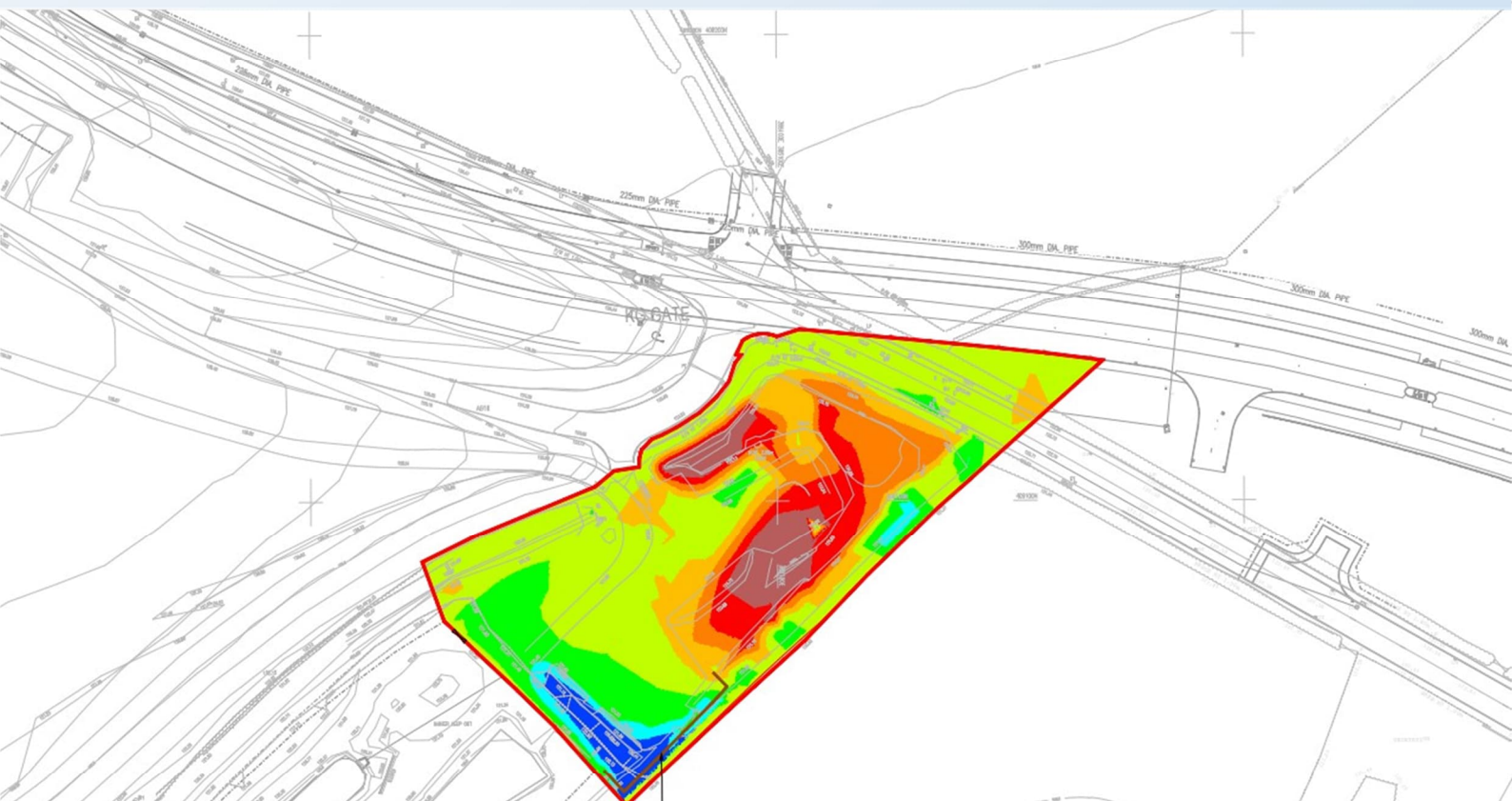




Russells South Heywood (Residential)
Limited

SOUTH HEYWOOD PRIMARY SUBSTATION

Remediation Strategy





Russells South Heywood (Residential) Limited

SOUTH HEYWOOD PRIMARY SUBSTATION

Remediation Strategy

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70114074

OUR REF. NO. 12275

DATE: JUNE 2025

WSP

8 First Street

Manchester

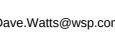
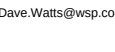
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BGS RADON REPORT JUNE 2025

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GENERAL LIMITATIONS

1 INTRODUCTION

1.1 AUTHORISATION

WSP was instructed by Russells South Heywood (Residential) Limited (Russells) to provide a Remediation Strategy for a proposed Primary Substation on a parcel of land located off Queen Elizabeth Way, South Heywood, Greater Manchester, OL10 2TB (henceforth known as the 'site').

A site location plan is presented as **Figure 1** in **Appendix A**.

1.2 PROPOSED DEVELOPMENT AND PLANNING

It is understood that the proposed development (planning application reference 16/01399/HYBR) will comprise a strategic 32MVA primary substation which will serve the wider South Heywood scheme and a small food store.

Russells has submitted planning application reference 25/00014/REM for the enabling works to be undertaken in advance of sub-station construction, which will comprise '*bulk earthworks, removal of inert material, diversion of surface water drains and alternations to culverts and watercourses*'. The *WSP Enabling Works Proposed Site Plan* (reference SHOW-WSP-PSS-ENAB-DR-D-0002 (P13)), dated January 2024 is provided in Appendix A.

Planning application reference 16/01399/HYBR has attached to it planning condition 15, which requires a remediation strategy to be submitted prior to any development on the site.

1.3 OBJECTIVE

The objective of this report is to present the remediation strategy for the proposed development, to address the requirement of 16/01399/HYBR planning Condition 15. The remediation strategy describes the work required to mitigate potential risks to human health and controlled waters from contamination in soil and groundwater and ground gases, based on the proposed development.

1.4 PREVIOUS REPORTS

The following reports have been produced in relation to ground conditions at the site:

- WSP, *Preliminary Risk Assessment*, South Heywood Primary Substation report reference 70114074/12124 dated 04 October 2023 ('2023 Phase 1'). This report utilised information within Groundsure Enviro+Geo Insight Report reference GS-DVV-9OG-UAL-YQI, dated 29 August 2023.
- WSP, *Interpretative Ground Investigation Report* reference 70114074-GIR-001(1) (issue 3), dated January 2025 ('2025 IGIR'). This was based on a ground investigation undertaken in November 2023 and has been submitted to Rochdale Council in relation to the enabling works planning application.

The information presented herein is based on data presented in the above reports, which should be consulted if further detail is required.

1.5 CONFIDENTIALITY

This report is addressed to and may be relied upon solely by the following:



Russells South Heywood (Residential) Limited
13 Westpoint Enterprise Park
Clarence Avenue
Trafford Park
Manchester
M17 1QS

This report shall not be relied upon or transferred to any other parties without the express written authorisation of WSP. No responsibility will be accepted where this report is used in its entirety, on in part, by any other party.

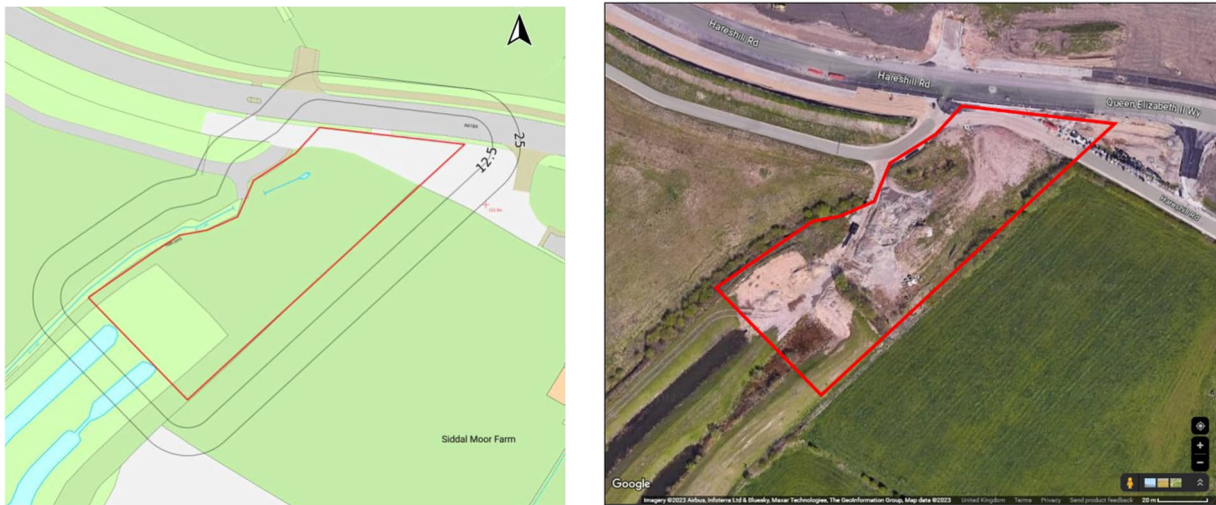
Information provided by other is taken in good faith as being accurate. WSP cannot accept liability for any deficiencies in third party information. General limitations are presented in Appendix C.

2 SITE INFORMATION

2.1 SITE LOCATION AND DESCRIPTION

The site lies to the south of the recently constructed Queen Elizabeth Way, approximately 1.7km south of Heywood town centre and covers an area of approximately 0.8 hectares. A site location plan is provided as Figure 1 in Appendix A. Extracts from an Ordnance Survey base plan and an aerial image are provided in Figure 2-1 below. A Site Layout Plan is provided as Figure 2 in Appendix A.

Figure 2-1 – OS Base plan and Aerial Overview of the Site



An approximately 10m wide grassed verge, with an elevation in the region of 123.5mAOD (above Ordnance Datum), separates Queen Elizabeth Way from the main body of the site. This verge overlies the former Hareshill Road, which was truncated to allow the construction of Queen Elizabeth Way.

South of the verge is a grassed mound with some shrubs/small trees, which is approximately 2-2.5m above the level of the verge. The mound extends approximately 40-50m southwest into the site, where levels fall steeply to the southwest to a slightly lower level than that of the verge/Queen Elizabeth Way (circa 122mAOD).

An extract from the WSP Enabling Works Existing Contour Plan (reference SHOW-WSP-PSS-ENAB-DR-D-0105 (P01)) dated December 2024 is provided below in Figure 2-2, which illustrates changes in ground level across the site.

An approximately 1.5m deep ditch, flanked by small trees/shrubs, runs along the north-western boundary. This ditch occurs in two sections; a short length close to Queen Elizabeth Way, and a section which commences from approximately the midpoint of the boundary and continues southwest beyond the site. The ditch carries a watercourse which flows to the southwest and is culverted below part of the site and Queen Elizabeth Way.

Beyond the north-western boundary lies a single-track road and an area of undeveloped land, surfaced with tall grass/shrubs, which rises northwards. This land is a former landfill site, known as Hareshill Farm (Ref: EPR/CB3738AC), which was licenced to receive inert waste from 2012.

3 GROUND AND GROUNDWATER CONDITIONS

3.1 GROUND CONDITIONS

Published geological mapping records the following.

- Glacial Till (clays, silts, sands and gravels) beneath the northern part of the site.
- Head deposits (poorly sorted sands and gravels with localised lenses of clay, silt or peat) over the Glacial Till in the southern part of the site.
- A thin band of Lacustrine Deposits (sands and gravels) along the eastern limits of the site.
- The underlying bedrock of the Pennine Lower Coal Measures Formation (Mudstone, Siltstone, Sandstone which contain coal seams).

The mound over the northern area is approximately 2.5-3.0m higher than the original site level that is evident in the south, with Made Ground beneath the mound extending to depths of up to 4.9m (unproven at >4.0m in places) below the top of the mound. To the south of the mound, Made Ground is reported to depths of 0.7-1.5m bgl (below ground level).

The mounded Made Ground comprises generally a sandy silt / silty gravel with variable anthropogenic inclusions of brick, coal, ash, clinker, glass, metal, plastic, ceramic and cobbles and boulders of sandstone. An organic-rich layer was reported within the lower part of the Made Ground in several holes in the northern part of the mound and one in the south-east, which possibly comprises the original Made Ground prior to mounding. The Made Ground descriptions for exploratory holes south of the mound are similar to those for the mounded material.

The Made Ground is underlain by several metres of clay (soft to very stiff) and silt with occasional sand lenses / bands. This will likely offer some protection to the underlying bedrock aquifer from downward migration of mobile contamination. The underlying superficial and solid aquifers are considered to have a relatively low sensitivity to contamination.

3.2 GROUNDWATER CONDITIONS

Groundwater is resting at an elevation of approximately 120.5m AOD, with a possible slight hydraulic gradient towards the south. Migration of groundwater to beneath the site from the landfill to the northwest cannot be ruled out.

3.3 SOIL AND GROUNDWATER CONTAMINATION ASSESSMENT

Chemical analysis was undertaken on seven samples of the mounded Made Ground (from the northern part of the site), four samples of original Made Ground (from the southern part of the site) and two samples of natural soils from the southern part of the site. A review of the chemical results shows no appreciable difference between chemical concentrations across the soil sample types. Laboratory asbestos screening did not identify asbestos in any of the samples screened.

The 2025 IGIR concluded the following in relation to risks from soil and groundwater contamination to human health:

- No chemical concentrations above the generic assessment criteria (for a commercial use) were recorded within soil, indicating risk to future site users acceptably low.
- No asbestos was identified in tested soil samples. However, it should be noted that asbestos has the potential to be present within any Made Ground material.

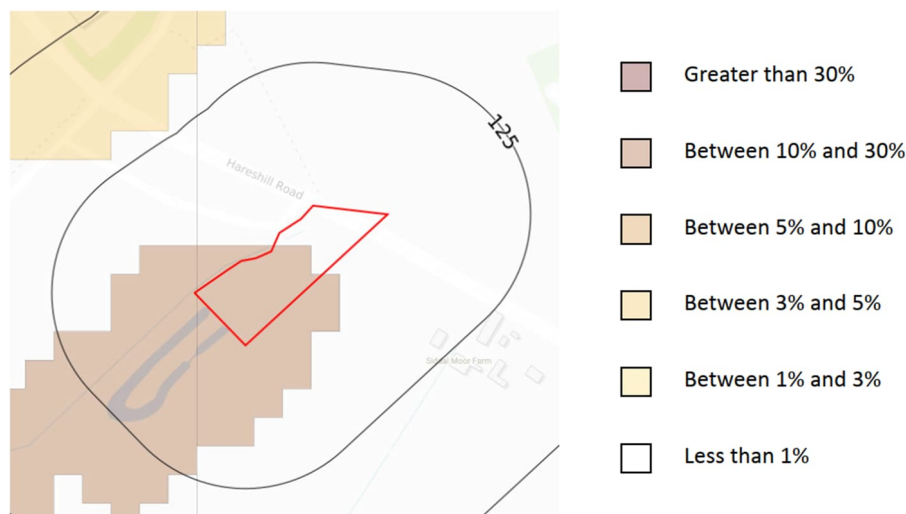
The three groundwater samples tested in the laboratory were taken from monitoring wells in the southern part of the site; the wells in the north did not contain sufficient water for sampling. Appreciable concentrations of ammoniacal nitrogen are noted in the groundwater sample from WS02 (in the centre of the site, in the area of an historical pond), with concentrations in WS03 and WS05 ((to the southwest) being lower by two orders of magnitude. A second round of groundwater sampling was undertaken within WS02 and the concentrations of ammoniacal nitrogen and other contaminants were comparable with the first round.

Whilst the groundwater concentrations of certain dissolved phase metals and ammoniacal nitrogen exceeded the screening criteria, the 2025 IGIR concluded risks to controlled waters were acceptably low.

3.4 RADON RISK

The Groundsure Report records the southern portion of the site as being within an area where the estimated proportion of properties likely to have a radon at or above the Action Level (200 becquerels per cubic metre) is elevated, at between 10% and 30%. This radon-affected area extends offsite to the west and south, as shown in Figure 3-1 and generally coincides with the location of the superficial Head Deposits; however, the geological strata to which the classification relates is not clear. The northern part of the site is in an area where less than 1% of properties are likely to have a radon at or above the Action Level.

Figure 3-1 – Extract from Radon Map in Groundsure Report



The 2025 IGIR recommended full radon protection measures for all new buildings on the site.

To confirm this requirement, WSP has purchased a British Geological Survey (BGS) *Radon Report: UK* (Report Id: BGS_343369/61218), dated 25 June 2025, which is provided in Appendix B. The *Radon Report* confirms full radon protection measures are required.

3.5 GROUND GAS RISK

Appreciably elevated methane and carbon dioxide concentrations were recorded in WS02 in the centre of the site; however, recorded gas flow rates in this monitoring well were negligible. Appreciable positive and negative flow rates were recorded in WS03 and WS05 in the south-western part of the site, with no apparent correlation between the readings in these two wells.

The 2025 IGIR concluded the following in relation to risks from hazardous ground gases:

- The site is classed as Characteristic Situation 3 (Moderate Risk), requiring appropriate and sufficient gas protection measures to be installed within buildings to protect future site users.
- Potential risks from accumulation of hazardous gases (methane and carbon dioxide) within excavations will need to be managed during redevelopment.
- Provision of full radon protective measures will likely provide sufficient mitigation against risks from carbon dioxide and methane, subject to the final building design and regulatory approval.

3.6 CONTAMINATION CONCLUSIONS

The 2025 IGIR concluded the following in relation to contamination and required remediation:

Remedial Requirements:

- Full radon protection measures will need to be installed in new structures. The measures need to be designed by a specialist.
- Hazardous ground gas protection measures are also required in new structures (Characteristic Situation 3). It is considered that the full radon protective measures would likely provide the required level of protection.
- The installation of ground gas / radon mitigation will need to be validated by an independent and suitably qualified party.

Other Considerations:

- Whilst specific remedial measures are not required in relation to soil contamination, development site staff need to be aware that contamination could be uncovered during ground works.
- The potential for ground gas accumulation within excavations during construction will need to be considered and addressed with appropriate monitoring / protective equipment.
- It would be prudent to complete a water pipeline assessment to ascertain the need for barrier pipe if new water pipes are required and will be laid in existing Made Ground.
- A hazardous waste assessment will be required if the mounded Made Ground is to be taken offsite to landfill.
- Re-use of site won materials should be managed through the preparation of a Materials Management Plan (MMP).

3.7 PROPOSED CUT AND FILL

The enabling works involves a cut and fill exercise to level the site, which will involve using mounded Made Ground to fill in the lower areas, as indicated by an extract from the WSP cut and fill drawing provided in Figure 3-2.

Russells has informed WSP that the contractor undertaking the enabling works will be responsible for preparing a CL:AIRE DoWCoP (definition of waste code of practice) compliant Materials Management Plan for the earthworks.

The contractor will also be responsible for disposing of excess materials generated by the cut and fill exercise in accordance with waste duty of care legislation.

Figure 3-2 – Extract from WSP Proposed Isopachyte Analysis drawing reference SHOW-WSP-PSS-ENAB-DR-D-0103 (November 2024)



ELEVATIONS TABLE			
NUMBER	MINIMUM ELEVATION	MAXIMUM ELEVATION	COLOR
1	-2.578	-1.500	
2	-1.500	-1.000	
3	-1.000	-0.500	
4	-0.500	0.000	
5	0.000	0.500	
6	0.500	1.000	
7	1.000	1.500	
8	1.500	2.351	

4 REMEDIATION STRATEGY

4.1 INTRODUCTION

This Section describes the remedial measures required to mitigate the potential risks associated with the enabling works and the proposed development, which are summarised in Section 3.

4.2 GENERAL MEASURES REQUIRED DURING GROUND WORKS

4.2.1 AWARENESS AND GOOD HYGIENE PRACTICE

Any maintenance or construction personnel involved in the enabling works should be made aware of the potential for encountering contamination (including asbestos) within Made Ground materials and adopt appropriate management and mitigation measures in accordance with best practice (e.g. use of appropriate personal protection equipment when handling or working within Made Ground materials or other potentially contaminated soils).

A high standard of basic hygiene should be maintained on site and a non-smoking and eating policy within the working area should be adopted, with designated clean areas set aside for these activities.

4.2.2 GAS MONITORING WITHIN EXCAVATIONS

Given the potential for degrading organic matter and previously detected gas concentrations, appropriate hazardous ground gas monitoring will need to be undertaken for personnel working within excavations, in accordance with the relevant legislation and working practice guidance.

4.2.3 DUST SUPPRESSION

Whilst asbestos has not been recorded in Made Ground it could be present and as such it is recommended that site practices are adopted to minimise dust generation from the enabling works / construction works; e.g., monitoring dust levels and damping down during dry weather if required.

4.2.4 UNIDENTIFIED CONTAMINATION

Should potentially contaminated material (e.g. odorous/discoloured) be encountered during enabling works / construction works, examination and possible further testing of the soils should be completed by a competent person to assess the risk to health and safety of site workers and the environment.

The Remediation Strategy will be modified according to the outcome of the risk assessment, for agreement with the local authority, and documented in the verification report.

4.3 RADON GAS PROTECTION MEASURES

Buildings due to be constructed on the site need to be provided with full radon gas protection measures in accordance with the following Buildings Research Establishment (BRE) publication:

- *Guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment projects)*, reference BR211, 2023 edition. This guidance provides practical details for domestic and non-domestic buildings and supports building regulations in England.

The guidance includes the following key requirements:

- Radon protection measures to be designed in accordance with BR211 2023 edition - the final detail will depend on foundation and floor slab design.
- It is the designer's responsibility to develop final details suitable for individual buildings (page 11 of the guidance).
- A membrane of minimum 400micron (400µm) thickness to reduce the potential for damage during installation works (page 16 of the guidance)
- A high standard of workmanship (page 16 of the guidance) is required if radon-protective measures are to be successful. This will require good site working practices to prevent damage to membrane during installation.
- Inspection, testing and reporting of the installation (verification) of the radon protection measures should be carried out by a third-party inspection company independent of the protection system installation contract (page 35 of the guidance).

4.4 HAZARDOUS GROUND GAS PROTECTION MEASURES

Gas protection measures according to Characteristic Situation 3 (moderate risk) are required in line with the following document:

- British Standard BS 8485:2015 *Code of practice for the design of protection measures for methane and carbon dioxide ground gases for new buildings*

The above standard uses a point score system to determine the appropriate level of protection. Table 4 of the guidance indicates 2.5 points are required to mitigate risks from CS3 conditions in a Type D building, to be achieved through a combination of structural barrier (floor slab), ventilation measures, and membrane.

Verification of the installation of hazardous ground gas protection measures should be undertaken in accordance with the requirements of CIRIA publication C735 *Good practice on the testing and verification of protection systems for buildings against hazardous ground gases* (2014).

The radon protection measures are likely to achieve the requisite number of points to achieve the necessary hazardous ground gas protection. The designer is responsible for ensuring the radon measures achieve the required level of protection in relation to hazardous ground gases.

The inspection, testing and reporting of the installation of the radon protection measures in accordance with BR211 (2023) will likely meet the requirements of CIRIA C735; however, it is the Contractor's responsibility to ensure this is the case and to keep all records for inclusion in the verification report.

4.5 MATERIALS MANAGEMENT

The cut and fill works shall be undertaken in accordance with a CL:AIRE DoWCoP compliant Materials Management Plan (MMP) to demonstrate that material movements have been undertaken in a way that does not cause a risk to human health or the environment in the final development. The Contractor is responsible for preparing the MMP and associated MMP verification report.

4.6 SUITABILITY OF IMPORTED MATERIALS

If soils or recycled aggregate is imported to the site the Contractor will need to demonstrate it is chemically suitable for its intended use. As a minimum, this material shall be obtained from a

reputable supplier shall be confirmed to be free from asbestos containing materials, asbestos fibres and visual/olfactory evidence of chemical contamination (i.e. no odours/staining/discoloration).

4.7 WASTE SOIL DISPOSAL

Based on the cut and fill drawing (extract presented in The following will be the responsibility of the earthworks / construction Contractor(s):

- Appropriate soil chemical / asbestos testing to enable a hazardous waste assessment to be undertaken for excess soils due to be taken to landfill, in accordance with the Environment Agency's Technical Guidance WM3 *Guidance on the classification and assessment of waste* (1st Edition v1.2 GB)
- Keeping an accurate and complete record of materials taken offsite and their final destination, for inclusion in the Verification Report.

Figure 4-1) 972m³ of topsoil needs to be stripped and approximately 102m³ of excess material is expected to be generated. Excess soils will need to be disposed of at landfill or sent to a soil treatment facility.

The following will be the responsibility of the earthworks / construction Contractor(s):

- Appropriate soil chemical / asbestos testing to enable a hazardous waste assessment to be undertaken for excess soils due to be taken to landfill, in accordance with the Environment Agency's Technical Guidance WM3 *Guidance on the classification and assessment of waste* (1st Edition v1.2 GB)
- Keeping an accurate and complete record of materials taken offsite and their final destination, for inclusion in the Verification Report.

Figure 4-1 – Cut and Fill Volumes from WSP Proposed Isopachyte Analysis drawing reference SHOW-WSP-PSS-ENAB-DR-D-0103 (November 2024)

<u>CUT FILL ANALYSIS SUMMARY</u>				
WORKS ELEMENT	AREA (sq.m)	CUT (Cu.m)	FILL (Cu.m)	NET (Cu.m)
Primary substation	6479	2006	1904	102(Cut)
Topsoil (Assumed depth 150mm)				
Topsoil to be stripped	6479	972	0	972(Cut)

4.8 REMEDIATION VERIFICATION REPORTING

Following the completion of remedial works in accordance with this remediation strategy, a verification report shall be prepared using evidence compiled by the Contractor(s) and any other relevant parties. This information will need to include evidence to demonstrate the following:

- A programme of independent inspection and verification of the radon / ground gas protection measures was undertaken in accordance with the requirements of BR211 (2023) / CIRIA C735 (2014).

- Contamination was not encountered. Or if contamination was encountered, was appropriately characterised, risks assessed, and action taken to manage the contamination.
- Imported soil and / or recycled aggregate were obtained from reputable suppliers and were confirmed to be free of asbestos and visual / olfactory evidence of contamination.
- Excess soils were taken off site for re-use or disposed in accordance with all relevant legal requirements.

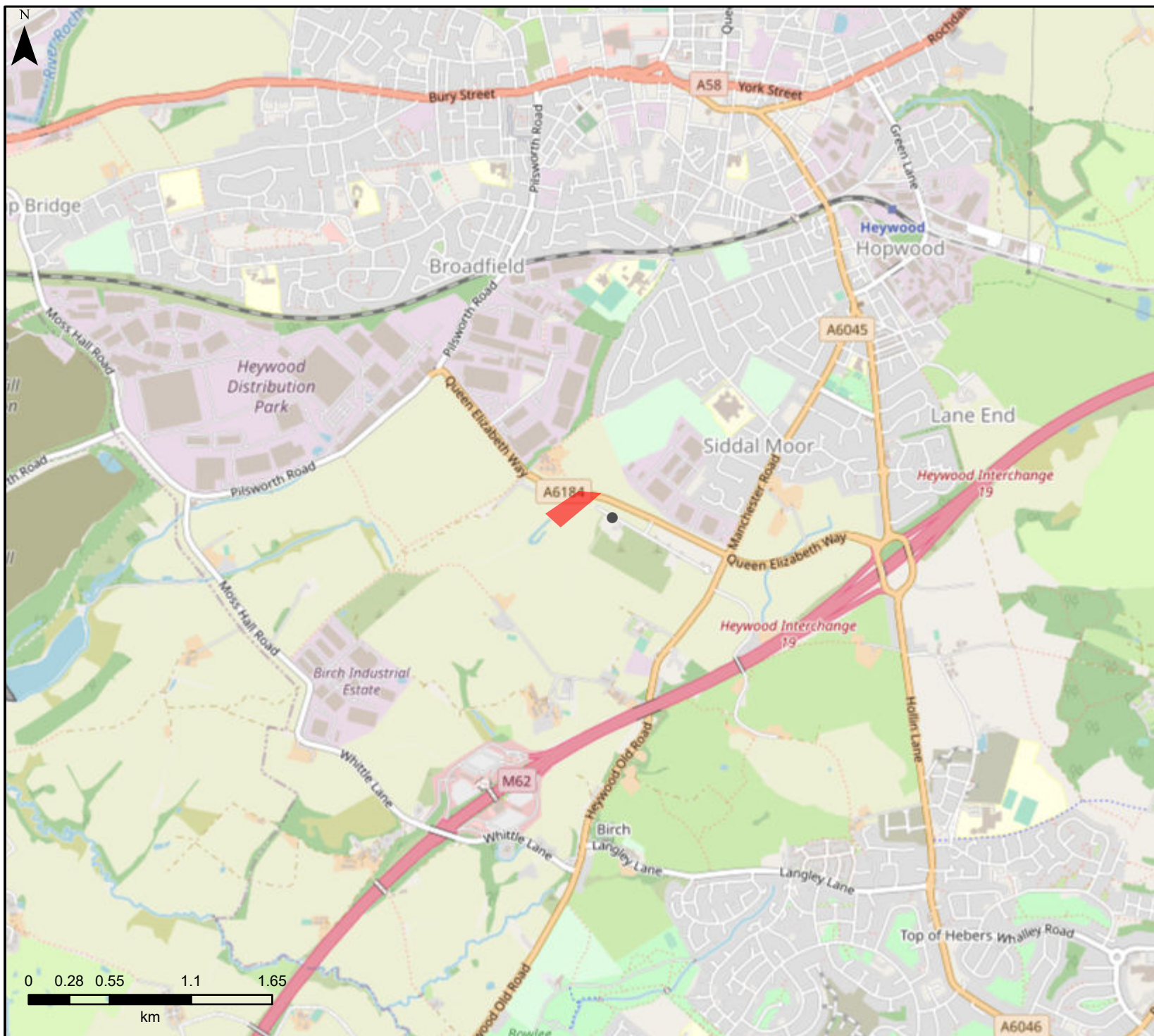
One party shall be responsible for compiling the validation report (usually the nominated environmental consultant); however, all parties have a responsibility to provide supporting information to be presented in the report.

The local authority will be required to review and approve the verification report to enable discharged of the relevant planning condition.

Appendix A

FIGURES





DO NOT SCALE

Legend :

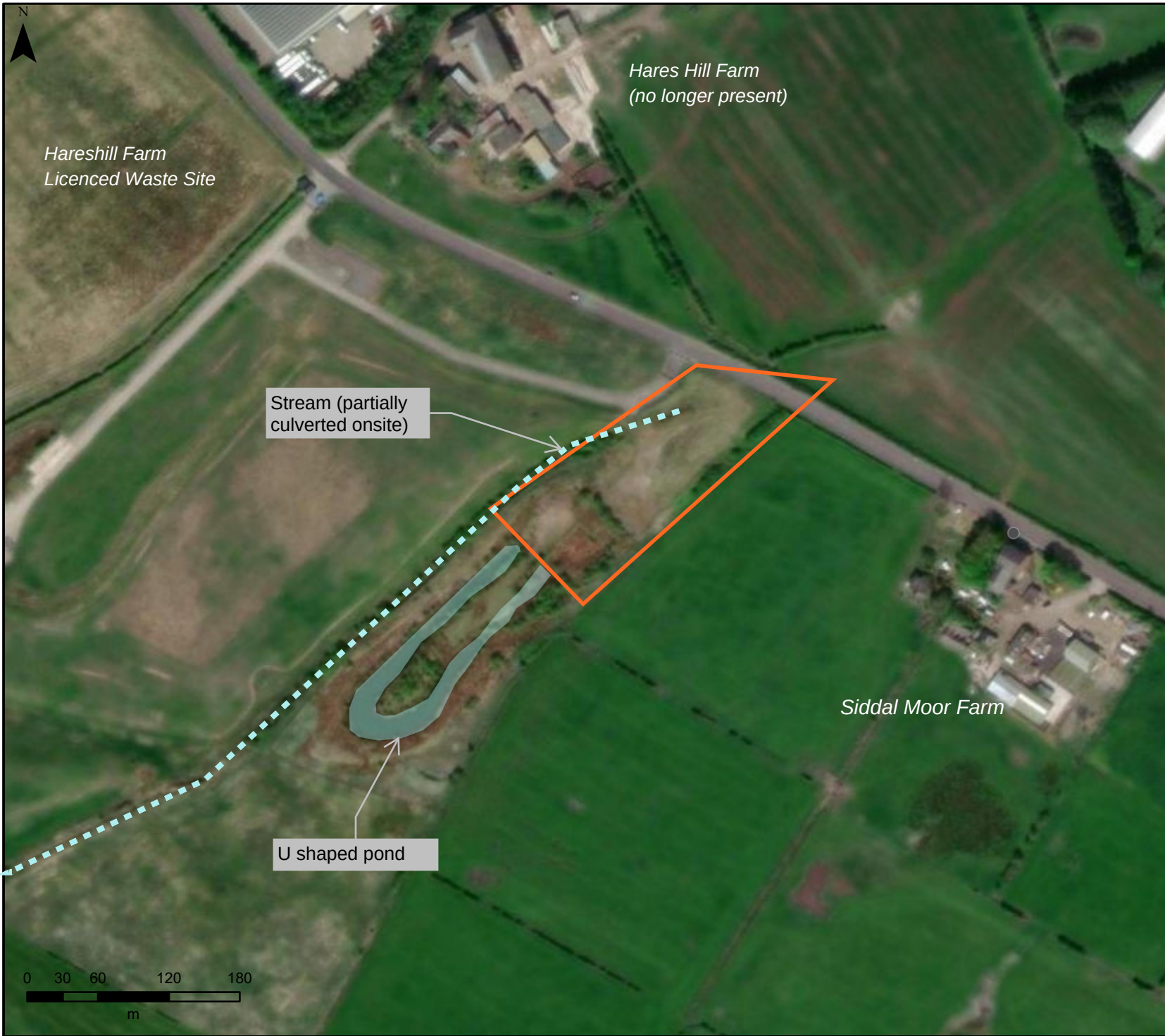
■ Site Location

70114074 South Heywood
Primary Substation

Figure 1 - Site Location Plan



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DO NOT SCALE

Legend :

70114074 South Heywood
Primary Subsation

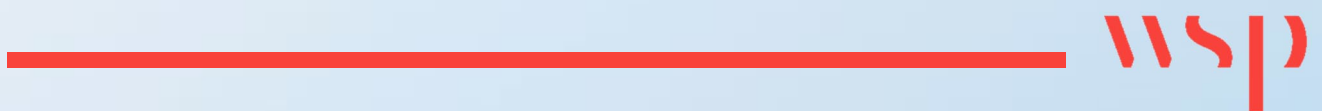
Figure 2 - Site Layout Plan



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Appendix B

BGS RADON REPORT JUNE 2025



Appendix C

GENERAL LIMITATIONS



REPORT LIMITATIONS - GROUND AND WATER

GENERAL

1. WSP UK Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.
2. Unless explicitly agreed otherwise, in writing, this report has been prepared under WSP UK Limited standard Terms and Conditions as included within our proposal to the Client.
3. Project specific appointment documents may be agreed at our discretion and a charge may be levied for both the time to review and finalise appointments documents and also for associated changes to the appointment terms. WSP UK Limited reserves the right to amend the fee should any changes to the appointment terms create an increase risk to WSP UK Limited.
4. The report needs to be considered in the light of the WSP UK Limited proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

PHASE 1 GEO ENVIRONMENTAL AND PRELIMINARY RISK ASSESSMENTS

Coverage: *This section covers reports with the following titles or combination of titles: phase 1; desk top study; geo environmental assessment; development appraisal; preliminary environmental risk assessment; constraints report; due diligence report; geotechnical development review; environmental statement; environmental chapter; project scope summary report (PSSR), program environmental impact report (PEIR), geotechnical development risk register; and, baseline environmental assessment.*

5. The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects responses may not have been received from all parties. WSP UK Limited cannot be held responsible for any disclosures that are provided post production of our report and will not automatically update our report.
6. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, WSP UK Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.
7. It should be noted that any risks identified in this report are perceived risks based on the information reviewed. Actual risks can only be assessed following intrusive investigations of the site.
8. WSP UK Limited does not warrant work / data undertaken / provided by others.

REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

INTRUSIVE INVESTIGATION REPORTS

Coverage: *The following report titles (or combination) may cover this category of work: geo environmental site investigation; geotechnical assessment; GIR (Ground Investigation reports); preliminary environmental and geotechnical risk assessment; and, geotechnical risk register.*

9. The investigation has been undertaken to provide information concerning either:
 - i. The type and degree of contamination present at the site in order to allow a generic quantitative risk assessment to be undertaken; or
 - ii. Information on the soil properties present at the site to allow for geotechnical development constraints to be considered.
10. The scope of the investigation was selected on the basis of the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.
11. For contamination purposes, the objectives of the investigation are limited to establishing the risks associated with potential contamination sources with the potential to cause harm to human health, building materials, the environment (including adjacent land), or controlled waters.
12. For geotechnical investigations the purpose is to broadly consider potential development constraints associated with the physical property of the soils underlying the site within the context of the proposed future or continued use of the site, as stated within the report.
13. The amount of exploratory work, soil property testing and chemical testing undertaken has necessarily been restricted by various factors which may include accessibility, the presence of services; existing buildings; current site usage or short timescales. The exploratory holes completed assess only a small percentage of the area in relation to the overall size of the Site, and as such can only provide a general indication of conditions.
14. The number of sampling points and the methods of sampling and testing do not preclude the possible existence of contamination where concentrations may be significantly higher than those actually encountered or ground conditions that vary from those identified. In addition, there may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.
15. The inspection, testing and monitoring records relate specifically to the investigation points and the timeframe that the works were undertaken. They will also be limited by the techniques employed. As part of this assessment, WSP UK Limited has used reasonable skill and care to extrapolate conditions between these points based upon assumptions to develop our interpretation and conclusions. The assumption made in forming our conclusions is that the ground and groundwater conditions (both chemically and physically) are the same as have been encountered during the works undertaken at the specific points of investigation. Conditions can change between investigation points and these interpretations should be considered indicative.
16. The risk assessment and opinions provided are based on currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values. Specific assumptions associated

REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

with the WSP UK Limited risk assessment process have been outlined within the body or associated appendix of the report.

17. Additional investigations may be required in order to satisfy relevant planning conditions or to resolve any engineering and environmental issues.
18. Where soil contamination concentrations recorded as part of this investigation are used for commentary on potential waste classification of soils for disposal purposes, these should be classed as indicative only. Due consideration should be given to the variability of contaminant concentrations taken from targeted samples versus bulk excavated soils and the potential variability of contaminant concentrations between sampling locations. Where major waste disposal operations are considered, targeted waste classification investigations should be designed.
19. The results of the asbestos testing are factually reported and interpretation given as to how this relates to the previous use of the site, the types of ground encountered and site conceptualisation. This does not however constitute a formal asbestos assessment. These results should be treated cautiously and should not be relied upon to provide detailed and representative information on the delineation, type and extent of bulk ACMs and / or trace loose asbestos fibres within the soil matrix at the site.
20. If costs have been included in relation to additional site works, and / or site remediation works these must be considered as indicative only and must be confirmed by a qualified quantity surveyor.

EUROCODE 7: GEOTECHNICAL DESIGN

21. On 1st April 2010, BS EN 1997-1:2004 (Eurocode 7: Geotechnical Design – Part 1) became the mandatory baseline standard for geotechnical ground investigations.
22. In terms of geotechnical design for foundations, slopes, retaining walls and earthworks, EC7 sets guidance on design procedures including specific guidance on the numbers and spacings of boreholes for geotechnical design, there are limits to methods of ground investigation and the quality of data obtained and there are also prescriptive methods of assessing soil strengths and methods of design. Unless otherwise explicitly stated, the work has not been undertaken in accordance with EC7. A standard geotechnical interpretative report will not meet the requirements of the Geotechnical Design Report (GDR) under Eurocode 7. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. The report is likely to represent a Ground Investigation Report (GIR) under the Eurocode 7 guidance.

DETAILED QUANTITATIVE RISK ASSESSMENTS AND REMEDIAL STRATEGY REPORTS

23. These reports build upon previous report versions and associated notes. The scope of the investigation, further testing and monitoring and associated risk assessments were selected on the basis of the specific development and land use scenario proposed by the Client and may not be appropriate to another form of development or scheme layout. The risk assessment and opinions provided are based on currently available approaches in the generation of Site Specific Assessment Criteria relating to contamination concentrations and are not considered to represent a risk in a specific land use scenario to a specific receptor. No liability can be accepted for the retrospective effects of any future changes or amendments to these values, associated models or associated guidance.



REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

- 24.** The outputs of the Detailed Quantitative Risk Assessments are based upon WSP UK Limited manipulation of standard risk assessment models. These are our interpretation of the risk assessment criteria.
- 25.** Prior to adoption on site they will need discussing and agreeing with the Regulatory Authorities prior to adoption on site. The regulatory discussion and engagement process may result in an alternative interpretation being determined and agreed. The process and timescales associated with the Regulatory Authority engagement are not within the control of WSP UK Limited. All costs and programmes presented as a result of this process should be validated by a quantity surveyor and should be presumed to be indicative.

GEOTECHNICAL DESIGN REPORT (GDR)

- 26.** The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. All the relevant information needs to be provided to allow for a GDR to be produced.

MONITORING (INCLUDING REMEDIATION MONITORING REPORTS)

- 27.** These reports are factual in nature and comprise monitoring, normally groundwater and ground gas and data provided by contractors as part of an earthworks or remedial works.
- 28.** The data is presented and will be compared with assessment criteria.



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