

ASC CONTRACTS LIMITED

Tallents Research Barn, Kimpton

Preliminary Risk Assessment (Land Contamination)

Job No: 263029

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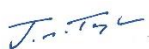
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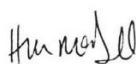
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1.0 INTRODUCTION

Site Proposals and Report Objectives

- 1.1 AA Environmental Limited (AAe) has been commissioned by ASC Contracts limited (the Client) to undertake a desk-top Preliminary Risk Assessment (PRA) to assess the land contamination risks for the proposed residential development of a parcel of agricultural farmland located at Tallents Research Farm, Hitchin, SG4 8EU. The site is centred at National Grid Reference TL 15972 17692 and is shown on the site location plan presented in Figure 1.
- 1.2 The site covers an approximate area of 1200 m² and is located approximately 1 km west of the village of Kimpton. The site comprises a parcel of managed grassland forming the south western corner of an agricultural field currently utilised as a horse paddock. The site is accessed via a gated trackway adjoining to the B652 bordering the site to the immediate south. The site is bound by the wider horse paddock to the north and east, with the access track forming the eastern boundary.
- 1.3 Planning permission 23/00094/FP was granted by North Hertfordshire Council for the erection of a three-bedroom dwelling with associated vehicular access, car parking, and a private residential garden. The approved layout is presented in Figure 2. Condition five requires the assessment of land contamination risks.

Condition 5

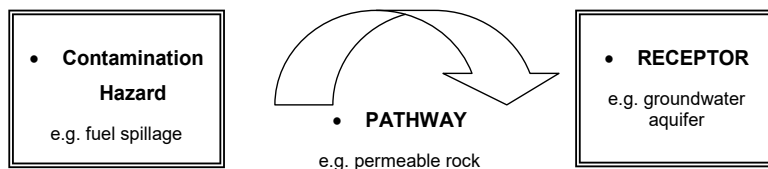
No development approved by this permission shall be commenced prior to the submission to, and agreement of the Local Planning Authority of a written preliminary environmental risk assessment (Phase I) report containing a Conceptual Site Model that indicates sources, pathways and receptors. It should identify the current and past land uses of this site (and adjacent sites) with view to determining the presence of contamination likely to be harmful to human health and the built and natural environment.

- 1.4 This report describes the current baseline and historical context of the site and risk assessment for the proposed redevelopment of the site. A Conceptual Site Model (CSM) is presented and the need for further assessment of the site determined, dependent on the presence of potential contaminant linkages. Potential environmental risks are identified and, if required, remediation and mitigation measures to alleviate those risks are presented.

Methodology

- 1.5 The following guidance, legislation and policy has been consulted to provide the basis of the assessment.
 - Part 2A of *The Environmental Protection Act 1990 (as amended)* is a legal framework introduced to identify and remediate contaminated land. *The Contaminated Land Statutory Guidance (2012)* issued by Department for Environment, Food and Rural Affairs (DEFRA) should be read in accordance with Part 2A;
 - British Standard (BS) *BS 10175 - Investigation of potentially contaminated sites. Code of Practice*; and
 - Environment Agency online *Land contamination: risk management (LCRM)* guidance. The guidance provides the technical framework for applying a risk management process when dealing with land affected by contamination.
- 1.6 The potential environmental impacts have been qualitatively assessed by considering the sensitivity of the site in relation to the geology, hydrogeology and general environment. The historical uses of the site have also been considered to inform the environmental risk assessment using contaminant-pathway-receptor-analysis.
- 1.7 Current guidance in the assessment of contamination risk advocates the use of a CSM, to establish connecting links between a contaminant source and a sensitive receptor, via an exposure pathway. An element of contamination, a receptor and a pathway can all exist independently. However, a risk is only present when all three elements are linked together so

a contaminant impacts upon a receptor via an exposure pathway, termed a contaminant linkage. Thus, the mere presence of a contamination hazard at a particular site does not necessarily imply the existence of associated risks. A contaminant linkage schematic is presented as follows.



- 1.8 If the contaminant and/or sensitivity of the receptor is such that significant harm can occur then the outcome is called a Significant Contaminant Linkage (SCL). In such circumstances, the level of contaminant or the available pathway must be modified in some manner to reduce the severity of the impact to an acceptable level. The detailed assessment methodology is set out in Appendix A.
- 1.9 Evaluation of the existing baseline environment has been assessed through a desk-based study and site walkover survey, considering the following sources of information:
- British Geological Survey (BGS) OpenGeoscience Geology of Britain Viewer (Solid and Drift) (Contains British Geological Survey materials © NERC 2026) accessed January 2026;
 - Soil Survey of England and Wales 1983. Soil Map of England and Wales 1:250,000;
 - Radon Interactive Map UK (www.ukradon.org) accessed January 2026;
 - Multi-Agency Geographic Information for the Countryside web site (www.magic.gov.uk) accessed January 2026;
 - Google Earth Satellite imagery and Street View (accessed January 2026); and;
 - Envirocheck Report and Historical Map Packs (purchased January 2026).

Project Limitations

- 1.10 The findings of this report are based upon information from a range of sources which are believed to be reliable. However, AAe do not guarantee the reliability or authenticity of the information taken from third-party data sets. Within any PRA Report a great emphasis is placed upon this data to represent complex ground conditions and quality and associated environmental liability. Accordingly, despite the report being developed in line with established industry guidance, there remains the possibility that some sources of environmental liability may not be identified.

2.0 PHYSICAL AND ENVIRONMENTAL SETTING

Site location and description

- 2.1 The site is situated within an open agricultural pastoral field currently utilised as a horse paddock. The site is bordered to the immediate south by the B652 running generally east- west. The site western boundary comprises a macadam access track connecting to the wider farmyard complex to the north and a residential dwelling located approximately 10 m west of the site. The wider pasture field is surrounded by a wooden stockproof fence and is accessed through a gated track connecting to the north of the site.

Topography

- 2.2 The site is located at approximately 100 m Above Ordnance Datum (AOD) and falls gently towards the south west towards the existing route of the B652.

Geology

- 2.3 BGS mapping shows the site to be underlain by Bedrock Geology of the Lewes Nodular Chalk Formation And Seaford Chalk Formation (Undifferentiated-Chalk). There are no recorded Superficial Deposits present underlying the site.
- 2.4 Based on the current and historical land uses on-site it is anticipated that areas of reworked soils with anthropogenic materials (termed 'Made Ground') could be present within the soils underlying the site.
- 2.5 There are no BGS borehole records on-site. The nearest BGS borehole (BGS ID527804) is located approximately 100 m north east of the site within the wider Tallents Farm complex. The BGS record does not list the geological strata encountered, however it does record the groundwater rest level as approximately 21.3 m Below Ground Level (BGL).

The site does not contain any features of international or national geological importance. The site is not located within a coal mining affected area. The site has been assessed for the potential presence of Radon. The Radon database shows that the site is located within an area with a maximum Radon potential is 1-3 %.

Soil

- 2.6 The Soil Map of England and Wales has been consulted to classify and describe the near-surface soil (namely topsoil and sub-soil). The soils most likely to be associated with the site are:
- **582c – Hornbeam 2:** Deep fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging.
- 2.7 As the site has been utilised as agricultural farmland and pastureland, it is considered possible that naturally occurring topsoil remains on-site.

Hydrogeology

- 2.8 The Bedrock Geology underlying the site (Lewes Nodular Chalk Formation And Seaford Chalk Formation) is classified as a Principal Aquifer, which is defined by the Environment Agency as:
- 'previously called Major Aquifers, geology exhibits high permeability and/or provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.'*
- 2.9 There are no registered potable groundwater abstractions on-site. The nearest registered abstraction is located approximately 580 m south west of the site at The Pool House, Kimpton Bottom. The licence number is recorded as 29/38/02/0022 and is registered to Mr & Mrs M& A Baldwin for the abstraction groundwater for private non- industrial amenity use. The annual

abstraction volume is not supplied. The permit start date is recorded as 1st April 2024, and the end date is not supplied.

- 2.10 The site is located within a groundwater outer Groundwater Source Protection Zone 2 (GSPZ 2).
- 2.11 The Envirocheck Report records no discharge consents registered on-site; however, there are 7 discharge consents recorded within 1 km of the site. The nearest recorded existing discharge consent is recorded approximately 230 m south-west of the site at Blue Cross Veterinary Centre, Kimpton Bottom. The discharge reference is recorded as EPRMB3093VB issued 31st July 2019 for the discharge of Sewage - Final/Treated Effluent discharged to ground.

Hydrology and flood risk

- 2.12 The Envirocheck Report records the nearest surface water feature as an unnamed pond approximately 750 m north east of the site. The nearest surface watercourse is located approximately 2.5 km to the west of the site (River Lea).
- 2.13 The site is located within an area considered to be at low risk from pluvial and/ or fluvial flooding.
- 2.14 There are no recorded surface water abstractions on or within 1 km of the site.

Recorded pollution incidents

- 2.15 The Envirocheck Report holds no records of Pollution Incidents to Controlled Waters on or within 1 km or the site.
- 2.16 No Substantiated Pollution Incident Register entries are recorded on or within 1 km of the site.

Archaeology

- 2.17 There are no scheduled monuments recorded on or within 1 km or the site. Historic England mapping records a Grade II listed building within the wider Tallents Farm, located approximately 140 m north east of the site. The listing entry is recorded as 1102752.

Unexploded Ordnance (UXO)

- 2.18 The site is considered to be at low risk of UXO according to the Zetica UXO online risk mapping service. The site is located within a rural setting with no recorded historical military targets on or within 1 km of the site. Typically, more urban/ industrial areas of war time industry/ military installations formed higher priority targets for the German Luftwaffe during the Second World War. The Zetica UXO risk map is presented in Appendix B.

Ecosystems

- 2.19 There are no RAMSAR or Special Protection Areas (SPA) or Site of Special Scientific Interest (SSSI) located on or within 1 km of the site. The site is not located within a Nutrient Neutrality catchment area.

Other matters (asbestos, landfill, waste management and mineral sites)

- 2.20 Asbestos is a known carcinogen and if present could pose a health risk to site users if inappropriately controlled. It was used extensively as a building material in the UK from the 1950's through to the mid 1980's. It is considered unlikely for there to be asbestos contamination on-site given the former and current land uses as an agricultural undeveloped pasture field.
- 2.21 The Envirocheck Report does not record the presence of any current/ historical landfill sites on or within 1 km of the site.

- 2.22 There is 1 record of potentially infilled land approximately 800 m north- west of the site located at the former Ramridge Chalk Pit, Kimpton. The Envirocheck Report records the site as infilled by 1975.
- 2.23 The Envirocheck Report does not record any registered historical or current mineral extractions on site. The nearest mineral extraction site is recorded approximately 700 m south-east of the site at The Dell, Porter's End, Harpenden. The extraction type was an opencast chalk pit, with operation recorded as ceased with no closure date supplied.

Surrounding receptors

- 2.24 The nearest residential receptors are located approximately 10 m west of the site at the existing dwelling adjacent the access trackway adjoining to the B652. There are further residential dwellings located along the route of the B652 to the south, east and west.
- 2.25 The nearest school (Kimpton Primary School), is located approximately 1.70 km east of the site.
- 2.26 There are no public rights of way recorded on or bordering the site.

3.0 POTENTIAL SOURCES OF CONTAMINATION

Historical Land Use

- 3.1 Historic maps in relation to the proposed development site have been reviewed, with a summary of the findings presented in Table 3.1. Extracts of the historical maps are presented in Appendix C.

Table 3.1 Notable Historical Site Uses		
Historical Map Period (Map Scale)	Onsite	Off site
Onsite & Off-site 1881 (1:2,500) Off-site 1884 (1:10:560)	The site is recorded as an undeveloped agricultural field bordered immediately to the south by an unmarked road/ trackway following the existing route of the B652.	The surrounding area comprises agricultural fields and rural farmland, traversed by hedgerows/ fence lines and an unnamed road running generally east- west. Tallents farm is recorded as 'Tarrence Farm', located approximately 130 m north of the site. Danes spring is recorded approximately 1.2 km west of the site.
Onsite & Off-site 1898(1:2,500) Off-site 1899 & 1901 (1:10:560)	As above.	Tarrance farm is now recorded as 'Tallents Farm'. An additional barn/ structure is now recorded approximately 80 m north of the site. A chalk pit is recorded approximately 800 m north west of the site.
Onsite & Off-site 1924 (1:2,500) Off-site 1925 (1:10:560)	As above.	The chalk pit is no longer recorded to the north-west of the site.
Onsite & Off-site 1938- 1947 (1:10:560)	As above.	The village of Kimpton has been further developed, with additional dwellings and structures recorded approximately 800 m to the east of the site. Allotments are now recorded approximately 1 km north east of the site at Kimpton.
Onsite & Off-site 1960 (1:10:560)	As above.	The wider area of Kimpton is further developed, with additional dwellings recorded adjacent the Allotments, approximately 1.1 km north- east of the site.
Onsite 1972-1973 (1:2,500) Off-site 1974-1975 (1:10:000)	As Above.	Additional structures are recorded within the Tallents Farm complex approximately 80 m north of the site. A structure is now recorded approximately 30 m west of the site. An animal welfare centre is recorded approximately 400 m south- west of the site.
Onsite 1995 (1:2,500) 1999- 2006 (1:10:000)	As Above.	The structure to 30 m to the west of the site has been extended, in line with the present- day layout.
Google Earth Aerial Imagery	2006 aerial imagery records the site as utilised as an open horse paddock.	An agricultural enclosure/ paddock is located within the northern section of the field. The paddock is recorded as removed between 2006-2010.

- 3.2 The site is recorded within historical mapping as located within an area of agricultural pasture land and the land use has not changed since the late 1800's. The site has not been previously developed and has not been utilised for commercial/ industrial land use. 2006 Aerial imagery recorded the site as an open horse paddock and the land use has not changed since. There are no permanent building or structures at the site.
- 3.3 Historical mapping shows the surrounding area has experienced slow development, with the land use remaining largely agricultural since the 1800's. The village of Kimpton underwent gradual development and urbanisation through the late 1800s to its present day layout. The

surrounding area generally comprises rural farmsteads/ agricultural farmland dissected by hedgerows and fencelines.

Site Walkover and Observations

- 3.4 A site walkover was undertaken by AAe on 22nd January 2026 to review the current uses and any sources of potential contamination on-site. The following section should be read in conjunction with the site walkover plan (263029/D/001) and the site walkover photographs presented in Appendix D.
- 3.5 The site comprises an area of managed grassland forming the south west corner of an agricultural field currently utilised as a horse paddock. The site is bound by a wooden stock proof fence (Photographs 1) to the south and west, segregating the field from the route of the B652 and the access track forming the southern and western site boundaries respectively. The site is bordered by the wider horse paddock to the north and east.
- 3.6 To the west of the site is an existing trackway connecting to the wider farmyard complex situated 80 m to the north and a residential dwelling positioned approximately 10 m to the west of the site. The site is accessed along a gated macadam capped track connecting to the wider farmyard (Photograph 2). The proposed site access track connects through the fenceline to the existing track bordering the site to the immediate west.
- 3.7 The site walkover recorded two semi-mature deciduous trees positioned towards the western perimeter to be retained under the proposed development (Photograph 5). An additional two semi-mature trees were recorded off-site within the wider horse paddock, bordering the site to the immediate east.
- 3.8 An off-site cesspit/ tank was recorded approximately 15 m north-east of the site (Photograph 7), understood to be servicing the wider Tallents farmyard complex approximately 50 m north of the site. The beneath ground tank was segregated from the wider horse paddock with a stock proof wooden fence. The Client advised the tank was a sealed cesspit style chamber without drainage and no history of overflowing.
- 3.9 There are no permanent structures or building recorded on the site. There is no evidence of previous reworking or land raising on site. There is no fuel or chemical storage at the site.
- 3.10 To verify the quality of the soils, AAe excavated two inspection hand pits positioned within areas of proposed soft landscaping to be retained under the current design (Photograph 9- 10) and one inspection hand pit within the proposed dwelling footprint (Photograph 11). Inspection of the hand pits and arisings recorded brown to light brown sandy gravelly topsoil with rare fragments of brick to a maximum of 0.20 m BGL. The hand pits did not record the presence of anthropogenic inclusions or evidence of reworking below 0.20 m BGL. All inspection hand pits were excavated to 0.40 m BGL. The inspection records and descriptive logs are presented in Appendix D. No significant Made Ground or evidence of contamination was recorded.

Potentially Contaminating Land Uses

- 3.14 Whilst the presence is considered very unlikely, potential contaminants associated with current and former land uses on and off site, are presented in Table 3.2.

Table 3.2 Potential contaminants associated with the current and historic site land uses (on and off-site)	
Land uses	Key Potential Contaminants
Agricultural/Commercial <i>On-site (Historic and Current land-use).</i> Historic agricultural farmland and current horse paddock/pasture with potential light agricultural plant / miscellaneous farm storage. Agricultural farmland/residential dwellings <i>Off-site (Historic and Current land-use).</i> Cesspit/ sealed chamber, agricultural farmland (wider farmyard area).	• <i>Hydrocarbons (Total Petroleum Hydrocarbons) and Volatile Organic Compounds (VOC)</i> – Fuels, oils and lubricants. Potential leaks and spills farm machinery which may have been stored on-site. • <i>PAHs (Polycyclic Aromatic Hydrocarbons)</i> – Residues from burning and combustion. Incorporation of ashes within underlying soils. • <i>Heavy metals and non-metals</i> – Incorporation of residual metal particles into underlying soils. Typical contaminants associated with Made Ground and fill materials. • <i>Asbestos</i> - Used in structure/fabric of buildings / building materials, potential incorporation of asbestos containing materials within underlying soils.

4.0 SUSTAINABILITY CONSIDERATIONS

- 4.1 LCRM requires that sustainability should be considered from the outset. To identify options to minimise the environmental, social and economic impact of the risk assessment stage, reference is made to SuRF 2025, Sustainable Management Practices for Management of Land Contamination. This document identifies the key applicable criteria, which are summarised in Table 4.1.

Table 4.1. Key Sustainability Criteria					
Environmental		Social		Economic	
ENV1	Air	SOC1	Human health & safety	ECON1	Direct costs & benefits
ENV2	Soil & ground conditions	SOC2	Ethics & equity	ECON2	Indirect costs & benefits
ENV3	Groundwater & surface water	SOC3	Neighbourhood & locality	ECON3	Employment
ENV4	Ecology	SOC4	Communities & community involvement	ECON4	Induced costs & benefits
ENV5	Natural resources & waste	SOC5	Uncertainty & evidence	ECON5	Project lifespan e.g climate change

- 4.2 At the risk assessment stage, the key sustainability factors can be largely grouped as follows:

- Gather sufficiently detailed desk study information to form a conceptual understanding of the site and to allow the design of an efficient site investigation;
- Understand the sources of contamination to design a suitably targeted site investigation, which can be carried out safely and without creating additional pathways, or other risks;
- Understand the surrounding environmental receptors to ensure they are not adversely impacted during site investigations;
- Understand the landowners / neighbours to ensure no disturbance during site investigations;
- Propose a site investigation which is efficient in energy use and that minimises waste;
- Identify considerations for foundation design; and
- Identify issues for the impacts of climate change on the site/proposed development.

- 4.3 Desk study detail is presented in Sections 1 – 3 of this report. The desk study has identified the following significant issues which could be impacted by climate change and which will require further detailed risk assessment on completion of a site investigation:

- The site is located on Principal Aquifer (Chalk). Therefore, the presence of any shallow groundwater and the significance/changes in groundwater levels should be considered as part of the development design.
- The site will need to attenuate increasing rainfall intensity as a result of more frequent extreme storm events and will also need to retain water during hotter summers/drought.

- 4.4 The key sustainability benefits of the proposals are:

- ENV 5- Redevelopment of agricultural farmland unlikely to require remediation or to generate significant volumes of waste soils.
- ENV 4- Proposed development utilising existing access track and retaining areas of soft land scaping and semi-mature trees on-site, minimising biodiversity impacts. The site is managed grassland of low ecological value.
- ECON 3- Proposed accommodation for farm worker, reduces journey/travel times and carbon emissions.

- 4.5 Foundation design considerations are given in Section 5. The conceptual site model is presented in Section 6. The potential requirement for site investigation proposals are assessed and presented in Section 7, with due regard to sustainability.

5.0 PRELIMINARY FOUNDATION RISK ASSESSMENT

- 5.1 A preliminary assessment of risks from future foundation methods used on-site has been made applying the methods given in CL:AIRE: 2025: Piling and Penetrative Ground Improvement: Methods on Land affected by Contamination: Guidance on Pollution Prevention, Table 6.2 (extract below).

Table 6.2: Foundation works risk assessment matrix for groundwater – initial screening

Factor	Negligible risk	Low risk	Moderate risk	High risk
Aquifer designation	Unproductive strata	Groundwater resource	Secondary	Principal
Receptor	No credible receptor	Groundwater outside SPZs (that contamination could credibly reach)	SPZ 3/total catchment zone Surface watercourse	SPZ 1 and 2 SSSI
Flow regime		Matrix intergranular flow		Fracture flow
Permeability	Very low permeability	Low permeability	High permeability	Very high permeability
Contamination	No significant contamination present	Low leachability (compare to suitable standards, EQS or DWS)	Dissolved phase in perched water	Dissolved phase in perched water NAPL
Piling/ground improvement depth	Pile toe > 10 m above bottom of aquiclude ¹	Pile toe between 5 m and 10 m from bottom of aquiclude ¹	Pile toe < 5 m above bottom of aquiclude ¹	Pile extends into aquifer

1. Based on research discussed in Appendix 1 and professional judgement
SPZ - Source Protection Zone; SSSI - Site of Special Scientific Interest; EQS - Environmental Quality Standard; DWS - Drinking Water Standard; NAPL - Non Aqueous Phase Liquid

Extract from CL:AIRE 2025

- 5.2 Where potentially adverse impacts are identified, measures to mitigate such impacts are proposed for incorporation into the Project's design proposals. This is considered to be in accordance with the precautionary principle underpinning UK environmental legislation and associated regulatory guidance.

Preliminary Foundation Risk Assessment

- 5.3 Table 5.1 presents the preliminary assessment.

Table 5.1 Preliminary Assessment of Foundation Risk		
Factor	Description	Risk
Aquifer designation	Principal Aquifer (Chalk).	Moderate risk.
Receptor	Principal Aquifer (Chalk).	Moderate risk.
Flow regime	Matrix flow and/or fracture flow.	Moderate risk.
Permeability	High to very high permeability.	Moderate risk.
Contamination	Unlikely to be significant contamination present.	Low risk
Piling / ground improvement depth	No requirement for piling, development likely to use shallow footings and concrete foundations.	Negligible risk
Overall risk	Low to moderate risk.	

6.0 CONCEPTUAL SITE MODEL AND SIGNIFICANT CONTAMINANT LINKAGES

Introduction

- 6.1 The risks that potential contamination within the underlying strata pose to the current and futures uses of the site and the wider environment are assessed within this section of the report.
- 6.2 The assessment is undertaken in accordance with the standard methodology set out in Appendix A.
- 6.3 Table 4.1 sets out the potential receptors at, and surrounding, the site from the information from Section 2 'Baseline Setting' and the available pathways. These are subsequently evaluated as the potential Significant Contaminant Linkages (SCL).

Table 4.1 Summary of receptors and available pathways	
Receptor	Pathways
A. Human Health	
On-site usage (proposed change of use to residential with private gardens and soft landscaping).	Dermal contact Ingestion of soil Inhalation of fugitive dusts Inhalation of vapours and gases Puncture Ingestion via garden produce
Off-site land uses (residential and agricultural uses).	Inhalation of vapours and gases. Dermal contact (following migration) Ingestion of soil (following migration)
Construction worker – in the event of excavation and groundworks for investigation/construction works.	Dermal contact Ingestion of soil Inhalation of fugitive dusts and gases Puncture
B. Ecology	
On-site planting.	Direct absorption of phytotoxic compounds from soils
C. Controlled waters	
Groundwater (Principal Aquifer).	Leaching of contaminants from the soil matrix. Direct runoff to surface and groundwaters.
D. Buildings and Services	
- Concrete - Services - Potable pipes	Contact with aggressive soil conditions

Table 4.2 Conceptual Site Model					
Hazard Source (chemical of concern where known)	Pathway	Receptor	Effect	Risk Classification	Discussion, Remediation or Mitigation Solution
Potential residual contaminants present from former and current site uses. TPH, PAH, VOC, Metals, Asbestos.	Dermal contact, ingestion of contaminated soils, puncture and inhalation of fugitive dusts via air.	Humans (future users of the site)	Toxic, carcinogenic or hazardous to human health.	Significance: Severe Likelihood: Very Unlikely. Risk: Low	Contamination can give rise to human health concerns if users of the site come into direct contact with affected soil, ingest contaminated particles or inhale fugitive dusts which include contaminated particles. The desk-top study, site walkover and historical review show that the site was recorded as open agricultural pastureland from the late 1800's and the land use has not changed since. The site walkover confirmed the current land use as an open horse paddock/ pasture field. AAe did not record any significant anthropogenic inclusions or Made Ground within the inspection hand pits positioned within the red line boundary. No evidence of suspected contamination was recorded. Considering the historical land uses on site, the desk top study and the site walkover inspection, it is considered very unlikely that the soils underlying the site are significantly contaminated. The risk to future site users is therefore assessed to be Low. <u>FURTHER WORKS, REMEDIATION OR MITIGATION</u> 1. No specific controls or further works. 2. Any unexpected contamination encountered during the enabling groundworks phase should be suitably investigated and assessed for re-use or off-site disposal in accordance with the waste regulatory regime.

Table 4.2 Conceptual Site Model					
Hazard Source (chemical of concern where known)	Pathway	Receptor	Effect	Risk Classification	Discussion, Remediation or Mitigation Solution
Potential residual contaminants present from former and current site uses and off-site. (Hydrocarbons, VOC, ground gases – carbon dioxide and methane).	Inhalation of vapours and ground gases via contaminated soils or underlying stratum.	Humans (future users of the site)	Toxic, carcinogenic or hazardous to human health.	Significance: Severe Likelihood: Very Unlikely Risk: Low	The presence of substantial Made Ground, landfill waste deposits, certain natural geological stratum and/or presence of hydrocarbons (including Volatile Organic Compounds (VOC)) can generate ground gases or vapours, which, if they accumulate in enclosed spaces/structures can cause a risk of asphyxiation, explosion or chronic illness. Due to the distance to the nearest recorded infilled land (former quarry pit) located approximately 800 m north- west of the site, it is considered very unlikely that any ground gasses from the off- site infill materials could migrate at significant concentrations to pose a risk to future site users. Therefore, the infilled former quarry pit is not considered to pose a credible off-site source of ground gas risk that would impact site and is not requiring further assessment. There is no evidence of significant land raising or historic infilling recorded on- site within the historical mapping. The site walkover inspection hand pits did not record the presence of any significant Made Ground underlying the site. BGS records do not record the presence of superficial deposits on-site and the underlying geology is not considered to pose a risk from natural ground gas emissions. Therefore, based on the underlying ground conditions and the site proposals, the risk to future site users is assessed to be Low from ground gases and hydrocarbon vapours.

Table 4.2 Conceptual Site Model					
Hazard Source (chemical of concern where known)	Pathway	Receptor	Effect	Risk Classification	Discussion, Remediation or Mitigation Solution
Potential residual contaminants present from former and current site uses. TPH, PAH, VOC, Metals, Asbestos.	Dermal contact, ingestion of contaminated soils, puncture and inhalation of fugitive dusts and gasses via air.	Humans (construction workers)	Toxic, carcinogenic or hazardous to human health.	Significance: Severe Likelihood: Very Unlikely. Risk: Low	Contamination can give rise to human health concerns if construction workers come into direct contact with affected soil, ingest contaminated particles or inhale fugitive dusts which include contaminated particles. Due to the historical land use, site walkover inspection and literature review, it is anticipated that the soils underlying the site are agricultural reworked soils of natural origin. Inspection of the soils on-site did not record any obvious anthropogenic inclusions of visual / olfactory evidence of contamination. Considering the site historical land use forming a section of agricultural pastureland with no former developments or dwellings, it is considered unlikely that any potential residual contamination within the underlying soils would pose a significant risk to constructions workers. The risk to construction workers is therefore assessed to be Low. <u>FURTHER WORKS, REMEDIATION OR MITIGATION</u> Adoption of standard working controls during the demolition, construction and groundworks phases to control fugitive emissions, mud and dust.

Table 4.2 Conceptual Site Model					
Hazard Source (chemical of concern where known)	Pathway	Receptor	Effect	Risk Classification	Discussion, Remediation or Mitigation Solution
Potential residual contaminants present from former and current site uses. TPH, PAH, VOC, Metals, Asbestos.	Off-site migration of contamination in dusts, vapours and leaching through soils.	Humans (adjacent land users)	Toxic, carcinogenic, hazardous to human health.	Significance: Moderate Likelihood: Very Unlikely Risk: Very Low	Contamination can give rise to human health concerns if adjacent land users come into direct contact with affected soil, ingest contaminated particles or inhale fugitive dusts which include contaminated particles. It is proposed that the site will be redeveloped into a residential dwelling with the inclusion of amenity areas of parking and a private garden/ soft landscaping which could generate fugitive dusts from exposed soils and allow surface infiltration and the potential leaching/mobilisation of any potential residual contaminants through the underlying strata Based on the historical and existing land use, the desk top study, site walkover inspection as well as the distance to adjacent land users and lack of credible sources of contamination, the site is not considered to pose a risk to adjacent site users. The risk to adjacent land users has therefore been assessed to be Very Low. <u>FURTHER WORKS, REMEDIATION OR MITIGATION</u> Adoption of standard working controls during the demolition, construction and groundworks phases to control fugitive emissions, mud and dust.

Table 4.2 Conceptual Site Model					
Hazard Source (chemical of concern where known)	Pathway	Receptor	Effect	Risk Classification	Discussion, Remediation or Mitigation Solution
Potential residual contaminants present from former and current site uses. TPH, PAH, VOC, Metals.	Leaching through soil to groundwater and surface water.	Controlled waters – Surface water and groundwater	Contamination of a controlled water.	Significance: Severe Likelihood: Very Unlikely Risk: Low	Direct surface runoff, the migration of residual contaminants through soils and leaching of contamination via groundwater can give rise to pollution and deterioration of controlled waters (groundwater and surface waters). The underlying geology is classified as a Principal Aquifer (Bedrock Geology) and the site is located within an outer Source Protection Zone 2. The nearest BGS borehole records groundwater rest level at approximately 21.3 m beneath ground surface. The Envirocheck Report records the nearest surface water feature as an unnamed pond approximately 750 m north east of the site. The nearest surface watercourse is located approximately 2.5 km to the west of the site (River Lea). An off-site cesspit chamber was observed approximately 15 m north east of the site boundary. The client advised the tank was a sealed style cesspit chamber without drainage and with no known history of overflowing. Based on the desk top study and site walkover inspection, the historical and current agricultural land use on site, it is considered unlikely that the site is significantly contaminated. Considering the aquifer status, the recorded depth to groundwater, the historical land use and the proposed development, the development is not considered to pose a significant risk to groundwater. The risk to controlled waters is therefore assessed to be Low. <u>FURTHER WORKS, REMEDIATION OR MITIGATION</u> 1. No specific controls or further works. 2. Any unexpected contamination encountered during the enabling groundworks phase should be suitably investigated and assessed for re-use or off-site disposal in accordance with the waste regulatory regime

Table 4.2 Conceptual Site Model					
Hazard Source (chemical of concern where known)	Pathway	Receptor	Effect	Risk Classification	Discussion, Remediation or Mitigation Solution
Potential residual contaminants present from former and current site uses. (TPH, pH, Metals)	Uptake by roots from soil and groundwater.	Ecosystems/ Plants	Damage and restrictive growth.	Significance: Moderate Likelihood: Very Unlikely Risk: Very Low	Certain contaminants can damage and/or restrict growth if absorbed by plants; these are referred to as Phytotoxic Contaminants. It is proposed that the site will be redeveloped into a residential development which will include private gardens/soft landscaping. The site walkover did not record the presence of any obvious restrictive growth within the existing pasture field/ horse paddock. The historical review did not record any former industrial or residential land use on site. The land use on site has remained agricultural, with the site forming a section of an open horse paddock/ pasture field. The AAe inspection hand pits did not record the presence of any significant anthropogenic inclusions or visual/ olfactory signs of contamination. Considering the desk top review, historical land uses and site walkover inspection, the risk to ecosystems/ plants is considered to be Very Low.
Potential residual contaminants present from former and current site uses. (TPH, pH)	Contact with contaminated soil.	Services and structures in the underlying ground	Damage to services and structures.	Significance: Moderate Likelihood: Unlikely Risk: Low	Considering the desk top study and the land uses recorded in the historical review, it is considered unlikely that the site is significantly contaminated. There is no evidence of land raising or infilling on-site and the inspection hand pits did not record any signs of significant reworking or Made Ground on-site. The risk to structures and services is therefore considered to be Low.

7.0 CONCLUSIONS AND RECOMMENDATIONS

- 7.1 AA Environmental Limited (AAe) has been commissioned by ASC Contracts Limited to undertake a desk-top Preliminary Risk Assessment (PRA) to assess the land contamination risks for the proposed residential development of a parcel of agricultural land at Tallents Research Farm, Hitchin, SQ4 8EU. A desk-top study of the baseline and environmental setting in addition to a site walkover, was undertaken in order to assess the site history, identify any potential sources of contamination and inform the risk assessment.
- 7.2 The desk-top study and historical review shows that the site was recorded as open agricultural pasture field within 1800's historical mapping and the land use has remained unchanged since.
- 7.3 The site walkover undertaken by AAe recorded the site as a parcel of open pasture forming the south western section of an agricultural field currently utilised as a horse paddock. There are no structures or buildings at the site. The site was accessed by a macadam trackway in generally good condition with some signs of cracking. The site walkover included the excavation of two inspection hand pits positioned within areas of proposed soft landscaping and one within the footprint of the proposed residential dwelling. Inspection of the underlying soils recorded rare fragments of brick to a maximum of 0.20 m BGL overlying natural sandy gravelly topsoil proven to 0.40 m BGL. No visual/ olfactory evidence of contamination was observed, and no significant Made Ground was encountered on-site. The likelihood of significant contamination is considered to be low.
- 7.4 The site is bordered by the route of the B652 to the south and a macadam access track to the immediate west. The site is surrounded by the horse paddock to the north and east, forming the wider agricultural field/ managed pasture land. Two semi-mature deciduous trees were recorded to the immediate east of the proposed development red line boundary. An off-site cesspit/ tank was recorded approximately 15 m north-east of the site. The client advised the tank was a sealed chamber without drainage and no known history of overflowing.
- 7.5 The preliminary conceptual site model and risk assessment has identified a potential low risk to future site users and construction workers from the underlying soils present on-site. A potential low risk was identified for controlled water receptors, structures and services and for future site users from the accumulation of ground gases and vapours. A potential very low risk was identified for adjacent land users and ecological receptors. No further investigation or assessment of the land contamination risks is considered necessary.
- 7.6 Whilst it is considered unlikely that the site would be significantly contaminated, it is recommended that standard working controls should be adopted during the enabling works and groundworks phase to control fugitive emissions, mud and dust. Any unexpected contamination encountered during the groundworks should be assessed by a suitably competent person for re-use or off-site disposal in accordance with the waste regulatory regime. Any required remediation works should be supervised and validated by an Environmental Consultant to demonstrate that the works have been completed to the required standard and risks appropriately managed.

263029/LH
February 2026

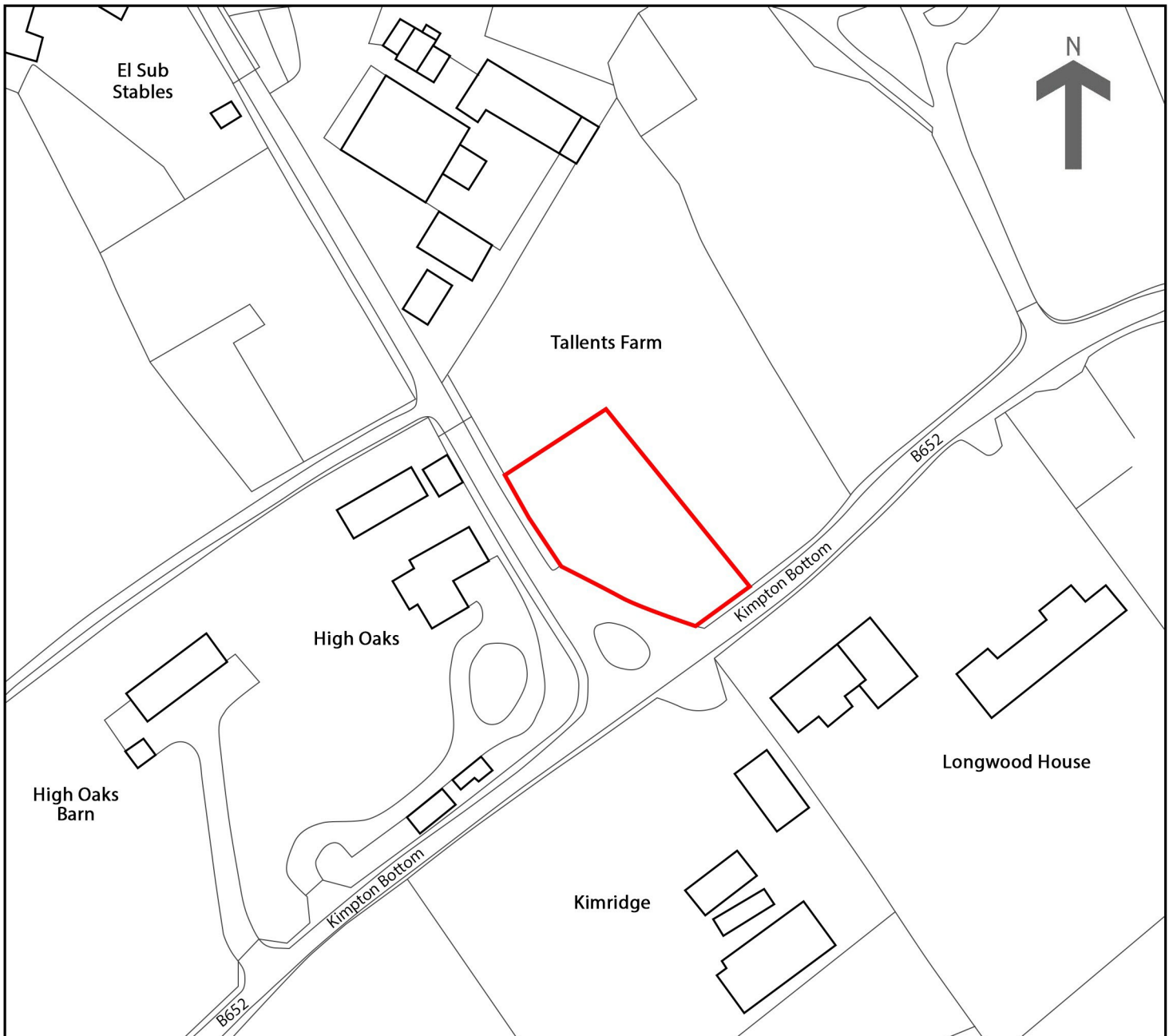
AA Environmental Limited

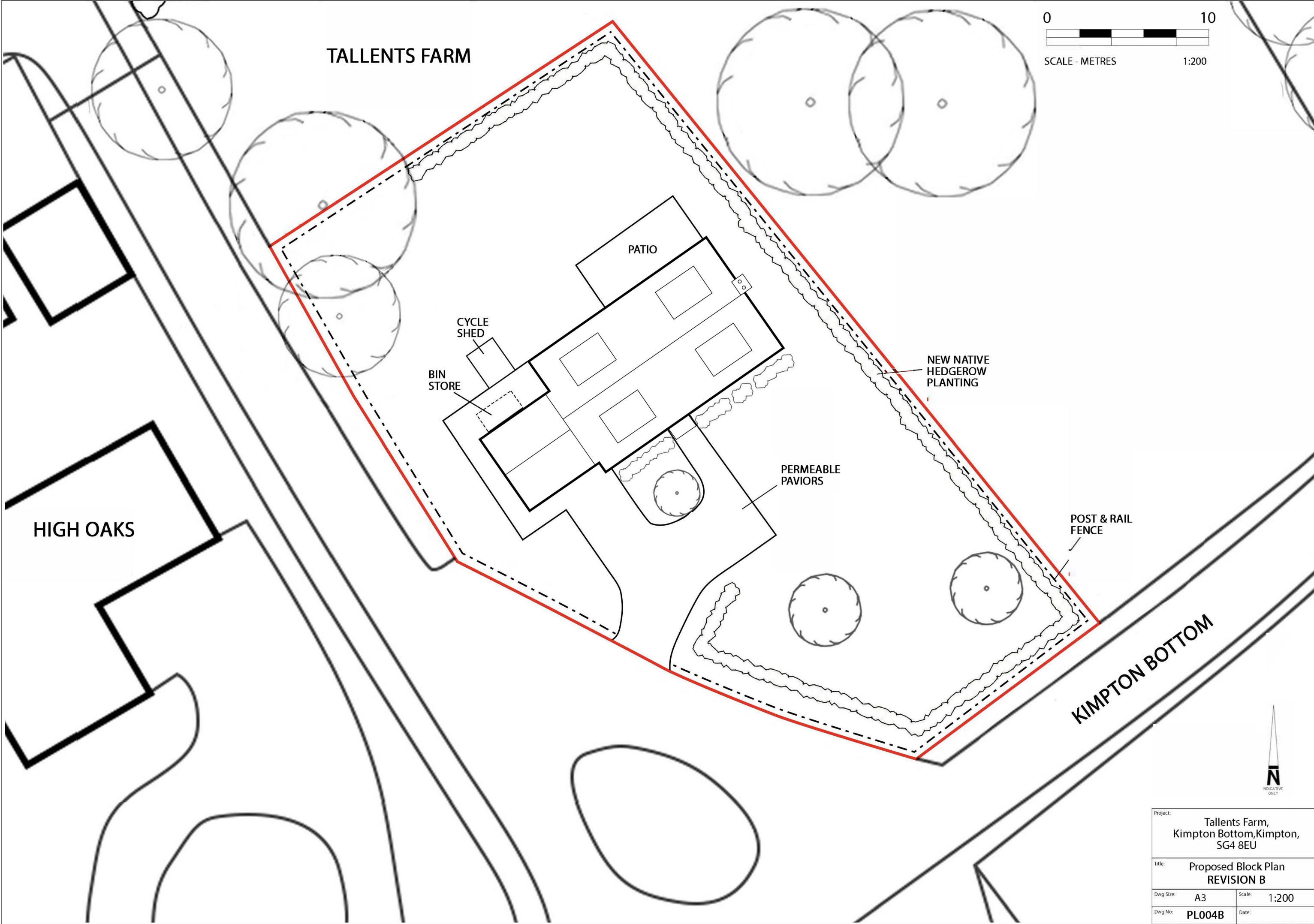
FIGURES

Site Location Plan

Tallents Farm, Kimpton Bottom, Kimpton, SG4 8EU

A4 @ 1:1250





TALLENTS FARM

0 10
SCALE - METRES 1:200

PATIO

CYCLE
SHED

BIN
STORE

NEW NATIVE
HEDGEROW
PLANTING

PERMEABLE
PAVIORS

POST & RAIL
FENCE

HIGH OAKS

KIMPTON BOTTOM



Project: Tallents Farm, Kimpton Bottom, Kimpton, SG4 8EU			
Title: Proposed Block Plan REVISION B			
Dwg Size:	A3	Scale:	1:200
Dwg No:	PL004B	Date:	

TALLENTS FARM



- KEY:**
- Site Walkover Observations**
- Hand Pit Location
 - Red Line Boundary

Note: All locations are indicative and for guidance purposes only.



POST & RAIL FENCE

KIMPTON

Rev.	Details		Drawn	Date
			Chkd.	
Project				
263029				
Tallents Research Farm				
Title				
Site Walkover Inspection Plan				
 Environmental Consultants AA Environmental Ltd Units 4-8 Cholswell Court Shippon Abingdon Oxon OX13 6HX T: (01235) 536042 F: (01235) 523849 info@aae-ltd.co.uk www.aae-ltd.co.uk				
Scale	Date	Jan '26	Drg. No.	Rev.
Not To Scale	Drawn	Chkd.	263029/D/001	
	LH	JNT		

APPENDIX A

Conceptual Site Model Methodology

Introduction

- A.1 To determine the Significant Contaminant Linkages (SCL) at a site requires the review of potential contaminants, the associated available pathways and the characteristics of the associated receptors. The review of all the SCL is determined is termed as the development of a CSM.
- A.2 The CSM for the site is presented in Section 4. The method for its development has been undertaken in accordance with this Appendix. Section 4 also determines the potential for any remediation/mitigation works required to make the site suitable for the proposed use.

Methodology

- A.3 A series of potential receptors are assessed, together with linking pathways and suspected contaminant sources. Table A1 sets out the potential consequences of the contaminant linkage and the associated classification of the effect. Typical receptors evaluated are as follows:
- Human health
 - Proposed/current usage:
 - Open spaces;
 - Residential with gardens;
 - Residential without gardens;
 - Commercial;
 - Industrial;
 - Off-site human health (linked to the typical land uses as defined above);
 - Construction workers;
 - Ecological resource:
 - Current habitats and species;
 - proposed habitats and species;
 - Controlled waters:
 - Surface waters;
 - Groundwater;
 - Buildings and structures:
 - Aggressive ground conditions creating corrosion or impairment to building/structure.

Table A1. Potential Consequence of Contaminant Linkage

Classification	Human Health	Controlled water	Built Environment	Ecosystems
Severe	Irreversible damage to human health.	Significant pollution to a sensitive or important controlled water.	Damage to a building or structure that would require repair or remedial measures in excess of £20,000.	Irreversible change to an existing ecological species, habitat or ecosystem. Prohibit proposed growth of species, ecosystem or habitat.
Moderate	Reversible long-term damage to human health.	Pollution to a controlled water.	Damage to a building or structure that would require repair or remedial measures below £20,000.	Will impair the development of an existing species, ecosystem or habitat.

Classification	Human Health	Controlled water	Built Environment	Ecosystems
				Permit limited growth of a proposed species, ecosystem or habitat.
Mild	Reversible but short-term damage to human health.	Minor pollution to a non-sensitive controlled water.	Repairable damage to building or structures which would not require excessive cost.	Minor change or effects of development on species or habitat but does create long term effects on ecosystem.
Negligible	No discernible damage to human health.	No discernible pollution likely to a non-sensitive controlled water.	Insubstantial damage not requiring repair.	No significant effects on existing or proposed species, habitats or ecosystems.

A.4 The risk assessment examines impact of a contaminant on a receptor against the likelihood of its occurrence. The likelihood is rated accordingly:

Certain: > 90% of contaminant receptor linkage
Likely: 60-90% of contaminant receptor linkage
Possible: 30-60% of contaminant receptor linkage
Unlikely: 15-30% of contaminant receptor linkage
Very unlikely 2.5-15% of a contaminant receptor linkage
Negligible: <2.5% of contaminant receptor linkage

A.5 The available pathways are considered as follows:

- Human health
 - Dermal contact
 - Ingestion
 - Inhalation
 - Explosion
 - Puncture
- Ecology
 - Absorption of contaminants through roots and leaves;
- Controlled waters
 - Direct ingress of contaminants;
 - Leaching of contaminants from soils;
- Buildings
 - Direct contact with contaminated water or soils

A.6 Using the information derived about the availability of a contaminant to a receptor, a risk classification is then undertaken in accordance with Table A2.

Table A2. Risk Classification

		Potential consequence of contaminant linkage			
		Severe	Moderate	Mild	Negligible
Likelihood of contaminant receptor linkage	Certain	High	High	Medium	Very low
	Likely	High	High	Low	Negligible
	Possible	High	Medium	Low	Negligible
	Unlikely	Medium	Low	Very low	Negligible
	Very Unlikely	Low	Very low	Very low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

A.7 The assessed risk classification definitions are:

High:	it is likely that the contaminant source could cause harm to a designated receptor and harm would be significant.
Medium:	it is possible that the contaminant source could cause harm to a designated receptor, but it is unlikely that the harm would be significant.
Low:	it is possible that the contaminant source could cause significant harm to a designated receptor, however it is likely to be mild.
Very low:	it is considered unlikely that significant harm could be caused and any impact would be mild.
Negligible:	the potential contaminant source cannot cause significant harm to the receptor.

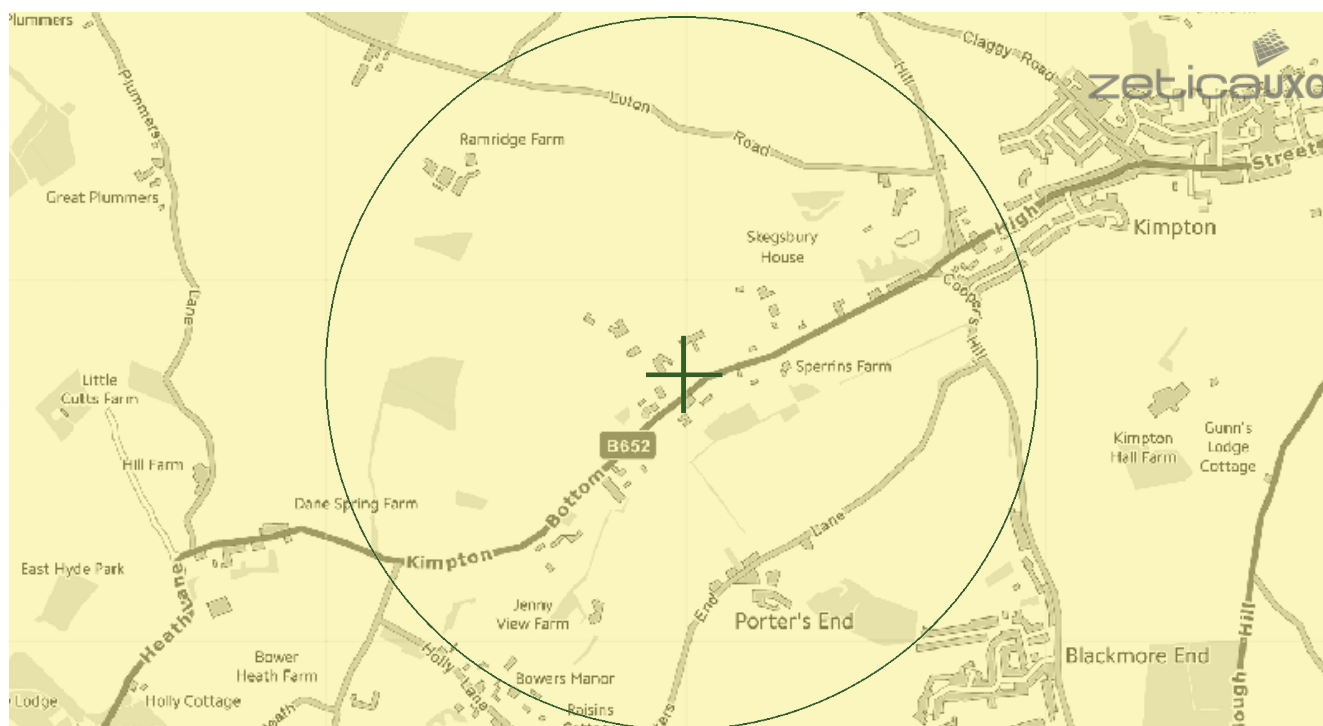
APPENDIX B
Zetica UXO Risk Map

UNEXPLODED BOMB RISK MAP



SITE LOCATION

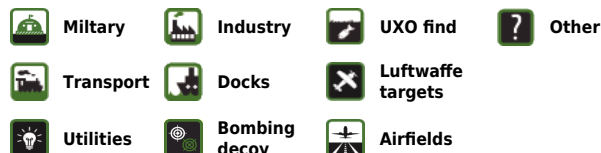
Map Centre: 515960,217747



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- Low:** Areas indicated as having 15 bombs per 1000acre or less.



How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density. Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then [additional detailed research](#) is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our [pre-desk study assessments \(PDSA\)](#) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 email: uxo@zetica.com web: www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the [accompanying notes on our website](#).

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