two former ponds (C1 and C2) are present in the south-west of East Park Site C from the earliest available mapping. One is no longer shown on mapping by 1902 and the other is no longer shown by 1926. Neither can be seen on aerial imagery.
- A U-shaped building is present in the north of East Park Site C from the earliest available mapping but then is demolished by 1901.
- An L-shaped building is present in the east of East Park Site C from the earliest available mapping until the 1970s. A very small structure is left in the rough location until 1999.

East Park Site D (see Drawing D05 in ES Volume 2 Appendix 12-1 [EN010141/DR/6.2])

- A former pond (D1) is present from 1883 to 1924. No evidence can be seen on aerial imagery nor during the site walkover.
- Two electricity pylons are present on East Park Site D from 1950 to present day, heading southwards.
- Two manholes can be seen on aerial imagery from 1999 to present day. Another pair can be seen 800 m to the south-west, indicating an underground service.

Cable Connection between Sites B and C (see Drawing D06 in ES Volume 2 Appendix 12-1 [EN010141/DR/6.2])

- Garden Farm is present directly to the northeast from the earliest historical mapping (dated 1887).
- Spring Hill Road is located at the western edge from earliest historical mapping (of 1884). A watercourse is shown along its western edge flowing to the north which appears to be present on historical OS mapping until 1979.
- By 1999 and until sometime before 2006, a drain is seen crossing the central part of the Site and flows northwest.
- By 2006, a farm track with drain flowing along the track boundary is shown, which crosses the central part of the Site.
- By 2021 a small building is shown on the alignment for the proposed Site access just north of the Cable Corridor. It is presumed that this is associated with the adjacent Garden Farm located directly to the northeast.

Cable Connection between Sites C and D (see Drawing D06 in ES Volume 2 Appendix 12-1 [EN010141/DR/6.2])

- Earliest historical OS mapping of 1882 shows a drain with field boundary crossing the Site flowing from west to east. This is no longer shown on mapping by 1982.
- A farm track which crosses the western part of the Site from south to north is shown from 1882 until 2006.
- Moor Road is shown at the western edge of this proposed cable connection from earliest historical OS mapping of 1882 and is still present.

Grid connection to Eaton Socon substation (see Drawing D06 in ES Volume 2 Appendix 12-1 [EN010141/DR/6.2])

- Wood Farm (previously known as Western Pastures) has been identified to the immediate north.

- Eaton Socon Substation was constructed between 1987 and 1994 with multiple buildings and pylons. A large building was added to the site in 2010.
- Numerous small holdings and nurseries associated with allotments are located 250m south of the Grid Connection to Eaton Socon Substation, from 1970 and are still present.

Contamination Sources

12.6.48 The following potential contaminant sources during the desk top study have been identified within the Order Limits:

- East Park Site A: historical gravel pit (now infilled) potential foundations and/or demolition rubble associated with the former Beaver's Park located in the south-west and abandoned oil pipeline crossing the southern section. - See Drawing D02 within **ES Volume 2 Appendix 12-1 [EN010141/DR/6.2]**);
- East Park Site B: Former Pond 'B1' and abandoned oil pipeline (see Drawing D03 within **ES Volume 2 Appendix 12-1 [EN010141/DR/6.2]**); and,
- East Park Site C: Former Pond 'C1' (see Drawing D04 within **ES Volume 2 Appendix 12-1 [EN010141/DR/6.2]**).

12.6.49 It is unclear what has been used to infill these former pit and pond features but could be of reworked natural origin or materials derived from farming activities.

12.6.50 The abandoned Sandy to Kelmarsh oil pipeline crosses East Park Sites A and B in a west-northwest to east-southeast alignment. It is understood that the pipeline has been cleared of product, has been air filled and capped.

Neighbouring Land Use/Nearby Contaminative Activities

12.6.51 East Park Sites A, B, C, D, the cable routes between sites B to C and C to D and the grid connection to Eaton Socon substation are located within an agricultural area to the north-west of St Neots. Other than a poultry farm which

is located at Sunny Farm at 50m northwest of East Park Site A, no contaminative activities have been identified in the immediate surroundings. Sunny Farm is located on the north-western bank of the Pertenhall Brook (i.e. on the opposite bank to the Site) and is operated under an Integrated Pollution Prevention Control Environmental Permit from the EA. The Site is not overlying superficial deposits that extend under this Farm. It is considered unlikely to adversely impact the Site. Previous pollution incidents recorded by the Environment Agency have all been pre-2000 and are all classed as category 3 (minor) impact. It is considered these will not present any residual risk to the Scheme.

Potential Receptors

12.6.52 Potential receptors to adverse impacts from ground contamination during the construction, operational and decommissioning phases phase include construction workers, operational staff and Site visitors, nearby users of the adjacent industrial and commercial premises, groundwater underlying the Site (Secondary Aquifers, where present) Huntingdon River Gravels, surface water flowing within the River Kym (which confluences with the River Great Ouse), Pertenhall Brook, Duloe Brook and various drains crossing the Site.

Future Baseline

12.6.53 In the absence of the Scheme, it is considered there would be a continued usage of a large proportion of the Site for intensive agricultural usage. This, together with predicted increase in frequency and intensity of rainfall events could lead to compaction of soils in winter months, deterioration of the soil matrix and lead to a release of soil carbon. During crop cycles, intensive agricultural practices can lead to increased runoff, soil erosion and leaching of contaminants from the isolated areas of expected made ground. The Scheme may help to reduce soil erosion and run off and provide an overall increase in protection of the soil matrix. Measures to prevent soil erosion and runoff during construction are included within the oSWMP.

12.7 Embedded Mitigation and Enhancement Measures

Embedded Mitigation

Construction Phase

12.7.1 The assessment takes account of embedded mitigation measures which would serve to avoid, reduce or minimise impacts. An **outline Construction Environmental Management Plan** (oCEMP) **[EN010141/DR/7.3]** has been prepared as part of the application for development consent. If the DCO is granted, this oCEMP will be developed into a final Construction Environmental Management Plan (CEMP) once a contractor is appointed. The final CEMP(s) produced for any phase of the Scheme will be in substantial accordance with this oCEMP, as set by a Requirement of the **draft DCO [EN010141/APP/3.1]**, and approved by the relevant local planning authorities prior to construction. The following relevant embedded mitigation measures are proposed as part of the oCEMP:

- Works during the construction phase would include the construction of a main compound within East Park Site D with satellite construction compounds located within other areas. The compound area would house modular office and welfare facilities. All foul sewage generated from welfare facilities will be collected within a sealed system to be uplifted and tankered for disposal/treatment at a suitably licensed off-site facility.
- Any required fuel and chemical storage would be housed appropriately and bunded. Refuelling would be limited to designated refuelling areas and a suitably stocked spill-kit will be retained within the compound areas as part of a standard construction compound requirement.
- The horizontal direction drill (HDD) process requires the use of bentonite as a lubricant for the drill bore. The use of the material will be carefully controlled to avoid a breakout and/or spillage from tanks and plant at the drive shaft. A ‘Frac-Out Contingency Plan’ will be provided by the Principal Contractor in advance of the work starting. The drilling fluid returns will be monitored to ensure no inadvertent leaks, and if there are any

discrepancies identified, the Frac-Out Contingency Plan will be implemented. Bentonite will be recycled during the HDD process and will be disposed of as a controlled waste during and following the completion of drilling activities. Appropriately bunded storage containers will be provided at both HDD launch and reception sites to contain any bentonite slurry arisings.

- Dust suppression will be undertaken across the Site during dry and windy conditions.
- Good housekeeping measures will be adopted across the Site during construction to reduce potential impacts of litter, dust and debris generation.
- Confined space entry best practices will be adopted whereby any staff entering confined spaces will have been provided suitable training and will wear gas alarms for continuous ground gas monitoring (as a precaution) during confined space entry.
- An Environmental Incident Management and Pollution Prevention Plan (EIMP) will be prepared that sets out a structured response framework for fuel or chemical spills, unexpected contamination events, and pollution control measures to prevent impacts on watercourses and groundwater.
- An Unexpected Contamination Protocol (UCP) will be prepared as part of the final CEMP that details the procedures for risk assessment, reporting, remediation and verification (in accordance with LCRM) should any unexpected contamination be discovered during the construction phase.
- A UXO Management Plan will be prepared prior to construction commencing and adhered to. A site-specific UXO awareness briefing will be given to all operatives. In certain areas as defined by the UXO Management Plan, an Intrusive Magnetometer Survey of all pile locations and excavations down to the maximum bomb penetration depth will be undertaken. A UXO Specialist will be available at all times during the construction phase to monitor works as required.
- Appropriate buffers will be applied during construction to the existing utilities services crossing the Site. Services should be surveyed prior to

construction, and exclusion measures adopted where necessary (e.g. fencing) or sensitive working methods implemented.

- Where below ground infrastructure is to be constructed, groundwater management and dewatering practices would be adopted where groundwater is encountered. Any wastewater that is produced during the construction phase from activities such as dewatering, will be disposed of in accordance with relevant legislation and should not be discharged directly to surface or foul drains without appropriate licences in place.

12.7.2 The following additional documents have been prepared as part of the application for development consent:

- Provision of silt traps and similar within the vicinity of nearby surface watercourses as per the **outline Surface Water Management Plan** (oSWMP) **[EN010141/DR/7.13]**.
- A final Soil Management Plan will be prepared in substantial accordance with the **outline Soil Management Plan [EN010141/DR/7.9]** containing site-specific measures to be adopted to protect soils during construction.
- The alignment and depth of the decommissioned oil pipeline within East Park Site A and B will be confirmed prior to construction and an appropriate offset incorporated in the final Scheme design that avoids piling works for the solar array mounting structures above the decommissioned pipeline. This is secured by the **outline Construction Environmental Management Plan [EN010141/DR/7.3]**.

Operational Phase

12.7.3 The following embedded mitigation measures are provided within the **outline Operation Environmental Management Plan** (oOEMP) **[EN010141/DR/7.5]** that has been prepared as part of this application for development consent. If the DCO is granted, this oOEMP will be developed into a final Operational Environmental Management Plan (OEMP) once a contractor is appointed. The final OEMP will be in substantial accordance with this oOEMP, as set by a Requirement of the **draft DCO [EN010141/APP/3.1]**,

and approved by the relevant local planning authorities prior to operation. The following relevant embedded mitigation measures are proposed:

- The storage of fuels or chemicals and cleaning agents required during the operational phase will be limited to cleaning agents, fuel for equipment, fuel for diesel generators to provide power work areas, and above ground diesel and ad-blue tanks/fuel tanks for re-fuelling Site plant. Fuel storage would be housed appropriately and bunded, refuelling would be limited to designated re-fuelling areas.
- Cleaning agents and any hazardous materials will be stored in a suitable bunded location on Site and will be returned to this location in properly sealed containers at the end of each working day.
- Equipment and spill kits will be provided to contain and clean up any spills to minimise the risk of pollutants entering watercourses.
- Where there are instances of either fuel, oil or solvents being stored temporarily on Site, these containers will all be stored within bunded areas located a minimum of 10m from watercourses or site drainage system to prevent leaching of contaminants and covered where possible, to prevent the accumulation of rainwater and to prevent accidental damage.
- Equipment to be regularly inspected to ensure that damage or leaks are identified early, and repairs are made, or equipment is replaced.
- An EIMP will be produced prior to operation commencing and will be reviewed and updated regularly by the Site Manager. Training will be provided to site workers as part of the induction processes and will be updated as necessary. The plan will contain information relating to the location of spill kits and any sensitive receptors, as well as the procedure for incident response.
- An oSWMP has been prepared that sets out measures for site wide management of surface water, rainfall run off, groundwater and site drainage.
- Soil management measures in line with the principles of the approved Soil Management Plan for construction will be set out in the OEMP. The

surface water drainage strategy will ensure drainage measures prevent erosion and protect soil structure.

- An **outline Battery Safety Management Plan [EN010141/DR/7.10]** has been prepared that sets out measures for fire safety, amongst others if there was a fire incident. This control document is to be secured by the DCO.
- The drainage strategy for the Battery Energy Storage System (BESS) includes collection of surface water from areas of hardstanding which will be retained within an on-site lined pond with a sluice gate at its outfall. This sluice gate will be automatically closed if there is an incident (for example, a fire) which may derive potentially polluted run-off. The Outline Surface Water Management Plan **[EN010141/DR/7.13]** outlines proposals to provide bunding at the perimeter of the compound (both for Option 1 and 2) to contain any fire water runoff within the area.

Decommissioning Phase

12.7.4 The following embedded mitigation measures are provided within the **outline Decommissioning Environmental Management Plan** (oDEMP) **[EN010141/DR/7.6]** and will be implemented during the Decommissioning Phase. If the DCO is granted, this oDEMP will be developed into a final Decommissioning Environmental Management Plan (DEMP) once a contractor is appointed. The final DEMP will be in substantial accordance with the oDEMP, as set by a Requirement of the **draft DCO [EN010141/APP/3.1]**, and approved by the relevant local planning authorities prior to decommissioning works. The following relevant embedded mitigation measures are proposed:

- A temporary compound area on the Scheme will be constructed to service the decommissioning phase. Akin to the construction phase, the compound area would house modular office and welfare facilities on heavy duty matting. This will be removed upon completion of the decommissioning works.

- All reasonably practicable measures will be undertaken to prevent the mobilisation and deposition of sediment from decommissioning activities to any existing water courses. Any major decommissioning works will be minimised during heavy precipitation and carried out during dry months where possible. Silt fencing and where appropriate, filter strips will be utilised to trap and filter run off from excavation works which includes the removal of foundations for the substation and BESS compound, removal of the below ground parts of the solar photovoltaic support frames, works to cable trenches and in relation to access roads.
- Equipment and spill kits will be provided to contain and clean up any spills to minimise the risk of pollutants entering any watercourses. Where there are instances of either fuel, oil or solvents being stored temporarily on Site, these containers will be stored within bunded areas and covered where possible, to prevent the accumulation of rainwater and to prevent accidental damage. Additional precautions would be taken during plant operations in any areas where there is storage of fuels or chemicals.
- An Environmental Incident Management and Pollution Prevention Plan (EIMP) will be prepared that sets out a structured response framework for fuel or chemical spills, unexpected contamination events, and pollution control measures to prevent impacts on watercourses and groundwater.
- A UCP will be prepared as part of the final DEMP that details the procedures for risk assessment, reporting, remediation and verification should any unexpected contamination be discovered during the decommissioning phase.
- Dust suppression will be undertaken across the Site during dry and windy conditions.
- Good housekeeping measures will be adopted across the Site during construction to reduce potential impacts of litter, dust and debris generation.
- Provision of silt traps and similar within the vicinity of nearby surface watercourses as per the **outline Surface Water Management Plan** (SWMP) **[EN010141/DR/7.13]**.

- Stockpiling of excavated materials will be in designated areas away from watercourses and sensitive receptors.
- The storage of fuels or chemicals required during the decommissioning phase will be limited to diesel generators to provide power to the compound area and above ground diesel and ad-blue tanks/fuel tanks for re-fuelling Site plant. Such fuel storage would be housed appropriately and bunded, refuelling would be limited to designated re-fuelling areas and a suitably stocked spill-kit will be retained within the compound areas as part of a standard construction compound requirement.
- Soil management measures in line with the principles of the approved Soil Management Plan for construction will be set out in the final DEMP.
- Where below ground infrastructure is to be decommissioned and removed, groundwater management and dewatering practices would be adopted where groundwater is encountered. This may include a series of cut-off trenches and pumping employing best engineering practices.

12.8 Assessment of Likely Impacts and Effects

12.8.1 This section presents the likely effects of the Scheme during the construction, operational and decommissioning phases. The assessment of effects takes account of the potential impacts on each receptor following the implementation of the embedded mitigation measures set out in Section 12.7.

Construction Phase

Sensitivity of Receptors

12.8.2 The sensitivity of the receptors during the construction phase, with reference to Table 12.14, are summarised below. Professional judgement has been applied within the assessment and in particular, for receptors that have not been included within the guidance (such as utilities etc.).

Table 12.14 Sensitivity of Identified Receptors During Construction Phase

Receptor	Phases (C, O, D)*	Sensitivity	Comment
Ground workers and construction workers during the preparatory and construction phases	C&D	Low to Medium	Low – foundations for BESS and transformers mainly comprising concrete pads. Medium - excavation of cabling, jointing chambers and basement for control room
Existing Site Users of Adjacent Land	C, O &D	Low to High	High – members of public using Public Right of Ways crossing the Scheme, scattered residences nearby. Low – adjacent industrial and farming premises.
Groundwater (superficial)	C&D	Low to Medium	Low: Superficial deposits Underlying the Scheme are absent in various areas including parts within the areas in the south of East Park Sites A, B and C. Medium: Alluvium, Glaciofluvial deposits, river terrace deposits, diamicton and Oadby Member. The Scheme is not located within a Source Protection Zone.
Groundwater (bedrock)	C&D	Low	The Oxford Clay Formation is an unproductive aquifer.

Surface waters	C&D	Medium to Low	Under the Water Framework Directive (assessed in 2019): Medium: The River Kym, Duloe Brook, Pertenhall Brook and Colmworth Brook is classed as having a moderate ecological classification and a poor chemical quality. Low: The remaining watercourses (and field drains) have not been classified under the WFD.
Property/building	C&D	High	Utilities traversing the Site including high-pressure gas pipes, waterpipes, oil pipeline and overhead power and telephone lines.
	O	Low	No buildings or infrastructure to be decommissioned/demolished to enable development construction. Adjacent industrial and farming premises. Building foundations may be present on the site of where former buildings have been demolished including the former Beaver's Park located within the southwestern area of East Park Site A.
Ecology/Ecosystems	C O & D	Low to Medium	Site is located within arable agricultural land. There are no Sites designated as of local or national ecological importance within the Scheme. East Park Sites A, D and the Connection Route are located within a SSSI impact risk zone for designated sites located within the Scheme surroundings. Aquatic ecology is referenced in Surface Water section above.

**C: Construction Phase; O: Operational Phase; D: Decommissioning Phase*

Potential Impacts on Identified Receptors During Construction Phase

12.8.3 Taking account the embedded mitigation measures, the potential impact on these receptors during the construction phase is considered as low to negligible. Significant adverse impact to construction is not expected.

Potential Impacts on Human Health During Construction (includes groundworks)

12.8.4 Construction workers could be exposed to limited contamination within very localised areas associated with infilled pits, ponds and in the location of former buildings where made ground may be present. Potential exposure routes are via inhalation, ingestion and/or dermal contact with contaminated soils, soil dusts, water and/or ground gases. The potential for ground gas generation is, however, considered as low.

12.8.5 A UCP will be prepared as part of the final CEMP that details the procedures for risk assessment, reporting, remediation and verification (in accordance with LCRM) should any unexpected contamination be discovered during the construction phase.

12.8.6 As part of best practice, any entry to confined spaces will be subject to appropriate protection measures, any staff entering confined spaces will have been provided suitable training and will wear gas alarms for continuous ground gas monitoring (as a precaution) during confined space entry.

12.8.7 Preparatory and construction works, particularly during ground disturbance activities, is likely to result in the generation of dust and debris in the absence of mitigation measures. Preparatory and construction works, will, however be completed in accordance with a CEMP which will include dust suppression measures to be employed during potential dust generating activities including disturbance and excavation of soils. Potential residual contaminants within the made ground may be present although significant quantities are not considered likely.

12.8.8 Construction worker receptors are considered to be of **low to medium** sensitivity. When the incorporated embedded mitigation measures are implemented, the likelihood of their exposure to residual contamination is low with a magnitude of impact as **small.** The significance of effect is **minor to negligible**.

12.8.9 Neighbouring users have a **low to high** receptor sensitivity**.** When the incorporated mitigation measures are implemented, the likelihood of such residual contamination being present, and exposure of neighbouring users considered as unlikely with a magnitude of impact as **negligible.** The significance of effect is **minor to negligible**.

12.8.10 The main construction compound will be located on East Park Site D to be present for the full 30-month construction phase. Smaller satellite compounds will be placed within other areas of the Scheme at various times during progression of the construction programme. The compounds will be situated upon a new heavy duty temporary matting. Such a feature will break the migration pathway between any made ground and it is expected that the compound facilities (office, welfare etc.) would be constructed either from modular units which reside on a frame or legs rising them above ground level or out of shipping containers. The resultant void-space between the floor and ground level acts as a venting void which would dilute and disperse any carbon dioxide and methane if present.

12.8.11 The construction compounds are temporary and would be removed following the completion of the construction phase.

12.8.12 The sensitivity of the construction workers within the construction compounds are **low** and likelihood of exposure of any residual contaminants to human health within the construction compounds during the construction phase is unlikely. The resulting magnitude of impact is **negligible**. The significance of effect is **negligible**.

12.8.13 The overall Human Health effect is therefore **not significant.**

Potential Impact on Controlled Waters

12.8.14 Significantly impacted soils and/or perched water are not expected and if in the unlikely event is present, would be highly localised and may either be subject to removal or remedial treatment as required. The sensitivity of groundwater receptors is **medium** within the south-eastern area of the Site (overlying the Oadby Formation, River Terrace Gravels, Glaciofluvial deposits

or alluvium, all of which, are a Secondary A aquifers) and **low** where glacial till resides or superficial deposits are absent with soils going straight onto bedrock of the Oxford Clay, both of which are classed as unproductive aquifers.

12.8.15 With the implementation of embedded mitigation, the likelihood of a contaminant linkage being present to groundwater is low. The resulting magnitude of impact is **small** within the south-eastern area of the Site (overlying the Oadby Formation, River Terrace Gravels, Glaciofluvial deposits or alluvium, all of which, are a Secondary A aquifers) and **small** where glacial till resides or superficial deposits are absent with soils going straight onto bedrock of the Oxford Clay, (both of which are classed as unproductive aquifers). This equates to a corresponding **minor to negligible** significance of effect.

12.8.16 The sensitivity of the River Kym, Duloe Brook, Colmworth Brook and Pertenhall Brook aquatic ecosystem is **medium** with the remaining watercourses and field drains not specifically being classified under the WFD and therefore classed as **low**.

12.8.17 During construction works there is potential for the generation and off-Site loss of silty or otherwise contaminated run-off following exposure of Site soils. Mitigation measures incorporated within the oCEMP and oSWMP to manage surface run-off during construction through use of best available techniques will be adopted.

12.8.18 Mitigation measures to prevent the generation of dust and debris will also be employed during construction as part of the oCEMP. With consideration of the embedded mitigation including a CEMP, the likelihood of exposure of contaminants to the surface watercourses from the Site during the construction phase impacts is low. This, alongside a **small** magnitude of impact to surface watercourses results in **minor to negligible** effect and hence is **not significant**.

12.8.19 The overall significance in relation to the construction phase and risks to controlled waters is considered as **not significant** when required materials management, and design measures within the oCEMP are applied.

Potential Impacts on Property and Utilities

12.8.20 There are no buildings to be demolished as part of the preparatory works for the Scheme although there is the potential for encountering former building foundations and rubble, particularly within the vicinity of the former Beaver's Park in East Park Site A. Potential impacts with respect to property are therefore negligible.

12.8.21 Appropriate standoffs will be provided to existing Site services as required and approved by the services providers. The oil pipeline (which has been decommissioned and capped off in situ) will be surveyed and an appropriate standoff will be applied. This will be secured in the **Design Parameters and Principles Statement [EN010141/DR/7.1]**.

12.8.22 The foundation solution for the BESS and associated buildings is proposed as construction over a concrete pad foundation. Concrete strip foundations may be adopted for the centralised inverters and transformers. Both foundation types will extend into the ground of a maximum depth of 0.5mbgl. The East Park substation control building will have a basement level. It is, expected that a piled foundation solution will not be required for the buildings although short piles will be used to anchor the photovoltaic (PV) panel frames into the ground, with concrete blocks to be placed above ground in Areas of Archaeological Constraint. Owing to the lack of contamination expected and the short piles proposed, it is not considered that a piling risk assessment will be necessary to assist with development of a suitable piling methodology. The sensitivity of the property/buildings during the construction phase is **low**. The potential likelihood for this contaminant linkage to be realised is considered as unlikely to low with resulting **negligible to small** magnitude of impact and **negligible** adverse effects and hence **not significant.**

Potential Impacts on Ecology and Ecosystems

12.8.23 There are no designated Sites of local or national ecological importance within the boundary of the Scheme. East Part Site A, D and the grid connection to Eaton Socon substation is located within a SSSI impact risk zone for the Swineshead Wood, St Neots Common and Little Paxton Wood SSSI, the receptor sensitivity is therefore considered to be **low to medium** With embedded mitigation including provision of dust and debris suppression, control of silty and otherwise contaminated water, the magnitude of impact is **small** with likelihood of contaminant linkage as unlikely. The overall significance of effect is **minor to negligible** effect and hence not significant. The potential impacts to aquatic ecosystems have been considered above under controlled waters.

Overall Significance of Construction Phase

12.8.24 The overall significance in relation to the construction phase for all potential receptors, when embedded mitigation measures is accounted for, is considered **not significant**.

Operational Phase

Sensitivity of Receptors

12.8.25 The sensitivity of the receptors during the operational phase, with reference to Table 12.15, are summarised below. Professional judgement has been applied within the assessment and in particular, for receptors that have not been included within the guidance (such as utilities etc.).

Table 12.15 Sensitivity of Identified Receptors During Operational Phase

Receptor	Sensitivity	Comment
Site Workers during the operational phase	Low	Disturbance of ground during operational phase is expected to be negligible. Ground will be covered with hardstanding and buildings across BESS. Areas of soft landscaping are expected to be used only infrequently.

Existing and future site users of adjacent land	Low to High	High – members of public using Public Rights of Way crossing the Scheme. Low – adjacent industrial and farming premises
Groundwater (superficial)	Low to Medium	Low - Superficial deposits Underlying the Scheme are absent in various areas including parts within the areas in the south of East Park Sites A, B and C. Medium - Alluvium, Glaciofluvial deposits, river terrace deposits, diamicton and Oadby Member. The Scheme is not located within a Source Protection Zone.
Groundwater (bedrock)	Low	The Oxford Clay Formation is an unproductive aquifer
Surface waters	Medium to Low	Under the Water Framework Directive (assessed in 2019): Medium: The River Kym, Duloe Brook, Pertenhall Brook and Colmworth Brook is classed as having a moderate ecological classification and a poor chemical quality. Low: The remaining watercourses (and field drains) have not been classified under the WFD.
Property/building	Low	Modular build/containerised structures to be constructed as part of the development. Sites of archaeological importance to be left undisturbed during operation of development.
Ecology/Ecosystems	Low to Medium	Site is located within arable agricultural land. There are no Sites Designated as of local or national ecological importance within the Scheme. East Park Sites A, D and the connection Route are located within a SSSI impact risk zone for designated sites located within the Scheme surroundings Aquatic ecology is referenced in Surface Water section above.

Potential Impacts on Human Health During Operation (includes maintenance workers plus other future Site users)

12.8.26 The potential for exposure pathways to future site users would be unlikely due to the presence of hardstanding or buildings within the BESS, the substation

and the storage, operations and maintenance building as the hardstanding and buildings will naturally provide a physical barrier to any underlying contaminants if present. The exposure potential within the other areas of the Site is classed as low likelihood.

12.8.27 Widespread contamination including ground gas sources are not expected. A basement to house the switch gear and to take the feed from the associated underground cabling is proposed in conjunction with construction of the control room and the substation. It is not considered ground gases will need assessment nor gas protection installed as the BESS, substation and the storage, operations and maintenance building are to be located outside of any potential areas of made ground and highly organic natural soils. Future maintenance workers will need to comply with Site rules and protocols which will include the requirements of suitable training and the use of ground gas alarms for any confined space entry. The sensitivity of future site users is **low** with a **small** magnitude of impact and an overall **negligible** effect to future Site workers and hence is **not significant**.

12.8.28 Site users including members of the public using the PROW and adjacent residents **(high sensitivity)** and workers within the farmland **(low sensitivity)** and adjacent industrial areas (**low sensitivity)** are considered unlikely to be exposed to contamination during operation of the Scheme. With the resultant magnitude of impact as **negligible**, the resultant effect is **minor to negligible** and hence is **not significant.**

12.8.29 The overall significance in relation to the operational phase and risks to human health is considered as **not significant**.

Potential Impact on Controlled Waters During Operational Phase

12.8.30 Hardscaping cover (as concrete or compacted gravel) across the operational areas of the Site and drainage via a surface water drainage system would be included as part of the detailed development design to reduce infiltration of rainwater through the ground. This will be secured through the oSWMP.

12.8.31 The drainage strategy for the BESS includes collection of surface water from areas of hardstanding which will be retained within an on-site lined pond with a sluice gate at its outfall. This sluice gate will be automatically closed if there is an incident (for example, a fire) which may derive potentially polluted run-off. This will be secured through the oSWMP.

12.8.32 All foul water from both the construction compounds and BESS (incorporating offices and welfare) will be captured and temporarily stored within a sealed cess pit and uplifted and removed off-Site by tanker at appropriate intervals.

12.8.33 The Site is not located within a Source Protection Zone, there are no groundwater abstractions for drinking water within the surrounding area.

12.8.34 The sensitivity of groundwater and surface water receptors is **low to medium**. The potential for the exposure pathway would be a low likelihood, with resulting **small to negligible** magnitude of impact and **minor to negligible** significance of effect and hence **not significant**.

12.8.35 The overall significance in relation to the operational phase and risks to controlled waters is considered as **not significant**.

Potential Impacts on Property During Operational Phase

12.8.36 Made ground is only considered to be potentially present in association with infilled ponds and pits and the likelihood of any associated ground gases are from sources of only a low generation potential. The proposed buildings associated with the BESS are outside of any mapped areas of natural soils that are highly organic and any areas where infilled ponds and pits have been identified as part of the desk based geo-environmental assessment. A geotechnical assessment will include an assessment to establish the appropriate Design Sulphate (DS) Class and Aggressive Chemical Environment for Concrete (ACEC) classification with respect to concrete to inform the final Scheme design. The receptor sensitivity is **low** and exposure is considered as unlikely on this basis with a resulting **negligible** magnitude of impact and **negligible** adverse effect and hence **not significant**.

12.8.37 Samples of soil and groundwater will be obtained for analysis of pH and sulphate as part of the geotechnical site investigation works to inform the detailed design. The results of which, will be assessed to determine the required ACEC and DS for below ground concrete. This will be adopted by the designer to ensure the appropriate concrete specification is used. The sensitivity of the buildings constructed as part of the Scheme is **low.** The likelihood of a contaminant linkage arising through concrete failure through inappropriate specification is unlikely with a **negligible** magnitude of impact and resulting **negligible** significance of effect and hence **not significant**

12.8.38 No potentially significant sources of ground gasses have been identified and the welfare, offices and storage as part of the BESS, the substation, and the storage and operations building will be sited outside of any potentially ground gassing sources of low generation potential i.e. infilled ponds and pits and naturally organic superficial deposits.

12.8.39 The sensitivity of the buildings constructed as part of the Scheme are **low**. As there is no significant gassing source, ingress and accumulation of ground gas into the Scheme is considered as unlikely, with a resulting **small** magnitude of impact and **negligible** significance of effect and hence **not significant**.

Potential Impacts on Ecology and Ecosystems

12.8.40 Potential contaminant impacts on surface waters and their associated ecosystems, have been considered above, under ‘controlled waters’. The assessment of the WFD surface water bodies draining the Site concluded that the Site will not have a negative impact upon the ecological, chemical or hydrological status of the water bodies, meaning that any potential knock-on impacts to the SSSIs will be negligible.

Overall Significance of Operational Phase

12.8.41 The overall significance in relation to the operational phase for all potential receptors is considered as **not significant**.

Decommissioning Phase

Sensitivity of Identified Receptors

12.8.42 The sensitivity of the receptors during the decommissioning phase, with reference to Table 12.16, are summarised below.

Table 12.16 Sensitivity of Identified Receptors During Decommissioning Phase

Receptor	Sensitivity	Comment
Site workers during the decommissioning phases	Low to Medium	Low - Removal of aboveground infrastructure only with no demolition; Medium– removal of belowground infrastructure and backfilling. Demolition of foundations including strip foundations and concrete pads.
Existing and future site users of adjacent land	Low to High	Low – adjacent industrial premises High – members of public using Public Right of Way crossing the scheme
Groundwater (superficial)	Low to Medium	Low - Superficial deposits Underlying the Scheme are absent in various areas including parts within the areas in the south of East Park Sites A, B and C. Medium - Alluvium, Glaciofluvial deposits, river terrace deposits, diamicton and Oadby Member. The Scheme is not located within a Source Protection Zone.
Groundwater (bedrock)	Low	The Oxford Clay Formation is an unproductive aquifer.
Surface waters	Medium to Low	Under the Water Framework Directive (assessed in 2019): Medium: The River Kym, Duloe Brook, Pertenhall Brook and Colmworth Brook is classed as having a moderate ecological classification and a poor chemical quality. Low: The remaining watercourses (and field drains) have not been classified under the WFD.
Property/building	Low	Only buildings and infrastructure associated with the Scheme to be decommissioned and dismantled/ demolished. All concrete pads and other belowground infrastructure to be

		removed during decommissioning phase. Sites of archaeological importance to be left undisturbed during construction of the development.
Ecology/Ecosystems	Medium	Site is located within arable agricultural land. There are no Sites Designated as of local or national ecological importance within the Scheme. East Park Sites A, D and the connection Route are located within a SSSI impact risk zone for designated sites located within the Scheme surroundings. Aquatic ecology is referenced in Surface Water section above.

Potential Impacts on Human Health During Decommissioning

12.8.43 Decommissioning works, particularly during ground disturbance activities, is likely to result in the generation of dust and debris in the absence of mitigation measures. Decommissioning works will, however, be completed in accordance with a DEMP. This will include dust suppression measures to be employed during potential dust generating activities including ground disturbance and removal of pad foundations as part of decommissioning works. As part of standard confined space protection measures, any staff entering confined spaces will have been given suitable training and will wear gas alarms.

12.8.44 The likelihood of such residual contamination being present and exposure to workers and neighbouring users occurring when the incorporated mitigation measures are implemented is considered as low. The sensitivity of the workers during the decommissioning phase is **low to medium** and the sensitivity of adjacent site users is **low to high.** The resulting magnitude of impact is **negligible** with the overall significance of effect is **minor to negligible** and hence **not significant**.

Potential Impact on Controlled Waters

12.8.45 The sensitivity of controlled waters is ***low to medium*** and likelihood of contamination occurring to surface waters and superficial groundwater during the decommissioning phase and when the incorporated mitigation measures are implemented is considered as low. The potential of a contaminant linkage to be present to the bedrock aquifer is unlikely. The resulting magnitude of impact is **small** with the overall significance of effect being **minor to negligible** and hence **not significant**.

Potential Impacts on Property

12.8.46 The decommissioning phase will include the removal of all buildings/structures and above ground infrastructure and making any below ground infrastructure safe. The sensitivity of the buildings/enclosed structures to be disturbed during the decommissioning phase is **low**.

12.8.47 With implementation of embedded mitigation measures, the likelihood of a contaminant linkage being present to property, infrastructure and ground stability during the decommissioning phase is unlikely with the resulting magnitude of severity as **negligible** and the overall significance of effect as **negligible** and hence **not significant**.

Potential Impacts on Ecology and Ecosystems

12.8.48 Potential impacts on the surface watercourses and associated ecosystems, have been considered above, under controlled waters.

Overall Significance of Decommissioning Phase

12.8.49 The overall significance in relation to the decommissioning phase and risks to human health, impacts on controlled waters, property and stability plus ecology/ecosystems when embedded mitigation accounted for, is considered **not significant**.

12.9 Additional Mitigation, Enhancement and Monitoring

12.9.1 The above assessment takes account of the mitigation measures, which encompass physical measures incorporated within the design of the Scheme.

12.9.2 Additional mitigation would be employed during the construction and operational phases to ensure that the environmental effects of the Scheme are reduced, and that standard industry best practice is employed. The additional mitigation measures which would be adopted are as described below.

Construction Phase

12.9.3 No significant adverse impacts and effects for the construction phase of the development have been identified with regards to land contamination. The Site would, however, be subject to intrusive investigations targeted only within areas of proposed ground disturbance to inform the current ground conditions and contamination status prior to the commencement of construction activities within those areas. These would include:

- Ground investigation with targeted entries within areas of potential made ground (located at former building footprints/infilled ponds or pits) if excavation/construction is to take place over these areas. Ground investigation to be undertaken where ground disturbance is to be undertaken within the vicinity of the abandoned oil pipeline.
- Collection of representative soil samples of made ground and any oil-impacted ground (where encountered) to confirm the chemical composition and allow an appropriate risk assessment to be undertaken.
- Collection of representative soil samples from ground bearing strata to provide recommendations on the use of sulphate resistant concrete.
- Assessment of ground conditions and collection of representative samples for geotechnical analysis to advise on potential foundation design.

12.9.4 In accordance with the UCP as secured under the final CEMP, if unexpected contamination is encountered during construction, an assessment would be

undertaken. The findings of such an assessment would be used to inform a Remediation Strategy and verification implementation plan, if deemed required. This would then be prepared in accordance with the DCO and agreed with by the Local Authority and other regulators/consultees prior to the recommencement of the construction activities.

12.9.5 The geotechnical investigation would be carried out following grant of the DCO in accordance with the design brief produced by an experienced engineer. This will include an assessment to establish the appropriate foundation options and Design Sulphate (DS) Class and Aggressive Chemical Environment for Concrete (ACEC) classification with respect to concrete to inform the final Scheme design.

12.9.6 Deep excavations are not considered to be required under current development proposals and would be limited to the cable jointing chambers along the grid connection, piling of the solar array mounting structures, and control buildings. No significant sources of ground gas have been identified; however, it will be pertinent to use gas meters as part of standard construction practices prior to entering below ground or confined spaces.

12.9.7 No monitoring of groundwater or surface water is considered warranted beyond the requirements as specified within the EIMP, UCP and oSWMP.

Operational Phase

12.9.8 No significant adverse impacts and effects for the operational phase of the development have been identified with regards to land contamination. No additional mitigation measures above and beyond those incorporated and implemented during the construction phase to protect the development, end users and local environment from risks associated with land contamination would be necessary during the operational phase.

Decommissioning Phase

12.9.9 No additional mitigation measures are required during the decommissioning phase.

12.10 Residual Effects

12.10.1 Table 12.17 details an assessment of residual significant effects for each contaminant linkage once applied, and enhanced mitigation and monitoring is incorporated.

Table 12.17 –Residual Effects

Receptor and Sensitivity	Potential Impact	Likelihood of Contaminant Linkage (with embedded mitigation)	Impact Magnitude / Severity	Embedded Mitigation	Additional Mitigation	Residual Effect	Significance in EIA terms
Construction Phase							
Groundworkers and Construction Workers **(Low to Medium)**	Exposure to contamination associated with localised deposits of made ground	Unlikely	**Small**	Provision of a CEMP including protocol to deal with unexpected contamination with associated assessment to be undertaken in accordance with LCRM OCEMP is provided as **[EN010141/DR/7.3]** Confined Space entry training and mitigation. Use of gas alarms as required. UXO awareness training to be provided to all construction personnel. UXO clearance to be adopted within part of East Park Site B where UXO risks are classed as 'medium and where ground disturbance is proposed.	Site investigation including assessment of soils only where disturbance of made ground (infilled ponds and pits, and site of former buildings) plus within vicinity of the abandoned oil pipe is to be undertaken. Investigation and assessment to be undertaken in association with LCRM.	**Minor**	**Not Significant**

Existing users of adjacent land **(Low to High)**	Exposure to dust and debris which could include made ground soils if present	Unlikely	**Negligible**	CEMP to include dust and debris suppression measures.		**Minor to Negligible**	**Not Significant**
Groundwater (superficial) **(Low to Medium)**	mobilisation of any residual contamination in localised made ground/leaks or spills during construction	Low Likelihood	**Small**	. CEMP to include EIMP should a pollution incident occur and protocol to deal with unexpected contamination with associated assessment to be undertaken in accordance with LCRM. OCEMP is provided as **[EN010141/DR/7.3]**	Site investigation including assessment of soils and perched groundwater only where disturbance of made ground (infilled ponds and pits, and site of former buildings) plus within vicinity of the abandoned oil pipe is to be undertaken. Investigation and assessment to be undertaken in association with LCRM	**Minor**	**Not Significant**
Groundwater (bedrock) **(Low)**	mobilisation of any residual contamination in localised made ground, leaks or spills during construction	Low Likelihood	**Small**	CEMP to include EIMP should a pollution incident occur during construction phase.	Site investigation including assessment of soils and perched groundwater only where disturbance of infilled ponds and pits, and site of former buildings plus within vicinity of the abandoned oil pipe is to be undertaken. Investigation and assessment to be	**Negligible**	**Not Significant**

					undertaken in association with LCRM.		
Surface waters (River Kym, Duloe Brook, **(Medium)** Pertenhall Brook South Brook, Honeydon Brook, Colmworth Brook Field drains **(Low)**	mobilisation of any residual contamination in localised made ground, surface run off of silts or leaks or spills during construction.	Low Likelihood	**Small**	CEMP to include measures to control and monitor the generation of silty and otherwise contaminated run-off and dusts/debris to enter watercourses. CEMP to include environmental emergency protocol should a pollution incident occur during construction phase.		**Minor to Negligible**	**Not Significant**
Property/ Building **(Low)**	Foundation failure Contact with existing Utilities	Unlikely	**Small to Negligible**	Appropriate standoffs to be applied to existing site services and approved with service providers. Oil pipeline to be surveyed and an appropriate stand off applied.	Site investigation to include sufficient geotechnical information to inform development design. Concrete classification of belowground concrete to be assessed and determined based on findings during site investigation.	**Negligible**	**Not Significant**
Ecology/ Ecosystems **(Low to Medium)**	mobilisation of any residual contamination or dusts via	Low Likelihood	**Small**	See Surface waters above.		**Minor to Negligible**	**Not Significant**

	surface run-off or windblown dust			Small areas of woodland to be left undisturbed during construction. Likelihood of impact to off-Site SSSI is small			
Operational Phase							
Future Site Users **(Low)**	Exposure to contamination associated with localised deposits of made ground	Unlikely	**Small**	Disturbance of ground during the operational phase is expected to be minimal. The BESS, substation, and the storage, operations and maintenance buildings will be covered with hardstanding and buildings across all operational areas. Areas of soft landscaping between PV generating station and provided as part of development proposals are expected to be used only infrequently. The BESS, substation, and the storage, operations and maintenance buildings will not be located within an area where made ground and/or organic soils are anticipated. Confined space entry protocols to be used		**Negligible**	**Not Significant**

				where required by future site maintenance operators working within belowground entries.			
Existing and future users of adjacent land **(Low to High)**	Exposure to dust and debris which could include made ground soils if present	Unlikely	**Negligible**	Emergency protocol in OEMP for any chemical or fuel spillages.		**Minor to Negligible**	**Not Significant**
Groundwater (superficial) **(Low to Medium)**	leaks or spills during construction, mobilisation of any contaminants within made ground if present	Low Likelihood	**Small**	Emergency protocol in OEMP for any chemical or fuel spillages.	Site investigation to confirm composition and chemistry of made ground soils only if construction is proposed over areas where made ground is anticipated.	**Minor to Negligible**	**Not Significant**
Groundwater (bedrock) **(Low)**	leaks or spills during construction, mobilisation of any contaminants within made ground if present	Low Likelihood	**Negligible**	Emergency protocol in OEMP for any chemical or fuel spillages.	Site investigation to confirm composition and chemistry of made ground soils only if construction is proposed over areas where made ground is anticipated.	**Negligible**	**Not Significant**
Surface waters (River Kym, Duloe Brook, Pertenhall Brook, Colmworth Brook	leaks or spills during construction, mobilisation of any	Low Likelihood	**Small**	SWMP to be adopted to monitor surface watercourses, Emergency protocol in OEMP for any chemical or fuel spillages.		**Minor to Negligible**	**Not Significant**

(**Medium**) (South Brook, Honeydon Brook, Field drains (**Low**)	contaminants within made ground if present						
Property/ Building **(Low)**	Foundation failure/ sulphate attack on concrete	Unlikely	**Negligible**		Site investigation to include sufficient geotechnical information to inform development design. Concrete classification of belowground concrete to be assessed and determined based on findings during site investigation.	**Negligible**	**Not Significant**
Ecology/ Ecosystems **(Medium)**	leaks or spills during construction, mobilisation of any contaminants within made ground if present	Low Likelihood	**Small**	SWMP to be adopted to monitor surface watercourses, Emergency protocol in OEMP for any chemical or fuel spillages.		**Minor**	**Not Significant**
Decommissioning Phase							
Ground Workers during the decommissioning	Exposure to contamination associated with localised	Low Likelihood	**Small**	DEMP to include provisions with dealing	Site investigation including assessment of soils only where disturbance of made	**Minor to Negligible**	**Not Significant**

and demolition phases **(Low to Medium)**	deposits of made ground			with unexpected contamination	ground (infilled ponds and pits, and site of former buildings) plus within vicinity of the abandoned oil pipe is to be undertaken. Investigation and assessment to be undertaken in association with LCRM.		
Existing and future users of adjacent land **(Low to High)**	Exposure to dust and debris which could include made ground soils if present	Low Likelihood	**Negligible**	DEMP to include measures to suppress generation of dust and debris.		**Minor to Negligible**	**Not Significant**
Groundwater (superficial) **(Low to Medium)**	mobilisation of any residual contamination in localised made ground/ leaks or spills during decommission	Low Likelihood	**Small**	DEMP to include provisions with dealing with unexpected contamination and protocol for any leaks or spills		**Minor to Negligible**	**Not Significant**
Groundwater (bedrock) **(Low)**	mobilisation of any residual contamination in localised made ground/ leaks or spills during decommission	Unlikely	**Small**	Groundwater within the bedrock is unlikely to be affected during decommissioning. DEMP to include provisions with dealing with unexpected contamination and protocol for any leaks or spills		**Negligible**	**Not Significant**

Surface waters (River Kym, Duloe Brook, **(Medium)** Pertenhall Brook South Brook, Honeydon Brook, Colmworth Brook Field drains **(Low)**	mobilisation of any residual contamination in localised made ground/ leaks or spills during decommission/ surface run-off of soils/silts	Low Likelihood	**Small**	DEMP to include measures to prevent silty or otherwise contaminated water run-off and control measures to deal with pollution incidents. Stockpiles of materials and wastes to be appropriately managed to prevent the generation of dusts and debris.		**Minor to Negligible**	**Not Significant**
Property/ building **(Low)**	None – buildings and infrastructure to be removed as part of decommissioning works	Unlikely	**Negligible**	Buildings and infrastructure to be removed/decommissioned in accordance with DEMP.		**Negligible**	**Not Significant**
Ecology/ Ecosystems **(Medium)**	mobilisation of any residual contamination in localised made ground/ leaks or spills during decommission/surface run-off of soils/silts	Low Likelihood	**Small**	DEMP to include measures to prevent silty or otherwise contaminated water run-off and control measures to deal with pollution incidents. Stockpiles of materials and wastes to be appropriately managed to prevent the generation of dusts and debris		**Minor to Negligible**	**Not Significant**

12.11 Cumulative Effects

12.11.1 The cumulative assessment has considered the potential for cumulative environmental effects as a result of the Scheme in combination with the cumulative schemes set out in **ES Vol 2 Appendix 4-5: Short List of Other Development [EN010141/DR/6.2]**.

12.11.2 The cumulative schemes and an associated assessment for ground conditions is reported in **ES Vol 1 Chapter 17: Cumulative and In-Combination Effects [EN010141/DR/6.1]** and concludes that there would be no significant cumulative effects as a result of the Scheme in combination with any cumulative scheme. The residual effects of the Scheme would not be changed as a result of any of the cumulative schemes.

12.11.3 An assessment of the in-combination effects arising from the interaction and combination of different residual environmental effects of the Scheme affecting a single receptor is reported in Section 17.5 of **ES Vol 1 Chapter 17: Cumulative and In-Combination Effects [EN010141/DR/6.1]**.

12.12 Conclusions

12.12.1 This chapter has considered the potential impacts that may arise at sensitive receptors during the construction, operational and decommissioning phases of the Scheme.

12.12.2 A baseline assessment has been completed to qualitatively characterise the identified source-pathway-receptors. This assessment has concluded that isolated areas of made ground may be expected where pits and ponds have been infilled and there were former isolated buildings which have since been demolished. The potential for significant contamination is not anticipated. Where natural soils contain high levels of organic material (such as alluvium), these may give rise to ground gas although the generation potential is low.

12.12.3 A site investigation of limited scale involving intrusive works will be undertaken under LCRM only where ground disturbance is to take place. This will include areas where infilled ponds and pits plus foundations and/or demolition rubble are identified from the presence of former buildings and within the vicinity of the abandoned oil pipeline.

12.12.4 A UCP will be prepared as part of the final CEMP that details the procedures for risk assessment, reporting, remediation and verification (in accordance with LCRM) should any unexpected contamination be discovered during the construction phase.

12.12.5 The required embedded mitigation measures to be employed during the construction, operational and decommissioning phases are set out in the oCEMP, oOEMP and oDEMP. These are secured by the DCO and will be subject to approval by the Local Planning Authorities.

12.12.6 Through the implementation of embedded and additional mitigation measures there would be no significant residual effects on human health, controlled waters, ecological receptors or buildings/ground stability during the construction phase.

12.12.7 The Scheme is to be operated using appropriate environmental management protocols and on the basis of the development as proposed, ***no significant*** residual effects on human health, controlled waters, ecological receptors or building/ground stability during the operational phase have been identified.

12.12.8 Overall, the effects are predicted to be not significant with respect to ground conditions and contamination and no significant residual effects have been identified.

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