



JOB NO. AE0503

LCRM STAGE 1, TIER 1: DESK STUDY REPORT & WALKOVER SURVEY
Geotechnical & Geoenvironmental Preliminary Risk Assessment

Land at Denham's Corner, North of Snakemoor Lane
Horton Heath, Hampshire, SO32 2BW

MAY 2025



On behalf of:
Southern Strategic Land
LLP



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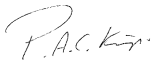
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Site: Land at Denhams Corner, North of Snakemoor Lane, Horton Heath, Hampshire SO32 2BW

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CONTENTS PAGE

1. INTRODUCTION	
1.1 Preamble	Page 1
1.2 Proposed Scheme / Development	Page 1
1.3 Background	Page 3
1.4 Risk Assessment Procedure	Page 4
2. SITE DESCRIPTION	
2.1 Site Size & Extent	Page 6
2.2 Topography	Page 6
2.3 Geological Summary	Page 6
3. POTENTIAL SOURCES	
3.1 Past Land Usage & Historical Mapping	Page 7
3.2 Waste & Landfill	Page 7
3.3 Current Industrial Land Usage	Page 7
3.4 Environmental Permits, Incidents, Part 2A EPA	Page 7
3.5 Artificial & Made Ground	Page 7
3.6 Ground Workings, Ponds, Pits or Infilled Land	Page 8
3.7 Walkover Survey	Page 8
3.8 Organic Soils (Naturally Occurring)	Page 8
3.9 Radon (Naturally Occurring)	Page 8
4. PATHWAYS & RECEPTORS	
4.1 Hydrogeology & Hydrology	Page 9
4.2 Designated Environmentally Sensitive Sites	Page 9
4.3 Historical Mapping	Page 9
4.4 Walkover Survey	Page 9



5. GEOTECHNICAL	
5.1 Geology	Page 10
5.2 Geohazards	Page 11
5.3 Flood Risk	Page 11
6. CONCEPTUAL SITE MODEL (CSM)	
6.1 Pollutant Linkage Summary & CSM	Page 12
6.2 Discovery Strategy	Page 14
7. CONCLUSIONS & RECOMMENDATIONS	
7.1 Geoenvironmental	Page 15
7.2 Geotechnical	Page 15



APPENDICES

- A.1 Site Plans
- A.2 Groundsure Enviro & Geo Insight
- A.3 Historical Mapping
- A.4 Review of Historical Mapping
- A.5 Walkover Survey
- A.6 Site Photographs
- A.7 Conceptual Site Model
- A.8 Important Notice



LCRM STAGE 1, TEIR 1 Geoenvironmental & Geotechnical Desk Study

Project Title	Land at Denhams Corner, North of Snakemoor Road,	Job Number	AE0503
Location	Horton Heath, Hampshire, SO32 2BW	Date	20 May 2025
Client	Southern Strategic Land LLP	Engineer	A.I.S. Ltd

1. INTRODUCTION

	Comments	References
1.1 Preamble	Following an instruction from the Client, a Phase 1 Geoenvironmental and Geotechnical Desk Study & Walkover Survey incorporating a Land Contamination Risk Management (LCRM), Stage 1, Tier 1 Qualitative Preliminary Risk Assessment (PRA) was undertaken by Advanced Investigation Systems Ltd during May 2025, within a 9.2 hectare, arable field to the north of Snakemoor Lane, Horton Heath. With respect to the potential for present and historical contamination of the Site, the study forms a preliminary risk assessment (PRA) relevant to future site users, construction workers and other sensitive receptors. This report may be submitted to the Local Authority Planning, Building Control Department, Warranty Providers and other relevant agencies, in support of the planning application, structure and associated infrastructure of the proposed development. A further purpose of the Desk Study Report is to provide background information regarding ground conditions and potential geohazards, for the purposes of foundation design. These findings are presented in Section 5 of this report. This study follows and makes reference to a ground investigation carried out by this Office that specifically looked at and characterised ground drainage potential with respect to sustainable (surface water) drainage systems (SuDS)	Instruction date: 02 May 2025 AIS Report AD804 (October 2024)
1.2 Proposed Scheme / Development	Together with the construction of new access ways, associated parking and landscaping, it is proposed to develop the land by erection of the following dwellings: • 2 Bed Bungalow: 1 no. • 3 Bed Bungalow: 2 no. • 2 Bed Semi Detached: 46 no. • 3 Bed Semi Detached: 34 no. • 2 Bed Terraced: 5 no. • 3 Bed Terraced: 8 no. • 3 Bed Detached: 20 no. • 4 Bed Detached: 34 no. • 15 no. additional dwellings (detached, semidetached and terraced).	

	Comments	References
1.2 Proposed Scheme / Development (Continued)	A plan with the outline development is shown in Figure 01 below:  <u>Figure 1: Outline Plan of Proposed Development</u> At the time of the study the Site was under the early stages of maize crop cultivation. However, for the Walkover Survey, good access was available to all parts of the Site.	Appendix 5

1. INTRODUCTION (Continued)

	Comments	References
1.3 Background	<u>Geoenvironmental</u> The scope of works comprises of a desk-based review of information from available documentary sources, to cover potential contamination risks with respect to soil, groundwater and ground-borne gas on and in the vicinity of the Site and to establish the environmental setting of the site with respect to contaminated land. When completed by a site walkover survey, a Conceptual Site Model (CSM) has been compiled and preliminary qualitative risk assessment made of potential pollutant sources, pathways, and receptors. In terms of contamination, this Study follows Land Contamination Risk Management (LCRM) guidelines. Based on the findings and CSM, a qualitative preliminary risk assessment (PRA) with respect to potential ground contamination has been made. Initially a 250m buffer has been applied around the study area, and any source, pathway or receptor that falls within this radius is subsequently examined and its relative significance quantified. The presumed expected risk associated with any identified linkages is subsequently assessed using the risk categories & algorithm shown in Section 1.4 below (after CIRIA 552). <u>Geotechnical</u> The Desk Study also aims to aid identification of the likely ground and groundwater conditions, together with geological features, that may impact on the study Site, prior to its development. Depending on the findings of the Desk Study, additional investigation work and risk assessment may be required to further characterise the Site.	Appendix 7 Environment Agency, 2020 CIRIA 552, 2001

1.4 Risk Assessment Procedure

Risk Severity Classification

The risk posed by a given pollutant linkage is classified based upon the severity of the consequence should that linkage be realised, compared with the likelihood of the linkage being realised. The definition of terms and classification of severity is shown in Figure 2 below:

CIRIA 552, 2001

Classification	Category	Definition	Examples
Severe Rating 5 Short-term (acute) risks only	Human	Short term (acute) risks likely resulting in significant possibility of significant harm as defined by Part 2A of the EP Act (1990).	High concentration of cyanide on the surface of an informal recreation area.
	Controlled Waters	Short-term risk of pollution of a sensitive water resource.	Major spill/migration of contaminants into controlled waters
	Property	Catastrophic damage /destruction of property.	Explosion causing building collapse (can equate to short-term health risk if buildings collapse.
	Ecological System	A short-term risk to a particular ecosystem, or organism forming part of such ecosystem	
Medium Rating 4 Chronic (long-term) risks; "significant harm"	Humans	Long term (chronic) risks likely to result in significant possibility of significant harm as defined by Part 2A of the Environmental Protection Act (1990)	Concentrations of contaminants within soil exceed GAC (generic assessment criteria) or SSAC (site specific assessment criteria).
	Controlled Waters	Pollution of sensitive water resource.	Leaching of contaminants from a site into a Principal or Secondary Aquifer
	Ecological System	A significant change in a particular ecosystem.	
Mild Rating 3 Chronic (long-term) risks; less sensitive receptors	Controlled Waters	Pollution of non-sensitive water resources	Pollution of non-classified groundwater
	Property	Significant damage to buildings structures and serves. Damage to sensitive buildings/structures/services	Damage to a building rendering it unsafe to occupy (e.g. foundation damage resulting in instability)
Minor Rating 2 Chronic (long-term) risks; mild	Financial/project	Harm, not necessarily significant harm which may result in financial loss, or expenditure to resolve	
	Humans	Non-permanent health effects to human health (easily prevented by means such as PPE etc.)	The presence of contaminants at such concentration that protective equipment is required during site works.
	Property	Easily reparable effects of damage to buildings, structures and services	The loss of plants in a landscaping scheme. Concrete discolouration
Negligible Rating 1 No significant harm.	All receptors	No significant effects	

Figure 2: Risk Classification of Consequence of Hazard (after CIRIA 552, 2001)

1.4 Risk Assessment Procedure (continued)

Risk Probability Classification & Rating

The classification and definition of probability of risk is shown in Figure 3 below:

Classification & Rating	Definition
High Likelihood or Certainty Rating 5	There is a pollution linkage and an event that appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.
Likely or Probable Rating 4	There is a pollution linkage, and all the elements are present and in the right place which means it is probably that the event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood or Possible Rating 3	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place and is less likely in the shorter term.
Unlikely or Remote Possibility Rating 2	There is a pollution linkage, but circumstances are such that it is improbable that an event would occur even in the very long term.
No possibility Rating 1	Zero possibility of eventuality.

CIRIA 552, 2001

Figure 3: Risk Probability and Definition (after CIRIA 552, 2001)

Once the risk severity and probability have been assessed, the presumed risk rating associated with any identified linkages is subsequently assigned using the risk algorithm and traffic light system shown in Figure 4 below.

Potential severity	Risk rating						Severity of hazard	Probability of hazard	Overall risk
	5	5	10	15	20	25	5 = Fatality	1 = Improbable	1 - 6 Low
	4	4	8	12	16	20	4 = Major	2 = Remote	8 - 12 Medium
	3	3	6	9	12	15	3 = Minor	3 = Possible	15 - 25 High
	2	2	4	6	8	10	2 = Negligible	4 = Probable	
	1	1	2	3	4	5	1 = None	5 = Certainty	
		1	2	3	4	5			
	Probability						Severity of hazard x probability = risk rating		

Figure 4: Risk Algorithm

Reality Checking

Once the risk rating has been assigned, it is reality checked to ensure it is an accurate assessment, i.e. a concluding assessment is made of the the degree to which the produced numbers are accurate compared to the perceived underlying true risk.