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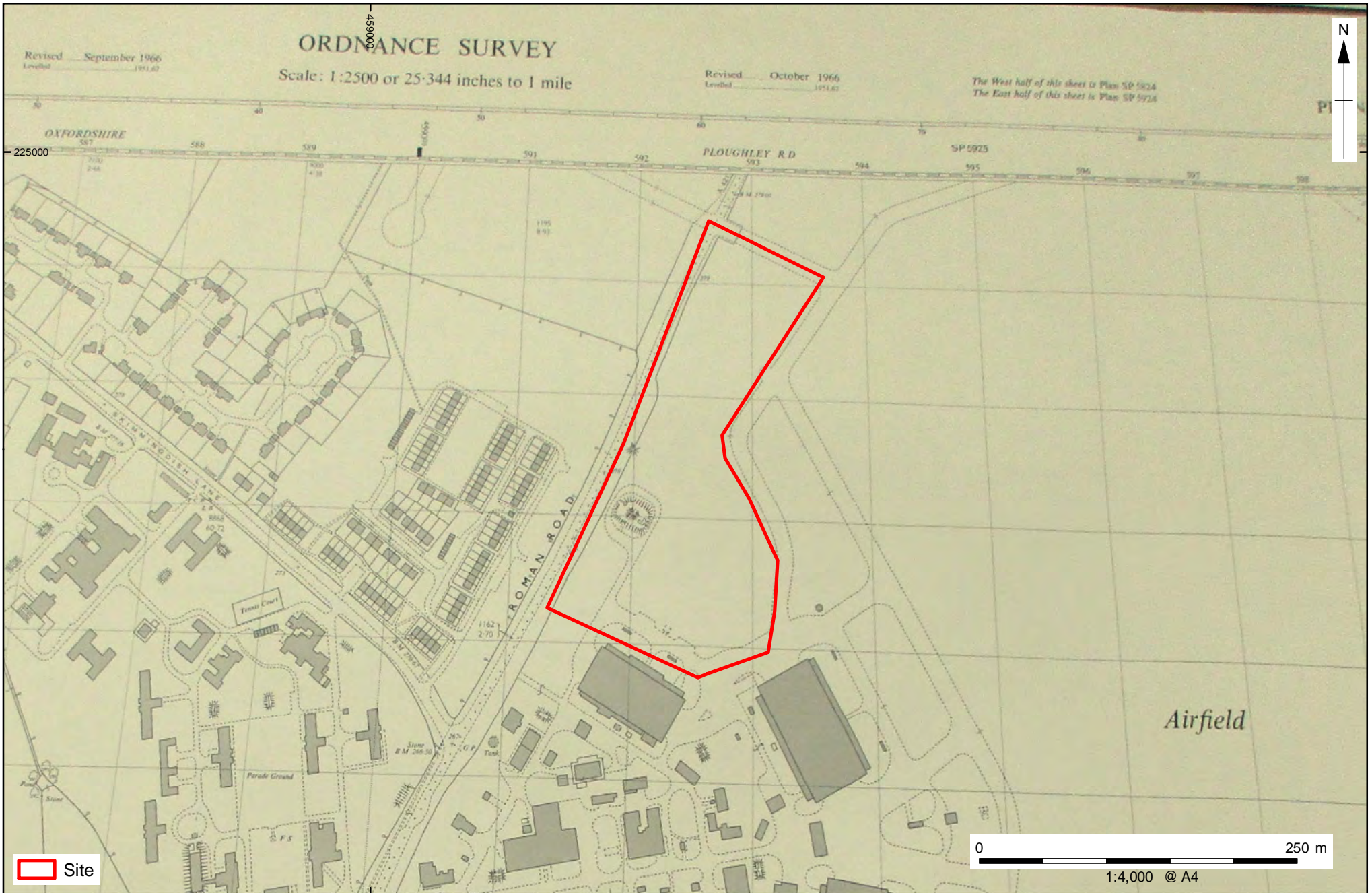


Figure 8: Ordnance Survey (1966)

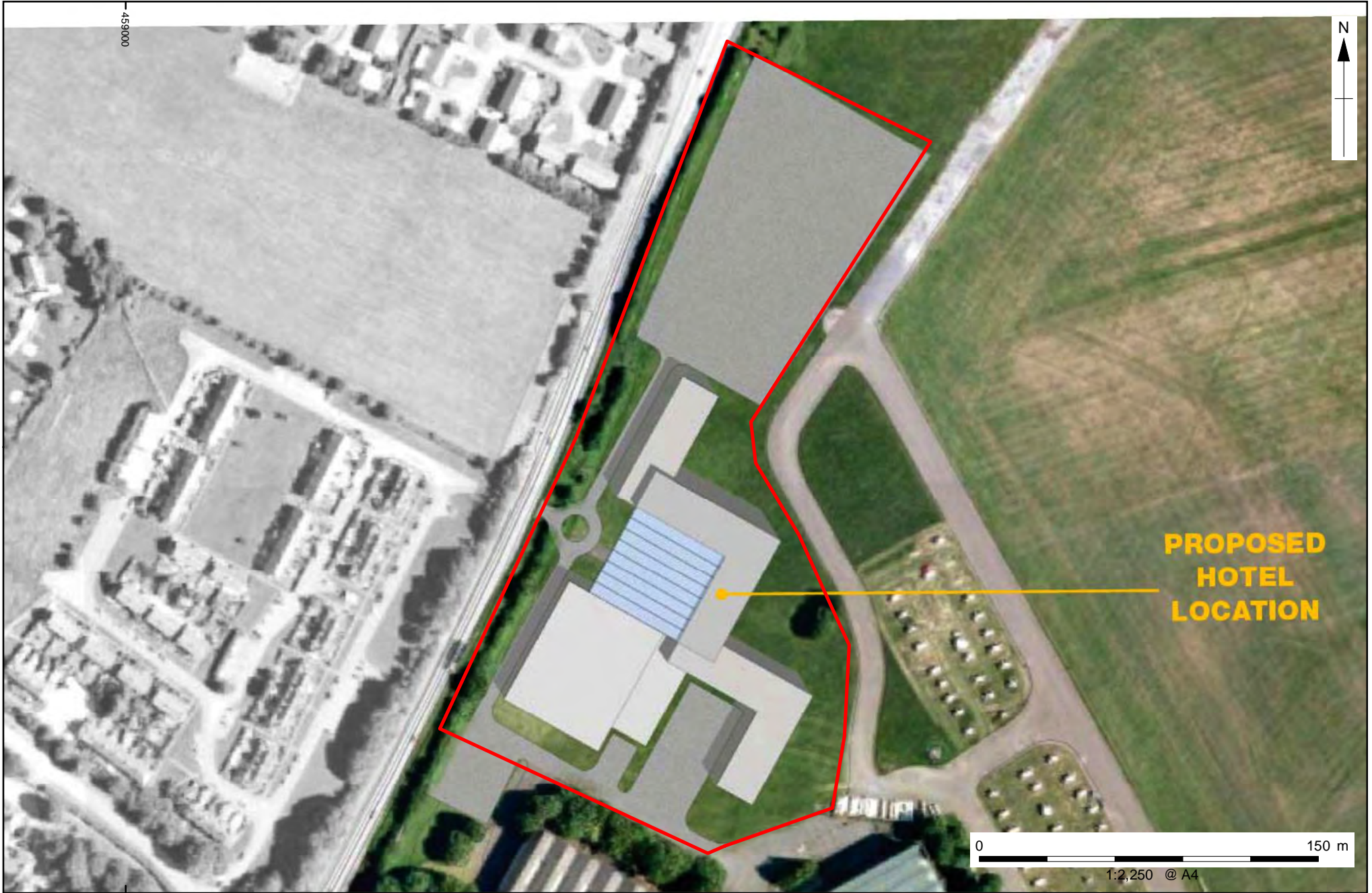


Figure 9: Proposed Scheme



Plate 1: General view looking north across the site



Plate 2: View southwest across the position of the aviation fuel installation



Plate 3: Scheduled anti-aircraft gun position and munition store along the western boundary



Plate 4: General view east across the site showing possible linear feature in the vicinity of First World War taxiway

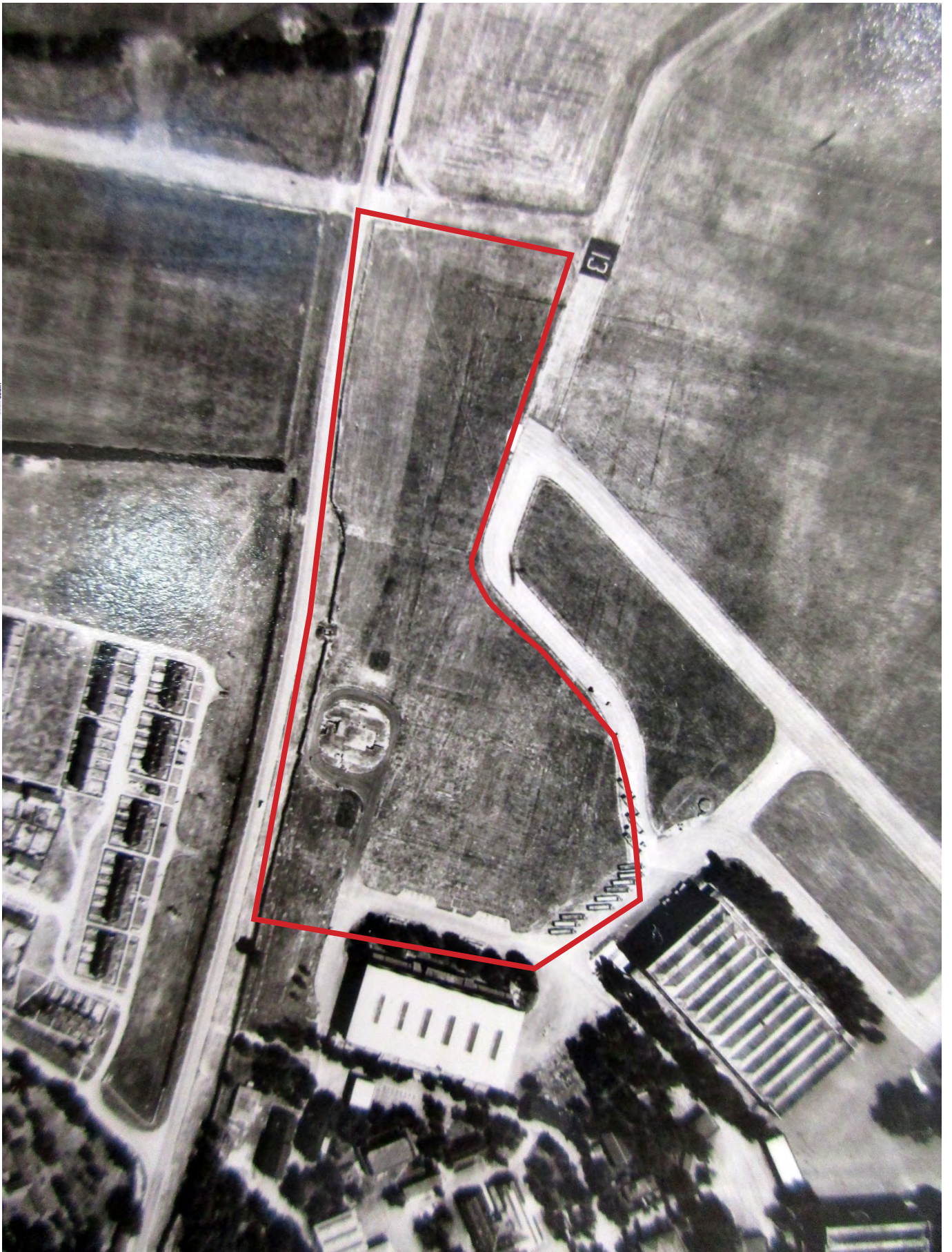


Plate 5: Aerial Photo from 1961 showing cropmarks relating to First World War building



Plate 6: Oblique photograph showing cropmark close to the location of known historic farmstead





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# **Bicester Heritage Centre**

## **Phase 1 Land Contamination and Ground Condition Report**

**In support of a Planning Application for the Development  
of a Hotel at Bicester Heritage Centre, Buckingham Road,  
Bicester, Oxfordshire  
OX27 8AL**

**Report Reference: CE-BI-1363-RP02-Final**



**Produced by Crestwood Environmental Ltd.**

**6<sup>th</sup> July 2018**

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This report has been prepared in good faith, with all reasonable skill, care and diligence, based on information provided or known available at the time of its preparation and within the scope of work agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

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# 1 INTRODUCTION

## 1.1 BACKGROUND

1.1.1 Crestwood Environmental Limited has been instructed by Bicester Heritage Centre (**'the Client'**), to undertake a Phase 1 Land Contamination report to assess the potential of land contamination and ground condition impacts on the proposed development of a Hotel (**'the Site'**) at Bicester Heritage Centre, Buckingham Road, Bicester, Oxfordshire, OX27 8AL. The Site is centred on National Grid Reference SP 59237 24739 (Easting 459237) (Northing 224739).

1.1.2 This Report addresses the environmental quality of the land conditions at the Site and establishes the impact and extent of any potential contamination in addition to any risks they may pose. It accompanies submission of an application for outline permission to build a Hotel.

## 1.2 THE SITE

1.2.1 The red line boundary shown on Figure 1 below indicates the extent of the proposed development area (**'the Site'**). The Site area is circa 5.1 hectares.

1.2.2 The Site is positioned within the Bicester Heritage Centre, to the immediate east of the A4421 Buckingham Road. It forms part of the former RAF Bicester Site. It is currently accessible by road from the A4421 at the entrance to the Bicester Heritage Centre; internal roads then provide further access to the area of the proposed development. The Site forms part of the former RAF Airfield, which is currently utilised by a gliding club.

**Figure 1 Site Boundary**



- 1.2.3 The ground of the Site is largely level and predominantly comprises grassland. A former and now derelict RAF bunker is located near the western boundary of the Site, adjacent to the A4421. A small electrical substation is also located on Site. A Site Walker survey was undertaken on 29 May 2018. A number of recently backfilled trenches were observed and it was explained by the Site's Property Projects Manager that these were used for archaeological trial pitting investigations to support the Planning Application for the proposed development. Photos taken during the Site Walkover survey are shown below.
- 1.2.4 Part of the Site was formerly used for the storage of underground fuel tanks. There was no visible evidence of pollution or ground staining from fuels or oils during the Site Walkover Survey.

**Plate 1      Grassland**



**Plate 2      Former Bunker (external view)**



**Plate 3 Former Bunker (internal view)**



**Plate 4 Electrical Substation**



**Plate 5      Backfilled Trial Pit**



**Plate 6      Backfilled Trial Pits**



### **1.3      THE PROPOSED DEVELOPMENT**

1.3.1      **The Proposed Development'** is located c. 1.5km north of the centre of Bicester and



immediately west of the former RAF airfield. It consists of the construction of a Hotel. In the vicinity of the Site land use comprises of mixed residential and agricultural land with access gained from the A4421 at the entrance to the Bicester Heritage site.

## **1.4 THE STUDY AREA**

1.4.1 The Study Area comprises the planning application boundary and surrounding environs to an extent and distance that might reasonably be judged to constitute source material with potential to impact on the Proposed Development.

## **1.5 REPORT PURPOSE**

1.5.1 The purpose of a Phase 1 Land Contamination and Ground Condition Report is to examine and establish the previous uses of the land at and near the Site and to identify potential sources of contamination, receptors and pathways. Information is then examined to indicate which likely source-pathway-receptor relationships can be identified and used to formulate a conceptual model. A Phase 1 report is a staged process involving data collection and interpretation. This is followed by reporting with recommendation of any further investigation which may be necessary.

## **1.6 LIMITATIONS**

1.6.1 Crestwood Environmental Ltd have had access to third party data for Phase II Land Quality Assessments and accompanying Technical Notes in consideration of this Phase 1 Report. These intrusive ground investigations were conducted by Carl Bro in 2003 with an updated investigation re-evaluating the findings undertaken in 2008 by Grontmij (formerly Carl Bro). Results of these assessments have been accepted on face value and have not been verified by Crestwood Environmental. We can accept no liability for issues arising out of the accuracy of these results although it is considered unlikely that ground conditions have altered significantly since these investigations were completed.

1.6.2 We have undertaken a basic review of the potential for buried ordnance at the Site. A Preliminary Unexploded Ordnance Risk Assessment of the Site was purchased from Groundsure in June 2018. This reports a Medium Risk of British/Allied unexploded ordnance in proximity to the Site and a low risk of German unexploded ordnance.

## **2 METHODOLOGY AND APPROACH**

2.1.1 The Phase 1 Report reviews information using a variety of sources of guidance as a basis, including the Environment Agency's Model Procedures for Management of Land Contamination CLR11 (Environment Agency, 2004), Section 2 of BS5930 (BSi, 2015) and Section 6 of BS10175 (BSi, 2013).

2.1.2 The Crestwood Environmental Ltd. methodology and approach aims to deliver a transparent and objective consideration toward assessment and evaluation of risk. The following process steps are followed to build up a preliminary model:

1. Assess the environmental setting;
2. Identify potential sources of contamination;
3. Identify receptors;
4. Formulate a conceptual model;
5. Assess information to inform likely source-pathway-receptor relationships; and
6. Evaluate risk.

2.1.3 Potential sources of contamination can be categorised according to the level of hazard (i.e. potential to lead to harm or pollution) as classified in Table 1.

**Table 1 Classification of sources of contamination**

Category	Examples of source potential for causing pollution/harm
<b>Very Low</b>	Greenfield land / Inert fill / made ground.
<b>Low</b>	Residential / office business / retail development on previously greenfield land.
<b>Moderate</b>	Light industry / engineering plant / pre-control landfill (pre mid-1970's).
<b>High</b>	Chemical works / heavy industrial works / non inert landfill (post 1970's).

2.1.4 Receptors can be classified as shown in the Table 2.

**Table 2 Categorisation of receptors**

Sensitivity	Examples of receptors by category
<b>Very Low</b>	Non-aquifer / low sensitivity watercourse / no WFD issues / no ecological designations / no business or properties.
<b>Low</b>	Minor aquifer / no WFD issues for surface water / industrial premises / low human exposure.
<b>Moderate</b>	Major aquifer / moderately sensitive water course / possible WFD compliance issues / human exposure (business / office).
<b>High</b>	Major aquifer-source protection zone / highly sensitive surface water / WFD compliance issues / SSSI or similar / extensive human access / residential land.

2.1.5 Desk top study, the Site Walkover Survey in 29th May 2018 and previous reports have been used to examine the Site setting, Site history, Site usage (historical and current), geology, hydrogeology and surface water drainage.

2.1.6 It is recognised that, depending on terrain and characteristics of both source and pathways (including geological atmospheric and hydrological factors), pollutants can potentially migrate away from a source distant to a site and have the potential to create impacts on receptors.

2.1.7 A conceptual model is then created which summarises the overall characteristics of the site under investigation relating to the geology, drainage, sources of contamination, pathways and receptors. Assessment is then made of the effectiveness of pollutant linkages in providing a pathway for any identified sources of contamination (hazards) being potentially

transferred to a receptor. Pollution linkage is categorised in terms of degrees of likelihood as shown in Table 3.

**Table 3 Probability of pollutant linkage**

Category	Definition (where pollutant linkage may be present)
<b>High Likelihood</b>	Long-term risk of occurrence almost certain or already evident.
<b>Likely</b>	Long-term risk of occurrence probable.
<b>Low Likelihood</b>	Long-term risk of occurrence possible, without certainty of any occurrence.
<b>Unlikely</b>	Circumstances for harm to occur are improbable.

2.1.8 Risk assessment is then carried out by use of a Risk Model which combines the relationship between the Source of contamination (the Hazard) and the Receptor which can be rated as potential severity of impact (or consequence of effect) categorised from severe to minor. This is shown in Table 4 with definitions of categories of severity.

**Table 4 Potential severity of impact**

Category	Definition
<b>Severe</b>	Acute risks to human health, catastrophic damage to property, major pollution of controlled waters.
<b>Medium</b>	Chronic risk to human health, pollution of controlled waters, significant damage to property.
<b>Mild</b>	Minor pollution of controlled waters, minor damage to property.
<b>Minor</b>	No measurable effect on humans or property, no observable effect on water quality or ecosystems.

2.1.9 The resulting risk is then evaluated for each receptor by considering the combined effects of potential severity of impact (Table 4) and the likelihood of effective pollutant linkage (Table 3). The overall Risk evaluation is shown in Table 5.

**Table 5 Resultant risk**

Probability ↓	Potential severity of impact			
	Severe	Medium	Mild	Minor
<b>High Likelihood</b>	Very high	High	Moderate	Moderate - Low
<b>Likely</b>	High	Moderate	Moderate - Low	Low
<b>Low Likelihood</b>	Moderate	Moderate - Low	Low	Negligible
<b>Unlikely</b>	Moderate - Low	Low	Negligible	Negligible

### 3 SITE HISTORY

3.1.1 Reference to historical maps and Groundsure Enviro-Insight Report show records from 1881 and indicates the Site and proximal environs to be predominantly agricultural land adjacent to the Roman Way to the west. There is a minor quarry to the south-east of the Site and the quarried area to the north, the site of the present day Stratton Audley Quarry. Hungerford Farm and Brashford Farm are located to the north while South Farm is towards

the south-east of the Site.

- 3.1.2 Up until 1899-1900 the Site and surrounding areas remain largely unchanged. The Site and adjoining fields to the south-east are noted as `allotments` and the quarry to the north appears to be disused and marked as `old quarry`.
- 3.1.3 On the 1922 map, the old quarry to the north is now operational and there are large buildings on the immediately north of the Site interspersed with smaller ones aligned along the western perimeter of the Site adjacent to the Roman Way. There are also buildings constructed on the south side of Skimmingdish Lane.
- 3.1.4 Between 1938 and 1952 the buildings described in the 1922 map are no longer depicted although there is a uniform line of single buildings on the opposite side of Roman Way. The map of 1955 shows no buildings and the Site contains no features other than the label `Airfield`. From 1968 to contemporary maps, buildings on the Site are as the present day. A residential area is established on the opposite side of Roman Way (A4421) and what appears to be army barracks with parade ground and tennis courts.
- 3.1.5 It is understood that the Site was first occupied by the Royal Flying Corps in 1920 and the RAF in 1928. The Site was used as a logistical centre and training facility by the RAF in World War II and thereafter for storage, maintenance, repair and salvage of aircraft and equipment until 1976, when RAF Bicester ceased being an active station. The United States Air Force reopened the facility in 1978 until 1994. However, the airfield continued to be used by the RAF until 2004. Since 2004 the airfield has been used solely by a local gliding club.

## **4 SITE SETTING**

### **4.1 LANDFORM**

- 4.1.1 The Site currently forms a portion of the former RAF Bicester and comprises a largely level topography of 80mAOD predominantly comprising grassland. Landform to the east and north are surrounded by gradually sloping land lowering marginally from 79mAOD on the Airfield to 73mAOD further towards the Langford Brook and tributaries to the east.

### **4.2 LOCAL ENVIRONS AND RECEPTORS**

- 4.2.1 Land to the immediate west of the Site comprises the A4421, beyond which to the west and north west is the residential area of Caversfield. The airfield is located to the immediate east and north east of the Site. Buildings and infrastructure associated with Bicester Heritage Centre (formerly RAF Bicester) are located to the immediate south.

### **4.3 GEOLOGY**

- 4.3.1 The British Geological Survey maps (BGS, 2016), for the area indicate that Site is underlain by medium to fine grained limestones of the Cornbrash Formation, which were formed approximately 164 to 168 million years ago in the Jurassic Period. These strata form beds

and reefs locally and are biogenic and detrial, generally containing shell and coral fragments.

4.3.2 There are no superficial deposits or drift geology recorded that overlie the Cornbrash Formation. Artificial ground and made deposits cover the bedrock strata with infilled ground interspersed locally.

4.3.3 Groundwater gradients in the Cornbrash Formation aquifer is thought to fall to the southeast. It is likely that the aquifer is effectively separated by low permeability strata between, but it is possible that there is some interaction in view of the fissured nature of the formations.

#### **4.4 HYDROGEOLOGY**

4.4.1 The bedrock and solid geology on the Site is designated a Secondary A aquifer of variable permeability which relates to the strata from which water abstractions are viable at some horizons. Yields however are temporally and spatially variable therefore intergranular and/or fracture flow would be moderate with the corresponding permeability modest.

4.4.2 Secondary A aquifers are generally considered to be minor aquifers consisting of permeable strata capable of potentially supporting water supply at a local level rather than a strategic level and in some cases form an integral source of base flow for rivers.

4.4.3 There are no Source Protection Zones (designated protection zones around public water supply abstractions) within the Site or within a 500m buffer zone.

4.4.4 The Environment Agency uses the Catchment Abstraction Management Strategy (CAMS) to determine the amount of water that is available for abstraction from a water source whether it be surface or groundwater in origin. The Site is positioned within the Cherwell, Thame and Wye CAMS area and was formed through the amalgamation of the Cherwell CAMS and the Thame and South Chilterns CAMS areas. It includes the whole length of the rivers` Cherwell, Thame and Wye along with their tributaries and covers an area of 2,200km<sup>2</sup>. Water is available for licencing in this area with new licences considered depending on local and downstream impacts.

4.4.5 In terms of groundwater, the principal resource is contained within the limestone unit of the Cornbrash Formation. Water resource availability for the Site itself is guided by surface water resource availability therefore varies greatly from high to low flows. Consumptive abstraction is thereby available for less than 30% of the time. During low flows, no water is available for licencing as the resource status of `Water available for licencing` is dictated and overridden by the flow requirements of the Thames.

#### **4.5 WATER ABSTRACTIONS**

4.5.1 Table 6 shows the ten identified historical and active Groundwater Abstraction Licences that have been granted within a 2km buffer zone of the Site.

**Table 6 Groundwater Abstractions**

Licence Number	Licence Holder	Point of Abstraction	Annual Volume (m <sup>3</sup> )	Use
28/39/14/0291	Brashfield Management Ltd	Brashfield House, Nr Bicester	Not Specified	Household Purposes
28/39/14/0315	Elworthy	Fringford Lodge Farm, Bicester	Not Specified	Household Purposes
28/39/14/0311	O'Neill	Stratton Audley, Bicester	Not Specified	General Farming and Domestic
28/39/14/0034	Sunlight Services Group Ltd	Buckingham Road, Bicester	Not Specified	General Use
28/39/14/0333	Gibbs Holdings Ltd	Buckingham Road, Bicester	Not Specified	General Use
28/39/14/0172	Gosling	Stratton Audley, Broughton	5683	General Farming and Domestic
28/39/14/0322	Deeley	Moat Farm, Caversfield	Not Specified	General Farming and Domestic
28/39/14/0348	W V Malins & Sons	Lords Farm	17520	General Farming and Domestic
28/39/14/0073	P A Evans & Son	Hareleys Farm, Laughton	Not Specified	General Farming and Domestic
28/39/14/0289	P A Evans & Son	Hareleys Farm, Laughton	Not Specified	General Farming and Domestic

4.5.2 There are also two Potable Water Abstraction Licences within 2km of the Site which utilise groundwater as the source. Refer to Table 7 below for details.

**Table 7 Potable Water Abstraction Licences**

Licence Number	Licence Holder	Point of Abstraction	Annual Volume	Use
28/39/14/0291	Brashfield Management	Brashfield House, Nr Bicester	Not Specified	Household Purposes
28/39/14/0315	Elworthy	Fringford Lodge Farm, Bicester	Not Specified	Household Purposes

4.5.3 Within a 2km radius of the Site there is one Surface Water Abstraction Licence recorded, the details of which are shown in Table 8 below.

**Table 8 Surface Water Abstractions**

Licence Number	Licence Holder /	Point of Abstraction	Annual Volume	Use
28/39/14/0335	PASKIN	West End, Laughton (tributary of the River Ray)	Not Specified	Make-Up or Top-Up Water

## **4.6 SURFACE WATER**

- 4.6.1 Within 1km of the Site surface water features includes a spring aligned to the south-east of the Site boundary; Langford Brook which is located to the west of the Site and flows in a north-west to south-west direction, and a tributary to the Langford Brook, the Audley Brook, is positioned to the east of the Site at c. 1km at the closest point and flows from the north-east to the south-east.

## **4.7 COAL MINING**

- 4.7.1 The Groundsure Report purchased in June 2018 details Coal Authority records, which state that there are no coal mining areas or associated brine affected areas within 75m of the Site; likewise there are no non-coal mining activities within 50m of the Site. No records of geological disturbances have been identified and no evidence in Coal Authority documentation of recent coal mining likely to affect the Proposed Development.

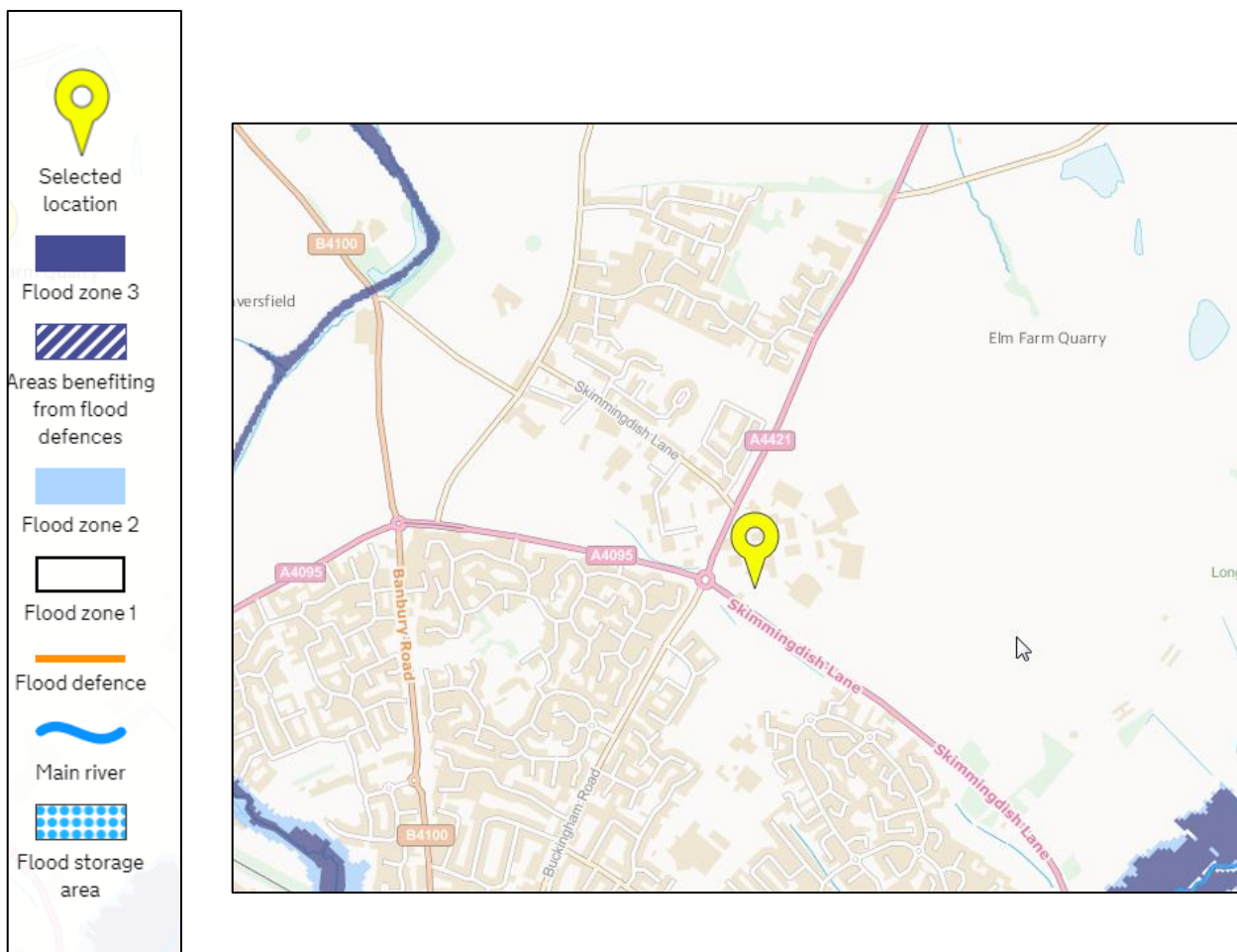
## **4.8 ENVIRONMENTALLY SENSITIVE SITES**

- 4.8.1 Records show that there is a geological Site of Special Scientific Interest, the Stratton Audley Quarries, circa 650m north east of the Site at the closest point. The Stratton Audley Quarries SSSI is formed of two parts, both located within the Site. The Natural England citation states that a large part of the Jurassic White Limestone, as well as the entire Forest Marble and Lower Cornbrash Limestone were exposed by quarrying. The quarry was an important location for studying facies changes which occur in the upper part of the White Limestone and in the Forest Marble. They were probably deposited as lime muds in restricted, brackish to freshwater lagoons. Natural England records go on to state: *“Both parts of the SSSI are completely submerged. The southern part has been largely infilled with waste material and the remaining area has filled with water so that even if an exposure had been retained along the south or eastern edges of the pit, it is completely inaccessible and there is no visible exposure. The northern part has also completely filled with water to form a large lake.”* It further states there are no practical means of restoring access to the interest feature and therefore the features must be assessed as ‘destroyed’.
- 4.8.2 There is a small isolated pocket of Priority Habitat – Deciduous Woodland circa 65m south of the Site at the closet point. A Local Nature Reserve (LNR), Bure Park, is located circa 1.5km to the south-west of the Site at the closest point.
- 4.8.3 Natural England specify that The Upper Thames Tributaries, positioned 1.5km to the south-east are Designated Environmentally Sensitive Areas and, according to DEFRA, the Site itself is sited on an existing Nitrate Vulnerable Zone. No other designated environmentally sensitive sites such as National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), World Heritage Sites, Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Green Belt Land or Ramsar Sites occupy any areas within a radius of 2km.

## 4.9 FLOOD RISK

The Environment Agency's Flood Risk Maps for Planning <https://flood-map-for-planning.service.gov.uk/> places the Site within a Flood Zone 1 where the risk of flooding is less than 0.1% which indicates properties in this location are likely to be at low probability of flooding (less than 1 in 1000 chance of surface water flooding in any given year). When a Site is positioned in Flood Zone 1, a flood risk assessment is not required unless it is greater than 1ha and is unaffected by sources of flooding other than rivers or seas, for instance, surface water drains. The Langford Brook which is aligned to the east and west of the Site is attributed to both medium and high risk of flooding (i.e. Flood Zone 1 and 2) as shown in the map extract below (red circle denotes the location of the Site).

**Diagram 1 Flood Risk Map**



## 4.10 RADON

4.10.1 The Site lies in an area which is not reported to require any special measures for Radon Protection for residential or similar development as set out in the Building Research establishment publication BR211.



## 5 INTERPRETATION AND ASSESSMENT

### 5.1 POTENTIAL SOURCES OF CONTAMINATION

5.1.1 Table 9 lists any location or feature from which there may be a potential source of contamination, i.e. hazard which in certain circumstances could cause harm or pollution.

**Table 9 Identification of potential sources and associated pollutants**

	Source	Associated Contaminants
Historic Sources	Fuel storage	Fuels, oils, other hydrocarbons, ground gas.
	Vehicle and aircraft maintenance	Solvents and degreasing agents
Current Sources	Derelict, unused flat land (gliding club)	None

### 5.2 RECEPTORS

5.2.1 The Receptors for consideration within the Site are:

- Construction-related operatives, during development of the Site;
- Future residents of the proposed hotel;
- Ecological systems;
- Groundwater beneath Site; and
- Surface water on Site.

### 5.3 CONCEPTUAL MODEL

5.3.1 A conceptual model is a descriptive/diagrammatic representation of the subject site which examines both above and below ground aspects and which identifies and considers surrounding areas for potential impacts on the subject site. To do this potential sources of contamination (hazards) are identified, the pathways for possible transmission of contaminants are considered and the potential receptors are identified.

5.3.2 At the Phase 1 investigation stage, the conceptual model is based upon a preliminary site walkover and a desk based study examining the evidence compiled from historical surveys and available data searches described in previous sections.

### 5.4 MIGRATION PATHWAYS

5.4.1 The pathways for consideration which might allow transfer (migration) of potentially harmful pollutants between source and receptors are:

- From ground beneath the Site, i.e. former airfield facilities and

- Lateral migration through geological strata of gas and/or liquid contamination arising from former airfield activities.

5.4.2 It is noted that in view of the former use of the land it is essentially a flat well drained area.

## 5.5 PRELIMINARY RISK ASSESSMENT

5.5.1 The assessment and preliminary evaluation of risk from the information gained through desk study and Site Walkover Survey is presented in Table 10. This sets out the relationships between source and receptor and combines potential severity of impact and likelihood of the event occurring. This is then summated into an overall preliminary risk assessment, referencing the Resultant Risk Matrix (Table 5, above).

**Table 10 Preliminary Phase 1 Risk Evaluation**

Source	Pathway	Receptor	Severity	Probability	Risk
Ground gas from made ground and natural strata	Migration in to excavations	Site workers	Severe	Unlikely	Low
	Migration in to properties	Residents	Severe	Unlikely	Low
Petroleum hydrocarbon compounds and associated organic and volatile organic compounds within shallow soil	Inhalation of vapour	Site workers / residents	Severe	Low	Mod / Low
	Ingestion and absorption		Severe	Low	Mod / Low
	Migration by liquid flow	Surface water	Minor	Unlikely	Negligible
		Groundwater	Mild	Low	Low
Plant uptake	Ecosystems	Minor	Unlikely	Negligible	
Solvents and degreasing agents associated with vehicle/aircraft maintenance	Migration in to excavations	Site workers	Severe	Unlikely	Low
	Migration in to properties	Residents	Severe	Unlikely	Low
	Migration by flow	Surface water	Minor	Unlikely	Negligible
	Migration by flow	Ground water	Minor	Unlikely	Negligible

## 6 CONCLUSION

6.1.1 There is little site investigation evidence of contamination on the Site of the proposed hotel development. Only four trial pits were dug in the area and two boreholes (one of which is lost). This low coverage may have been indicative of the view that this area was not the location of potentially high risk activities. There is no known anecdotal evidence from the trial pitting (for archaeological purposes) that any visual or olfactory evidence was apparent for contamination on this area. There was no apparent evidence indicative of contamination detected during the Site Walkover Survey, e.g. ground discolouration or plant die back.

6.1.2 In terms of petroleum hydrocarbons potentially migrating through the ground and affecting the Site, there is record of a spillage some 220m to the south of the Site at Building 113. Hydrogeological assessment would indicate that if there had indeed been any spillage it is likely that with time drainage of contaminants would be into groundwater which in turn would be likely to then discharge into surface watercourses. There is no reported

evidence of this happening and in any case is unlikely to have impact at the hotel location. Consequently this consideration is rated as low risk.

- 6.1.3 Potentially aggressive substances such as solvents and degreasing agents associated with vehicle and aircraft maintenance works do not appear to have been present in this area. It is in any case unlikely that even if present on the broader airfield site that these substances would migrate to the proposed hotel site.
- 6.1.4 It should be noted that even if there is mobility of contaminants most of the areas of the former operational RAF Bicester and airfield that would be identified as being of high risk of contamination i.e. the ordnance storage area, ESA, rifle range, fuel spill etc would need a pathway to move to the Site. This would be likely to be the upper minor aquifer (the Cornbrash). Movement of groundwater is likely to be to the southeast, i.e. away from the Site.
- 6.1.5 The assessment undertaken is a preliminary Phase 1 study which is intended to give an indication of conditions within the Site. On this basis, the risk of the proposed development being adversely affected by the condition of the land has been considered qualitatively based upon Site Walkover Survey and desk study. It is considered unlikely that ground conditions or potential pollutant sources identified would have any significant impact on the condition of the land or the receptors identified, including people.

## **7 SUMMARY**

- 7.1.1 A review of the Site setting and available information has been undertaken in relation to the proposed development of a Hotel. The review has been further developed into an assessment of a source-pathway-receptor model.
- 7.1.2 The main sources of pollutants identified as having the potential to impact receptors at the Site were determined as the existing ground materials including residual substances such as degreasing agents from aircraft maintenance and the ordnance storage area (circa 900m east south east of the Site), the rifle range, ESA, and the former reported fuel spillage on the airfield circa 220m to the south.
- 7.1.3 Review of historical maps indicates no evidence of other sources of contamination/pollution or any source material likely to cause significant risk to people or the environment. Similarly, there is no indication of intensive farming practice affecting the Site which might otherwise affect the ground condition present.
- 7.1.4 Operational activities at the airfield ceased in 1994. The latest intrusive results of site investigation are over ten years ago. Given the main pathway for mobilisation of any contaminants is likely to be in the minor aquifer conclusions have necessarily been based on longstanding data. It is however the case that many contaminants likely to be present in the source areas referred to in paragraph 7.1.2 e.g. metals, PAHs are not likely to be mobile in groundwater, and groundwater movement is to the south east.
- 7.1.5 Environment Agency flood risk maps indicate that the Site is within an area designated as low risk of surface water flooding.

7.1.6 Overall, it is concluded to be unlikely that ground conditions or potential pollutant sources identified would have any significant impact on the condition of the land or the receptors identified, including people, pursuant to the development of the Hotel.

**Site Details:**

459250, 224697

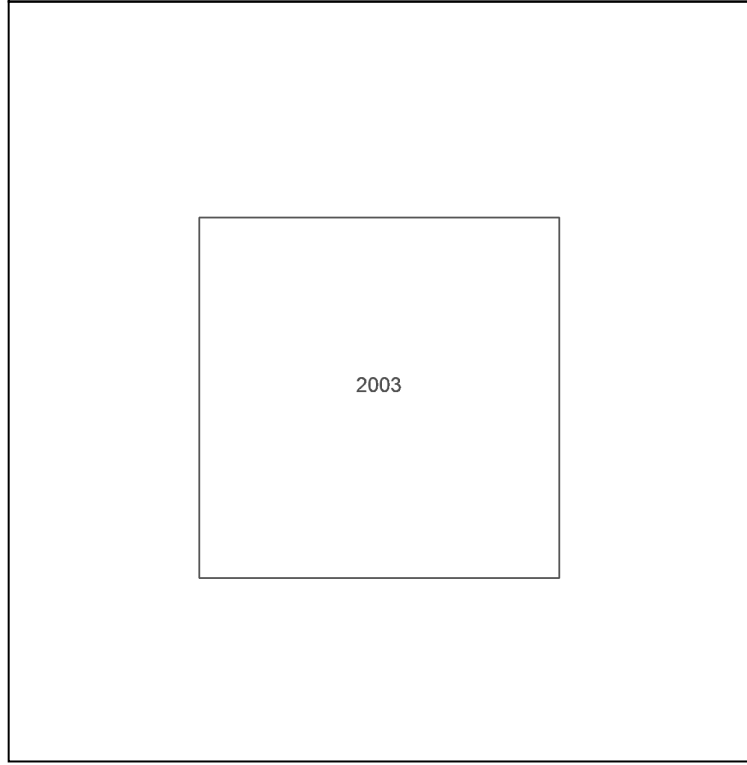
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**Report Ref:** GS-8608302\_Landline\_1\_1  
**Grid Ref:** 459237, 224617

**Map Name:** LandLine

**Map date:** 2003

**Scale:** 1:1,250

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**Site Details:**

459250, 224697

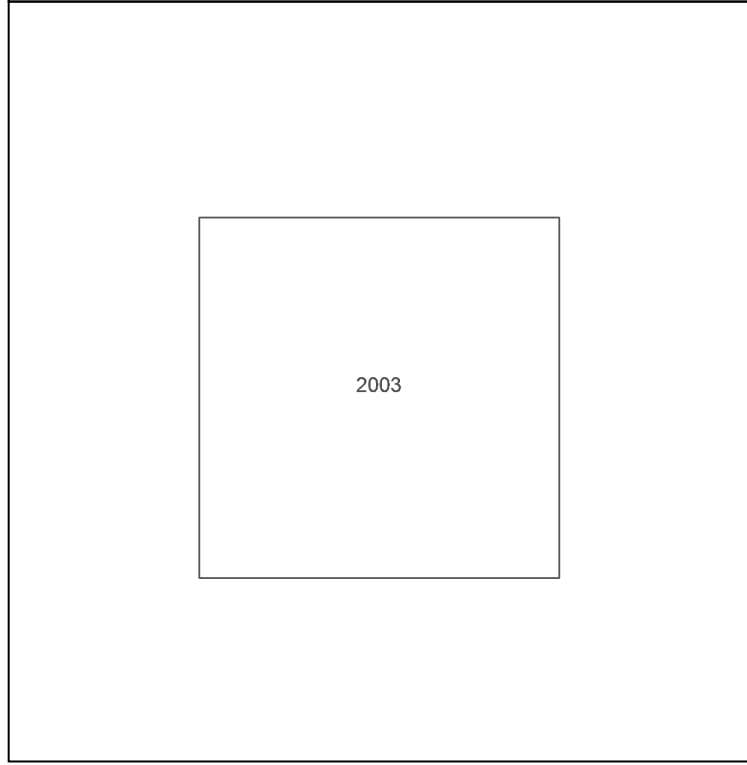
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**Grid Ref:** 459237, 224917

**Map Name:** LandLine

**Map date:** 2003

**Scale:** 1:1,250

**Printed at:** 1:1,250



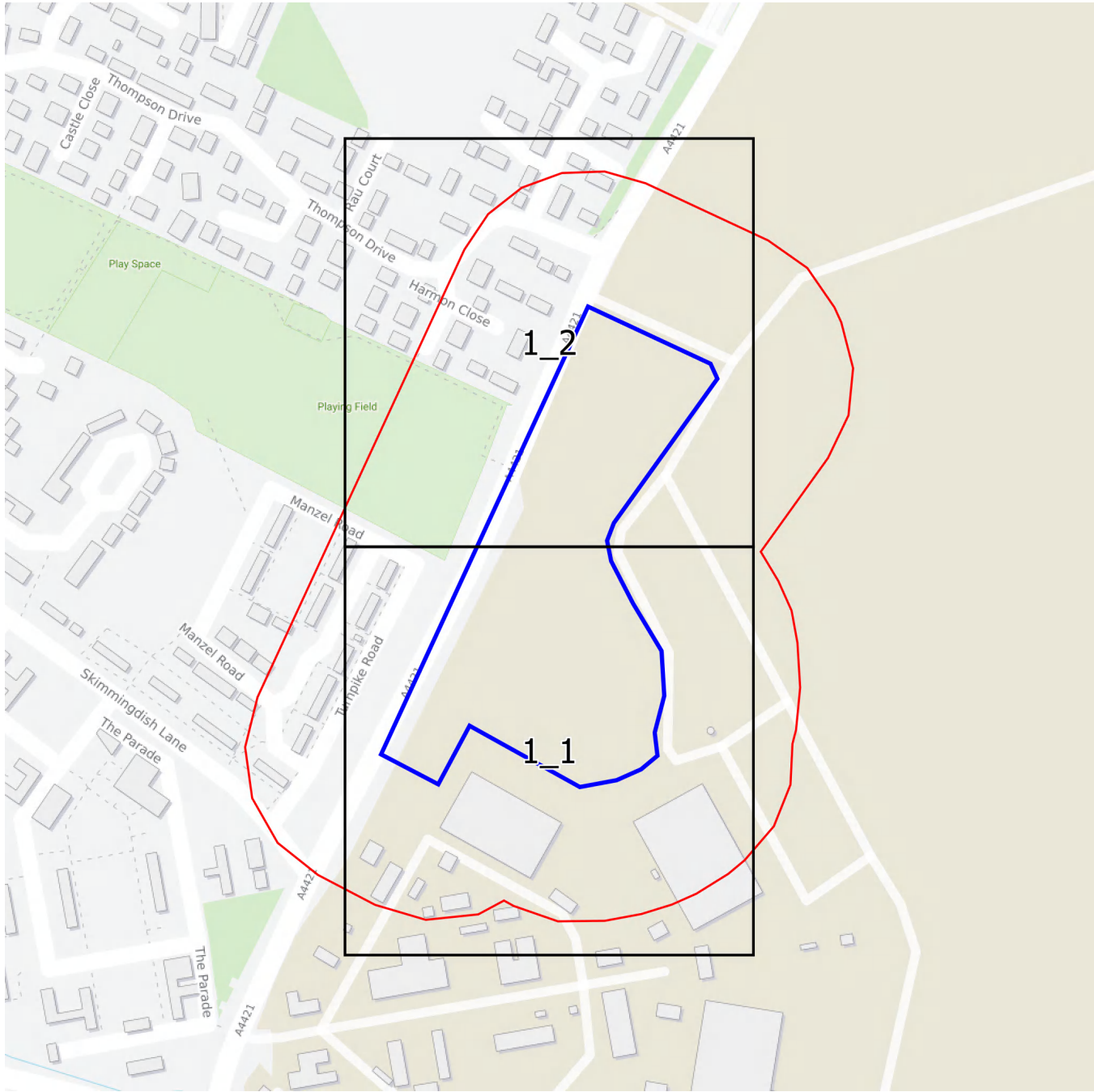
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Production date: 21 March 2022

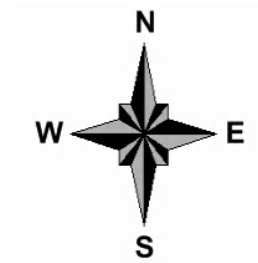
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**Groundsure**  
INSIGHTS

## Landline Scale Grid Index



459250, 224697

## Order Details

**Date:** 21/03/2022  
**Your ref:** 22457-GMNO  
**Our Ref:** GS-8608303  
**Client:** Jo Goring

## Site Details

**Location:** 459250 224765  
**Area:** 4.23 ha  
**Authority:** [Cherwell District Council](#)



**Summary of findings**

p. 2

**Aerial image**

p. 8

**OS MasterMap site plan**

p.13

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Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com)

08444 159 000



## Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
<b>14</b>	<b>1.1</b>	<b><u>Historical industrial land uses</u></b>	3	0	1	9	-
<b>15</b>	<b>1.2</b>	<b><u>Historical tanks</u></b>	0	3	3	4	-
<b>16</b>	<b>1.3</b>	<b><u>Historical energy features</u></b>	0	0	1	6	-
16	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	0	0	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
<b>18</b>	<b>2.1</b>	<b><u>Historical industrial land uses</u></b>	4	0	1	11	-
<b>19</b>	<b>2.2</b>	<b><u>Historical tanks</u></b>	0	3	3	11	-
<b>20</b>	<b>2.3</b>	<b><u>Historical energy features</u></b>	0	0	2	19	-
21	2.4	Historical petrol stations	0	0	0	0	-
21	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
22	3.1	Active or recent landfill	0	0	0	0	-
22	3.2	Historical landfill (BGS records)	0	0	0	0	-
23	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
23	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
23	3.5	Historical waste sites	0	0	0	0	-
23	3.6	Licensed waste sites	0	0	0	0	-
<b>23</b>	<b>3.7</b>	<b><u>Waste exemptions</u></b>	0	0	2	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
<b>25</b>	<b>4.1</b>	<b><u>Recent industrial land uses</u></b>	0	0	18	-	-
27	4.2	Current or recent petrol stations	0	0	0	0	-
27	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-



27	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
28	4.7	Regulated explosive sites	0	0	0	0	-
28	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
28	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
29	4.12	Radioactive Substance Authorisations	0	0	0	0	-
<b>29</b>	<b>4.13</b>	<b><u>Licensed Discharges to controlled waters</u></b>	0	0	0	<b>3</b>	-
29	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
30	4.15	Pollutant release to public sewer	0	0	0	0	-
30	4.16	List 1 Dangerous Substances	0	0	0	0	-
30	4.17	List 2 Dangerous Substances	0	0	0	0	-
30	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
30	4.19	Pollution inventory substances	0	0	0	0	-
31	4.20	Pollution inventory waste transfers	0	0	0	0	-
31	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
32	5.1	Superficial aquifer	None (within 500m)				
<b>33</b>	<b>5.2</b>	<b><u>Bedrock aquifer</u></b>	Identified (within 500m)				
<b>35</b>	<b>5.3</b>	<b><u>Groundwater vulnerability</u></b>	Identified (within 50m)				
<b>36</b>	<b>5.4</b>	<b><u>Groundwater vulnerability- soluble rock risk</u></b>	Identified (within 0m)				
36	5.5	Groundwater vulnerability- local information	None (within 0m)				
<b>37</b>	<b>5.6</b>	<b><u>Groundwater abstractions</u></b>	0	0	0	1	10
40	5.7	Surface water abstractions	0	0	0	0	0
<b>40</b>	<b>5.8</b>	<b><u>Potable abstractions</u></b>	0	0	0	1	1
41	5.9	Source Protection Zones	0	0	0	0	-
41	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
42	6.1	Water Network (OS MasterMap)	0	0	0	-	-



42	6.2	Surface water features	0	0	0	-	-
<b>43</b>	<b>6.3</b>	<b><u>WFD Surface water body catchments</u></b>	1	-	-	-	-
<b>43</b>	<b>6.4</b>	<b><u>WFD Surface water bodies</u></b>	0	0	0	-	-
<b>44</b>	<b>6.5</b>	<b><u>WFD Groundwater bodies</u></b>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
45	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
45	7.2	Historical Flood Events	0	0	0	-	-
45	7.3	Flood Defences	0	0	0	-	-
46	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
46	7.5	Flood Storage Areas	0	0	0	-	-
47	7.6	Flood Zone 2	None (within 50m)				
47	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
<b>48</b>	<b>8.1</b>	<b><u>Surface water flooding</u></b>	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
<b>50</b>	<b>9.1</b>	<b><u>Groundwater flooding</u></b>	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
<b>51</b>	<b>10.1</b>	<b><u>Sites of Special Scientific Interest (SSSI)</u></b>	0	0	0	0	2
52	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
52	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
52	10.4	Special Protection Areas (SPA)	0	0	0	0	0
52	10.5	National Nature Reserves (NNR)	0	0	0	0	0
<b>53</b>	<b>10.6</b>	<b><u>Local Nature Reserves (LNR)</u></b>	0	0	0	0	1
<b>53</b>	<b>10.7</b>	<b><u>Designated Ancient Woodland</u></b>	0	0	0	0	3
53	10.8	Biosphere Reserves	0	0	0	0	0
54	10.9	Forest Parks	0	0	0	0	0
54	10.10	Marine Conservation Zones	0	0	0	0	0
54	10.11	Green Belt	0	0	0	0	0
54	10.12	Proposed Ramsar sites	0	0	0	0	0



54	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
55	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
55	10.15	Nitrate Sensitive Areas	0	0	0	0	0
<b>55</b>	<b>10.16</b>	<b><u>Nitrate Vulnerable Zones</u></b>	2	0	0	0	2
<b>56</b>	<b>10.17</b>	<b><u>SSSI Impact Risk Zones</u></b>	1	-	-	-	-
<b>57</b>	<b>10.18</b>	<b><u>SSSI Units</u></b>	0	0	0	0	2
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
58	11.1	World Heritage Sites	0	0	0	-	-
59	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
59	11.3	National Parks	0	0	0	-	-
<b>59</b>	<b>11.4</b>	<b><u>Listed Buildings</u></b>	0	0	18	-	-
<b>61</b>	<b>11.5</b>	<b><u>Conservation Areas</u></b>	1	0	0	-	-
<b>61</b>	<b>11.6</b>	<b><u>Scheduled Ancient Monuments</u></b>	1	2	4	-	-
62	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
<b>63</b>	<b>12.1</b>	<b><u>Agricultural Land Classification</u></b>	Non Agricultural (within 250m)				
64	12.2	Open Access Land	0	0	0	-	-
64	12.3	Tree Felling Licences	0	0	0	-	-
64	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
<b>65</b>	<b>13.1</b>	<b><u>Priority Habitat Inventory</u></b>	0	0	4	-	-
66	13.2	Habitat Networks	0	0	0	-	-
66	13.3	Open Mosaic Habitat	0	0	0	-	-
66	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
<b>67</b>	<b>14.1</b>	<b><u>10k Availability</u></b>	Identified (within 500m)				
<b>68</b>	<b>14.2</b>	<b><u>Artificial and made ground (10k)</u></b>	0	0	0	1	-
69	14.3	Superficial geology (10k)	0	0	0	0	-



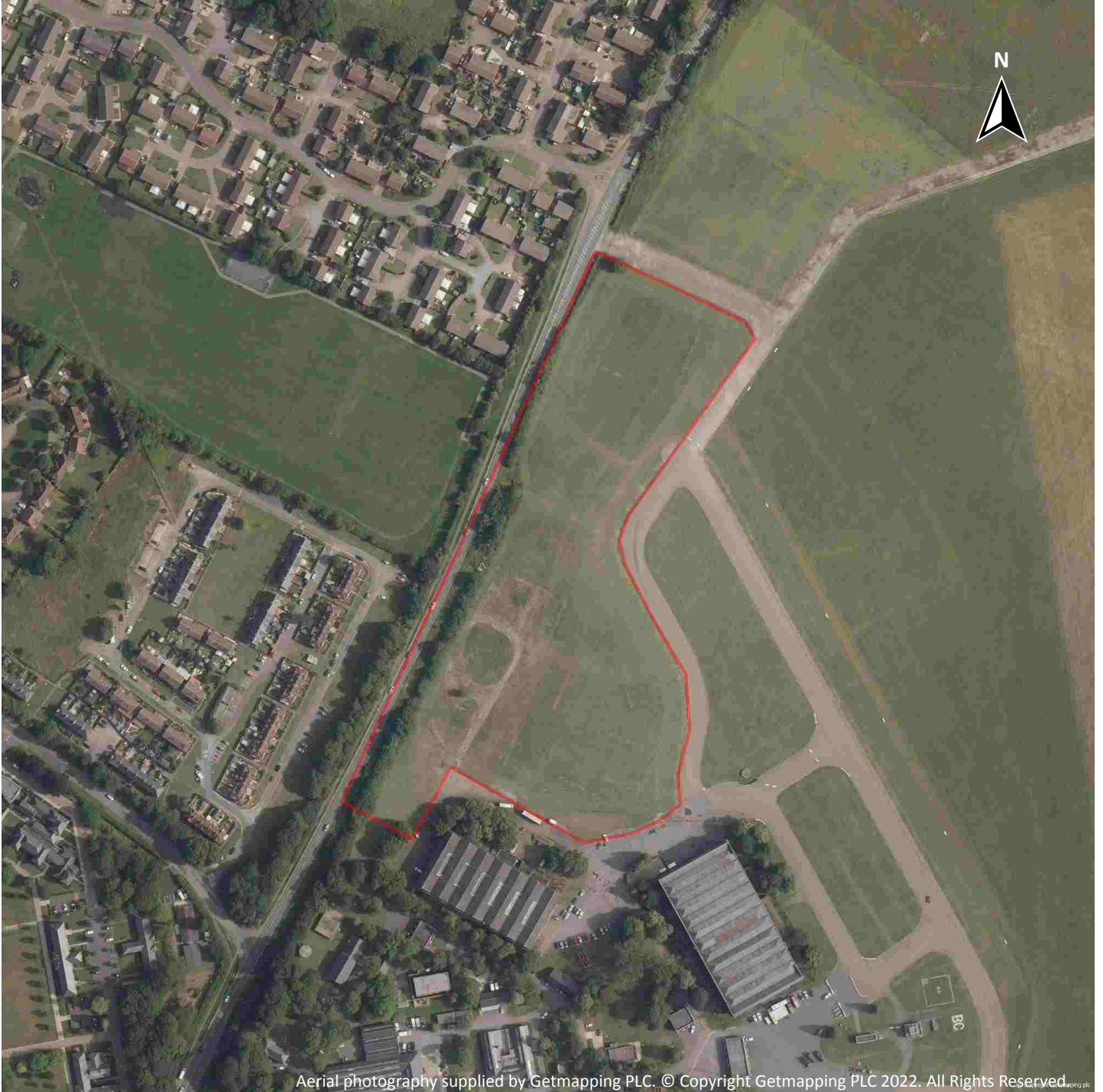
69	14.4	Landslip (10k)	0	0	0	0	-
<b>70</b>	<b>14.5</b>	<b><u>Bedrock geology (10k)</u></b>	1	0	2	0	-
71	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
<b>72</b>	<b>15.1</b>	<b><u>50k Availability</u></b>	Identified (within 500m)				
<b>73</b>	<b>15.2</b>	<b><u>Artificial and made ground (50k)</u></b>	0	0	0	1	-
74	15.3	Artificial ground permeability (50k)	0	0	-	-	-
75	15.4	Superficial geology (50k)	0	0	0	0	-
75	15.5	Superficial permeability (50k)	None (within 50m)				
75	15.6	Landslip (50k)	0	0	0	0	-
75	15.7	Landslip permeability (50k)	None (within 50m)				
<b>76</b>	<b>15.8</b>	<b><u>Bedrock geology (50k)</u></b>	1	0	1	0	-
<b>77</b>	<b>15.9</b>	<b><u>Bedrock permeability (50k)</u></b>	Identified (within 50m)				
77	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
<b>78</b>	<b>16.1</b>	<b><u>BGS Boreholes</u></b>	0	12	9	-	-
Page	Section	Natural ground subsidence					
<b>80</b>	<b>17.1</b>	<b><u>Shrink swell clays</u></b>	Negligible (within 50m)				
<b>81</b>	<b>17.2</b>	<b><u>Running sands</u></b>	Negligible (within 50m)				
<b>82</b>	<b>17.3</b>	<b><u>Compressible deposits</u></b>	Negligible (within 50m)				
<b>83</b>	<b>17.4</b>	<b><u>Collapsible deposits</u></b>	Very low (within 50m)				
<b>84</b>	<b>17.5</b>	<b><u>Landslides</u></b>	Very low (within 50m)				
<b>85</b>	<b>17.6</b>	<b><u>Ground dissolution of soluble rocks</u></b>	Very low (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
87	18.1	Natural cavities	0	0	0	0	-
<b>88</b>	<b>18.2</b>	<b><u>BritPits</u></b>	0	0	0	1	-
88	18.3	Surface ground workings	0	0	0	-	-
88	18.4	Underground workings	0	0	0	0	0
<b>88</b>	<b>18.5</b>	<b><u>Historical Mineral Planning Areas</u></b>	0	0	0	1	-



89	18.6	Non-coal mining	0	0	0	0	0
89	18.7	Mining cavities	0	0	0	0	0
89	18.8	JPB mining areas	None (within 0m)				
89	18.9	Coal mining	None (within 0m)				
90	18.10	Brine areas	None (within 0m)				
90	18.11	Gypsum areas	None (within 0m)				
90	18.12	Tin mining	None (within 0m)				
90	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
<b>91</b>	<b>19.1</b>	<b>Radon</b>	<b>Less than 1% (within 0m)</b>				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
<b>92</b>	<b>20.1</b>	<b><u>BGS Estimated Background Soil Chemistry</u></b>	<b>1</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>-</b>
92	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
92	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
93	21.1	Underground railways (London)	0	0	0	-	-
93	21.2	Underground railways (Non-London)	0	0	0	-	-
93	21.3	Railway tunnels	0	0	0	-	-
93	21.4	Historical railway and tunnel features	0	0	0	-	-
93	21.5	Royal Mail tunnels	0	0	0	-	-
94	21.6	Historical railways	0	0	0	-	-
94	21.7	Railways	0	0	0	-	-
94	21.8	Crossrail 1	0	0	0	0	-
94	21.9	Crossrail 2	0	0	0	0	-
94	21.10	HS2	0	0	0	0	-



## Recent aerial photograph



Capture Date: 05/07/2019

Site Area: 4.23ha



## Recent site history - 2018 aerial photograph



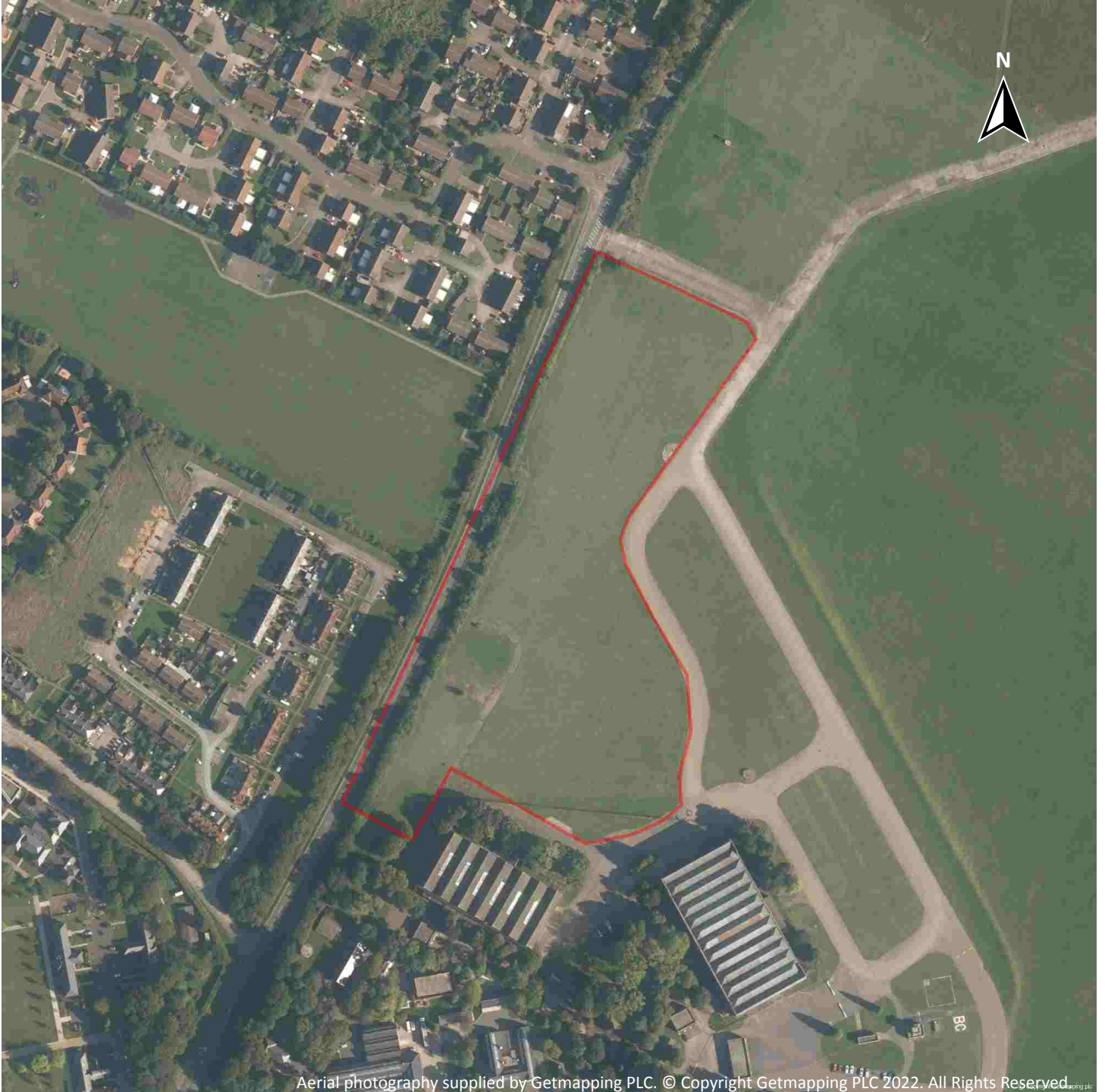
Capture Date: 29/10/2018

Site Area: 4.23ha





## Recent site history - 2015 aerial photograph



Capture Date: 06/09/2015

Site Area: 4.23ha



## Recent site history - 2006 aerial photograph



Capture Date: 29/10/2006

Site Area: 4.23ha



## Recent site history - 1999 aerial photograph



Capture Date: 05/10/1999

Site Area: 4.23ha





# 1 Past land use



**Site Outline**

**Search buffers in metres (m)**

- Historical industrial land uses
- Historical tanks
- Historical energy features

## 1.1 Historical industrial land uses

**Records within 500m** **13**

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	On site	Airfield	1982 - 1985	1783944

ID	Location	Land use	Dates present	Group ID
<b>A</b>	<b>On site</b>	<b>Airfield</b>	<b>1966 - 1970</b>	<b>1796876</b>
<b>A</b>	<b>On site</b>	<b>Airfield</b>	<b>1995</b>	<b>1816519</b>
1	57m N	Airfield	1950	1788215
D	323m NE	Electric Substation	1980	1773909
E	350m N	Unspecified Pit	1938	1794597
E	356m N	Unspecified Pit	1950	1808807
E	356m N	Unspecified Pit	1898	1816505
F	364m NE	Unspecified Quarry	1938 - 1950	1826756
F	384m NE	Unspecified Old Quarry	1898	1773012
H	430m S	Sewage Farm	1970	1774086
H	448m S	Filter Beds	1970	1761020
H	480m S	Unspecified Tanks	1950	1761668

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.2 Historical tanks

**Records within 500m**

**10**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
B	32m E	Unspecified Tank	1990	289744
B	35m E	Unspecified Tank	1966	293136
B	35m E	Unspecified Tank	1994	290596
C	85m SW	Unspecified Tank	1966	290864
C	86m SW	Unspecified Tank	1994	288297
C	86m SW	Unspecified Tank	1990	289063



ID	Location	Land use	Dates present	Group ID
3	311m SE	Unspecified Tank	1966 - 1990	294496
4	399m W	Tanks	1995 - 1999	289575
5	410m S	Tanks	1966 - 1994	296352
7	497m N	Tanks	1996	287653

This data is sourced from Ordnance Survey / Groundsure.

### 1.3 Historical energy features

<b>Records within 500m</b>	<b>7</b>
----------------------------	----------

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
2	109m NW	Electricity Substation	1990 - 1994	184466
D	318m N	Electricity Substation	1990	172949
D	318m N	Electricity Substation	1994	174536
D	319m N	Electricity Substation	1975	175852
G	428m SW	Electricity Substation	1995 - 1999	175989
G	446m SW	Electricity Substation	1992 - 1993	185868
6	474m NW	Electricity Substation	1991 - 1999	179902

This data is sourced from Ordnance Survey / Groundsure.

### 1.4 Historical petrol stations

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.



*This data is sourced from Ordnance Survey / Groundsure.*

## 1.5 Historical garages

**Records within 500m**

**0**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.6 Historical military land

**Records within 500m**

**0**

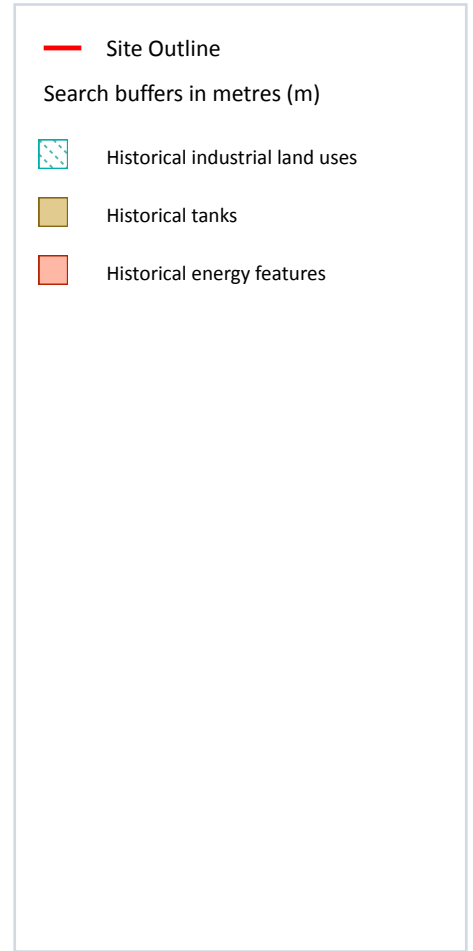
Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

*This data is sourced from Ordnance Survey / Groundsure / other sources.*





## 2 Past land use - un-grouped



### 2.1 Historical industrial land uses

Records within 500m

16

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
A	On site	Airfield	1966	1796876
A	On site	Airfield	1985	1783944
A	On site	Airfield	1970	1796876

ID	Location	Land Use	Date	Group ID
<b>A</b>	<b>On site</b>	<b>Airfield</b>	<b>1995</b>	<b>1816519</b>
1	57m N	Airfield	1950	1788215
F	323m NE	Electric Substation	1980	1773909
G	350m N	Unspecified Pit	1938	1794597
G	350m N	Unspecified Pit	1938	1794597
G	356m N	Unspecified Pit	1898	1816505
G	356m N	Unspecified Pit	1950	1808807
H	364m NE	Unspecified Quarry	1938	1826756
H	364m NE	Unspecified Quarry	1950	1826756
H	384m NE	Unspecified Old Quarry	1898	1773012
L	430m S	Sewage Farm	1970	1774086
L	448m S	Filter Beds	1970	1761020
L	480m S	Unspecified Tanks	1950	1761668

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.2 Historical tanks

### Records within 500m

**17**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
B	32m E	Unspecified Tank	1990	289744
B	35m E	Unspecified Tank	1966	293136
B	35m E	Unspecified Tank	1994	290596
C	85m SW	Unspecified Tank	1966	290864
C	86m SW	Unspecified Tank	1990	289063
C	86m SW	Unspecified Tank	1994	288297
E	311m SE	Unspecified Tank	1990	294496



ID	Location	Land Use	Date	Group ID
E	312m SE	Unspecified Tank	1966	294496
I	399m W	Tanks	1995	289575
I	399m W	Tanks	1999	289575
I	399m W	Tanks	1996	289575
I	399m W	Tanks	1996	289575
I	399m W	Tanks	1995	289575
J	410m S	Tanks	1966	296352
J	410m S	Tanks	1990	296352
J	410m S	Tanks	1994	296352
2	497m N	Tanks	1996	287653

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.3 Historical energy features

### Records within 500m

**21**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
D	109m NW	Electricity Substation	1994	184466
D	111m NW	Electricity Substation	1990	184466
F	318m N	Electricity Substation	1990	172949
F	318m N	Electricity Substation	1994	174536
F	319m N	Electricity Substation	1975	175852
K	428m SW	Electricity Substation	1995	175989
K	428m SW	Electricity Substation	1999	175989
K	428m SW	Electricity Substation	1996	175989
K	428m SW	Electricity Substation	1996	175989
K	428m SW	Electricity Substation	1995	175989



ID	Location	Land Use	Date	Group ID
K	446m SW	Electricity Substation	1992	185868
K	446m SW	Electricity Substation	1992	185868
K	446m SW	Electricity Substation	1993	185868
M	474m NW	Electricity Substation	1995	179902
M	474m NW	Electricity Substation	1999	179902
M	474m NW	Electricity Substation	1996	179902
M	474m NW	Electricity Substation	1996	179902
M	474m NW	Electricity Substation	1995	179902
M	476m NW	Electricity Substation	1991	179902
M	476m NW	Electricity Substation	1992	179902
M	477m NW	Electricity Substation	1993	179902

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.4 Historical petrol stations

**Records within 500m**

**0**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.5 Historical garages

**Records within 500m**

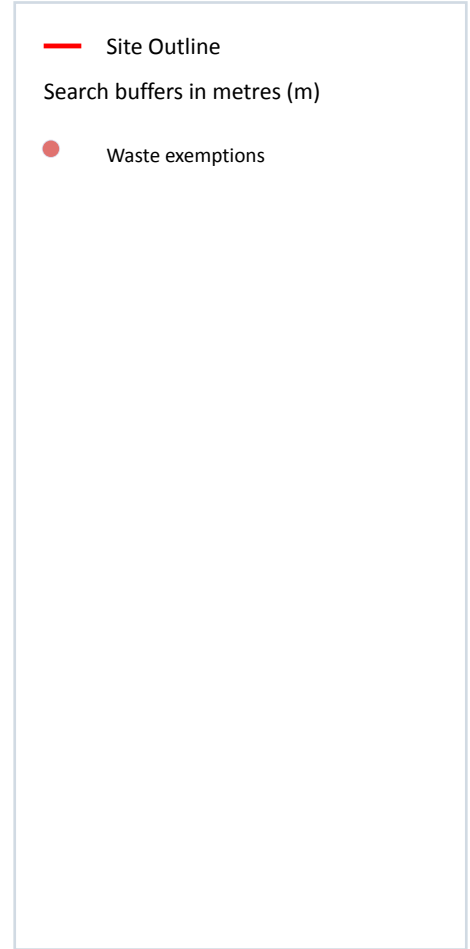
**0**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*



## 3 Waste and landfill



### 3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

*This data is sourced from the British Geological Survey.*

### 3.3 Historical landfill (LA/mapping records)

Records within 500m

0

Landfill sites identified from Local Authority records and high detail historical mapping.

*This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.*

### 3.4 Historical landfill (EA/NRW records)

Records within 500m

0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 3.5 Historical waste sites

Records within 500m

0

Waste site records derived from Local Authority planning records and high detail historical mapping.

*This data is sourced from Ordnance Survey/Groundsure and Local Authority records.*

### 3.6 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 3.7 Waste exemptions

Records within 500m

3

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 22**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	135m W	Taylor Wimpey Site, Skimmingdish Lane, Bicester, Oxford, OX27 8UW	WEX180183	Using waste exemption	Not on a farm	Use of waste in construction
2	234m S	LNT Construction Site, Skimmingdish Lane, Bicester, OX26 5AD	WEX184944	Using waste exemption	Not on a farm	Use of waste in construction
3	412m N	HB Timber Yard, Buckingham Road, Caversfield, Bicester, OX27 8RE	WEX103362	Storing waste exemption	Not on a farm	Storage of waste in a secure place

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 4 Current industrial land use



**— Site Outline**

**Search buffers in metres (m)**

- Recent industrial land uses
- Licensed Discharges to controlled waters

### 4.1 Recent industrial land uses

**Records within 250m** **18**

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Company	Address	Activity	Category
A	58m S	Vintage Tyres	Building 94 2 Bicester Heritage, Buckingham Road, Bicester, Oxfordshire, OX27 8AL	Vehicle Parts and Accessories	Motoring
1	96m SW	Tank	Oxfordshire, OX27	Tanks (Generic)	Industrial Features
A	103m S	Electricity Sub Stations	Oxfordshire, OX27	Electrical Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
B	107m SW	Classic Oils	96 Buckingham Road, Bicester Heritage, Bicester, Oxfordshire, OX27 8AL	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	107m SW	K W Special Projects	Building 119 Bicester Heritage, Buckingham Road, Bicester, Oxfordshire, OX27 8AL	Aviation Engineers	Engineering Services
B	107m SW	Historit Ltd	Buckingham Road, Bicester, Oxfordshire, OX27 8AL	Container and Storage	Transport, Storage and Delivery
B	107m SW	J Exley Engineering Ltd	Bicester Heritage, Buckingham Road, Bicester, Oxfordshire, OX27 8AL	Vehicle Repair, Testing and Servicing	Repair and Servicing
2	113m NW	Electricity Sub Station	Oxfordshire, OX27	Electrical Features	Infrastructure and Facilities
C	114m S	Legends Automotive Ltd	Building 105 3 Bicester Heritage, Buckingham Road, Bicester, Oxfordshire, OX27 8AL	Vehicle Repair, Testing and Servicing	Repair and Servicing
C	115m S	Bicester Heritage	Buckingham Road, Bicester, Oxfordshire, OX27	Vehicle Repair, Testing and Servicing	Repair and Servicing
3	117m SW	2507 Bicester Squadron Air Training Corps	Skimmingdish Lane, Bicester, Oxfordshire, OX27 8UF	Armed Services	Central and Local Government
A	124m S	Classic Performance Engineering Ltd	Unit 90 Bicester Heritage, Buckingham Road, Bicester, Oxfordshire, OX27	Vehicle Repair, Testing and Servicing	Repair and Servicing
4	127m N	Supaclean Chemicals Ltd	14, Montgomery Road, Caversfield, Bicester, Oxfordshire, OX27 8FG	Colours, Chemicals and Water Softeners and Supplies	Industrial Products
5	151m W	Electricity Sub Station	Oxfordshire, OX27	Electrical Features	Infrastructure and Facilities
D	206m SW	The Motor Shed Ltd	Buckingham Road, Bicester, Oxfordshire, OX27	Vehicle Repair, Testing and Servicing	Repair and Servicing
D	206m SW	Vintage Car Radiator Co	Buckingham Road, Bicester, Oxfordshire, OX27	Vehicle Components	Industrial Products
6	209m NW	Tony Wilkins Plastering	3, Rau Court, Caversfield, Bicester, Oxfordshire, OX27 8FF	General Construction Supplies	Industrial Products
7	236m NW	Electricity Sub Station	Oxfordshire, OX27	Electrical Features	Infrastructure and Facilities



*This data is sourced from Ordnance Survey.*

## 4.2 Current or recent petrol stations

Records within 500m	0
---------------------	---

Open, closed, under development and obsolete petrol stations.

*This data is sourced from Experian.*

## 4.3 Electricity cables

Records within 500m	0
---------------------	---

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

## 4.4 Gas pipelines

Records within 500m	0
---------------------	---

High pressure underground gas transmission pipelines.

*This data is sourced from National Grid.*

## 4.5 Sites determined as Contaminated Land

Records within 500m	0
---------------------	---

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

*This data is sourced from Local Authority records.*

## 4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0
---------------------	---

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

*This data is sourced from the Health and Safety Executive.*



## 4.7 Regulated explosive sites

**Records within 500m** **0**

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

*This data is sourced from the Health and Safety Executive.*

## 4.8 Hazardous substance storage/usage

**Records within 500m** **0**

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

*This data is sourced from Local Authority records.*

## 4.9 Historical licensed industrial activities (IPC)

**Records within 500m** **0**

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.10 Licensed industrial activities (Part A(1))

**Records within 500m** **0**

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.11 Licensed pollutant release (Part A(2)/B)

**Records within 500m** **0**

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

*This data is sourced from Local Authority records.*

## 4.12 Radioactive Substance Authorisations

**Records within 500m**
**0**

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.13 Licensed Discharges to controlled waters

**Records within 500m**
**3**

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Address	Details	
E	362m N	BRASHFIELD HOUSE, BICESTER, OXON, BRASHFIELD HOUSE BICESTER OXON	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CTCU.1068 Permit Version: 1 Receiving Water: CORNBRAH STRATA	Status: TRANSFERRED FROM WRA 1963 Issue date: 06/08/1981 Effective Date: 06/08/1981 Revocation Date: 11/05/2007
E	362m N	BRASHFIELD HOUSE, BICESTER, OXON, BRASHFIELD HOUSE BICESTER OXON	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CTCU.1068 Permit Version: 2 Receiving Water: CORNBRAH STRATA	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 12/05/2007 Effective Date: 12/05/2007 Revocation Date: 20/12/2012
E	362m N	BRASHFIELD HOUSE, BICESTER, OXON, BRASHFIELD HOUSE BICESTER OXON	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CTCU.1068 Permit Version: 3 Receiving Water: CORNBRAH STRATA	Status: VARIED UNDER EPR 2010 Issue date: 21/12/2012 Effective Date: 21/12/2012 Revocation Date: -

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.14 Pollutant release to surface waters (Red List)

**Records within 500m**
**0**

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



#### 4.15 Pollutant release to public sewer

Records within 500m	0
---------------------	---

Discharges of Special Category Effluents to the public sewer.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.16 List 1 Dangerous Substances

Records within 500m	0
---------------------	---

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.17 List 2 Dangerous Substances

Records within 500m	0
---------------------	---

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.18 Pollution Incidents (EA/NRW)

Records within 500m	0
---------------------	---

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.19 Pollution inventory substances

Records within 500m	0
---------------------	---

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

*This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.*



## 4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

*This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.*

## 4.21 Pollution inventory radioactive waste

Records within 500m

0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

*This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.*

## 5 Hydrogeology - Superficial aquifer

### 5.1 Superficial aquifer

Records within 500m

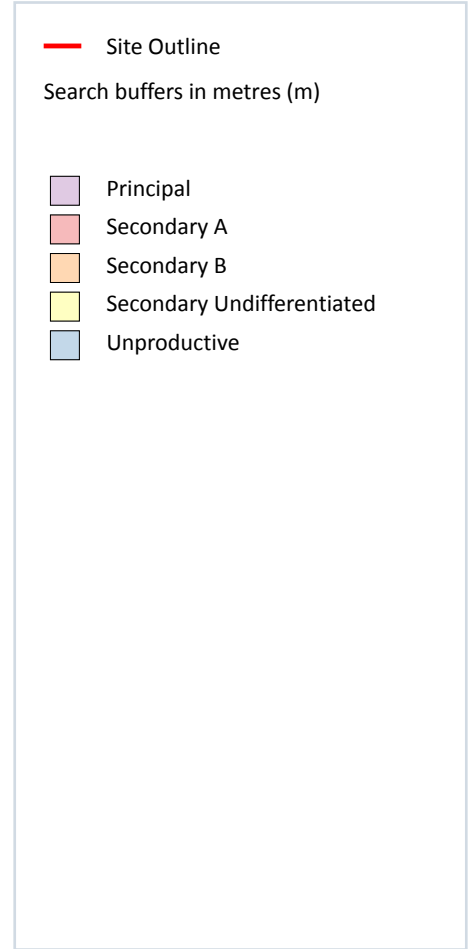
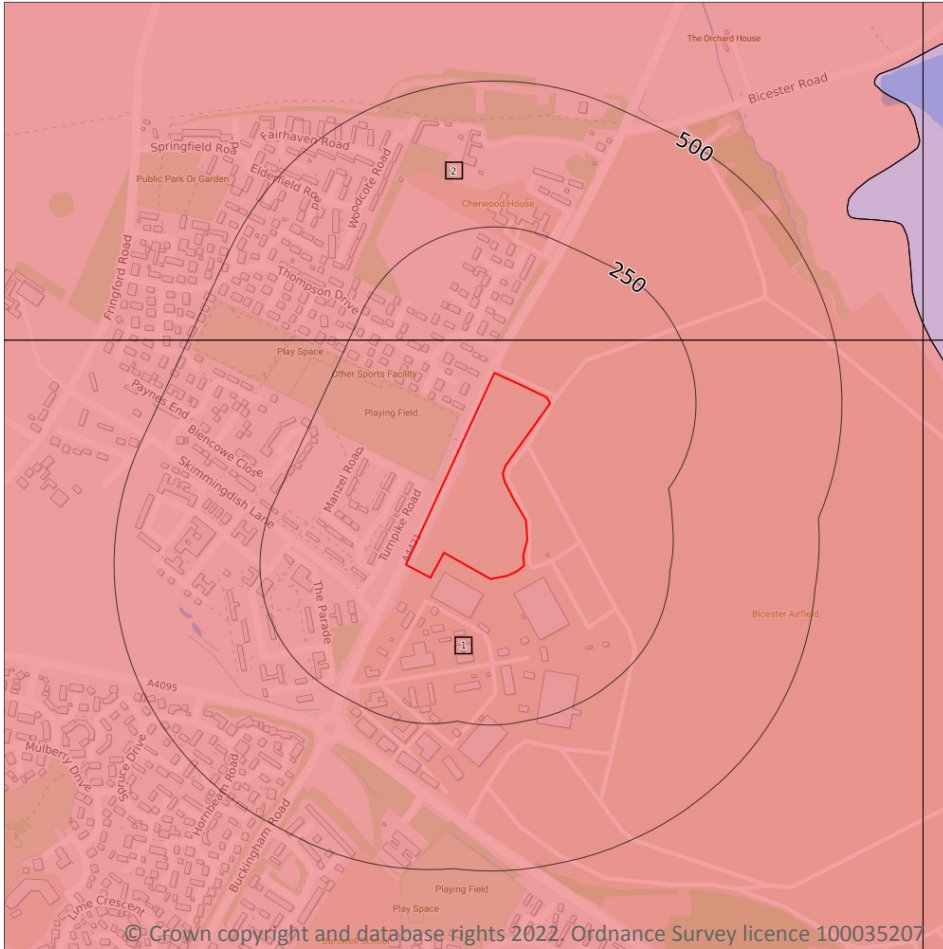
0

Aquifer status of groundwater held within superficial geology.

*This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.*



## Bedrock aquifer



### 5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 33**

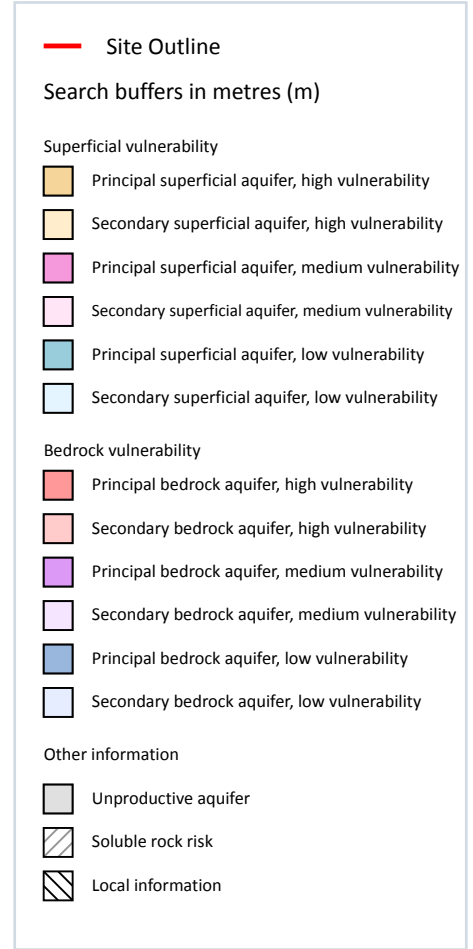
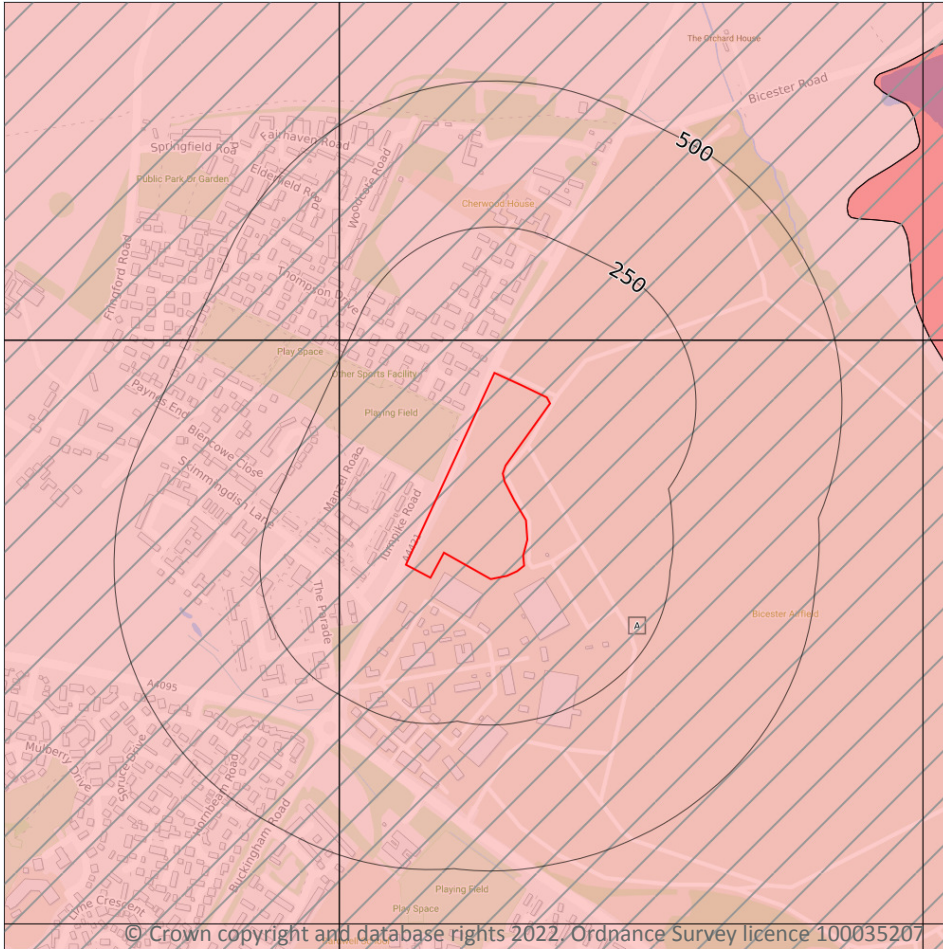
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	56m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers



*This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.*



## Groundwater vulnerability



### 5.3 Groundwater vulnerability

Records within 50m

1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 35**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
A	On site	<b>Summary Classification:</b> Secondary bedrock aquifer - High Vulnerability <b>Combined classification:</b> Productive Bedrock Aquifer, No Superficial Aquifer	<b>Leaching class:</b> High <b>Infiltration value:</b> >70% <b>Dilution value:</b> <300mm/year	<b>Vulnerability:</b> - <b>Aquifer type:</b> - <b>Thickness:</b> <3m <b>Patchiness value:</b> <90% <b>Recharge potential:</b> No Data	<b>Vulnerability:</b> High <b>Aquifer type:</b> Secondary <b>Flow mechanism:</b> Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

## 5.4 Groundwater vulnerability- soluble rock risk

<b>Records on site</b>	<b>1</b>
------------------------	----------

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
A	<b>Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.</b>	<b>93.0%</b>

This data is sourced from the British Geological Survey and the Environment Agency.

## 5.5 Groundwater vulnerability- local information

<b>Records on site</b>	<b>0</b>
------------------------	----------

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.

## Abstractions and Source Protection Zones



### 5.6 Groundwater abstractions

Records within 2000m

11

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 37**

ID	Location	Details	
A	357m N	Status: Historical Licence No: 28/39/14/0291 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: BRASHFIELD HOUSE, NR BICESTER, OXON Data Type: Point Name: BRASHFIELD MANAGEMENT LTD Easting: 459300 Northing: 225300	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 17/11/1980 Expiry Date: - Issue No: 100 Version Start Date: 30/01/1987 Version End Date: -
-	984m N	Status: Historical Licence No: 28/39/14/0315 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: FRINGFORD LODGE FARM, BICESTER, OXON Data Type: Point Name: ELWORTHY Easting: 459500 Northing: 225900	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 09/03/1992 Expiry Date: - Issue No: 101 Version Start Date: 04/06/2003 Version End Date: -
-	984m N	Status: Historical Licence No: 28/39/14/0315 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: FRINGFORD LODGE FARM, BICESTER, OXON Data Type: Point Name: ELWORTHY Easting: 459500 Northing: 225900	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 09/03/1992 Expiry Date: - Issue No: 101 Version Start Date: 04/06/2003 Version End Date: -
-	1224m SW	Status: Historical Licence No: 28/39/14/0034 Details: General use relating to Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: BUCKINGHAM ROAD, BICESTER, - BOREHOLE 'A' Data Type: Point Name: SUNLIGHT SERVICE GROUP LTD Easting: 458510 Northing: 223550	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 13/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/12/1996 Version End Date: -



ID	Location	Details	
-	1247m SW	Status: Historical Licence No: 28/39/14/0333 Details: General use relating to Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: BUCKINGHAM ROAD, BICESTER, OXON Data Type: Point Name: GIBBS HOLDINGS LTD Easting: 458500 Northing: 223530	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 26/07/1996 Expiry Date: 31/12/2006 Issue No: 100 Version Start Date: 26/07/1996 Version End Date: -
-	1589m NE	Status: Historical Licence No: 28/39/14/0311 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: STRATON AUDLEY, BICESTER (A) Data Type: Point Name: O'NEILL Easting: 460400 Northing: 226100	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 26/02/1991 Expiry Date: - Issue No: 100 Version Start Date: 26/02/1991 Version End Date: -
-	1589m NE	Status: Historical Licence No: 28/39/14/0311 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: STRATON AUDLEY, BICESTER (B) Data Type: Point Name: O'NEILL Easting: 460400 Northing: 226100	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 26/02/1991 Expiry Date: - Issue No: 100 Version Start Date: 26/02/1991 Version End Date: -
-	1655m N	Status: Historical Licence No: 28/39/14/0322 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: MOAT FARM, CAVERSFIELD (A) Data Type: Point Name: DEELEY Easting: 458700 Northing: 226500	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 06/11/1992 Expiry Date: - Issue No: 100 Version Start Date: 06/11/1992 Version End Date: -
-	1719m W	Status: Historical Licence No: 28/39/14/0348 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LORDS FARM - BOREHOLE Data Type: Point Name: W V MALINS & SON Easting: 457441 Northing: 224221	Annual Volume (m <sup>3</sup> ): 17520 Max Daily Volume (m <sup>3</sup> ): 48 Original Application No: - Original Start Date: 22/03/2004 Expiry Date: 31/03/2018 Issue No: 1 Version Start Date: 01/04/2008 Version End Date: -



ID	Location	Details	
-	1719m W	Status: Active Licence No: 28/39/14/0348/R01 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LORDS FARM - BOREHOLE Data Type: Point Name: W V MALINS & SON Easting: 457441 Northing: 224221	Annual Volume (m <sup>3</sup> ): 17,520 Max Daily Volume (m <sup>3</sup> ): 48 Original Application No: NPS/WR/024301 Original Start Date: 01/04/2018 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/04/2018 Version End Date: -
-	1763m W	Status: Historical Licence No: 28/39/14/0348 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LORDS FARM - BOREHOLE Data Type: Point Name: W V MALINS & SON Easting: 457400 Northing: 224200	Annual Volume (m <sup>3</sup> ): 17520 Max Daily Volume (m <sup>3</sup> ): 48 Original Application No: - Original Start Date: 22/03/2004 Expiry Date: 31/03/2018 Issue No: 1 Version Start Date: 01/04/2008 Version End Date: -

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 5.7 Surface water abstractions

### Records within 2000m

0

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 5.8 Potable abstractions

### Records within 2000m

2

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 37**



ID	Location	Details	
A	357m N	Status: Historical Licence No: 28/39/14/0291 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: BRASHFIELD HOUSE, NR BICESTER, OXON Data Type: Point Name: BRASHFIELD MANAGEMENT LTD Easting: 459300 Northing: 225300	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 17/11/1980 Expiry Date: - Issue No: 100 Version Start Date: 30/01/1987 Version End Date: -
-	984m N	Status: Historical Licence No: 28/39/14/0315 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: FRINGFORD LODGE FARM, BICESTER, OXON Data Type: Point Name: ELWORTHY Easting: 459500 Northing: 225900	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 09/03/1992 Expiry Date: - Issue No: 101 Version Start Date: 04/06/2003 Version End Date: -

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 5.9 Source Protection Zones

**Records within 500m**

**0**

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 5.10 Source Protection Zones (confined aquifer)

**Records within 500m**

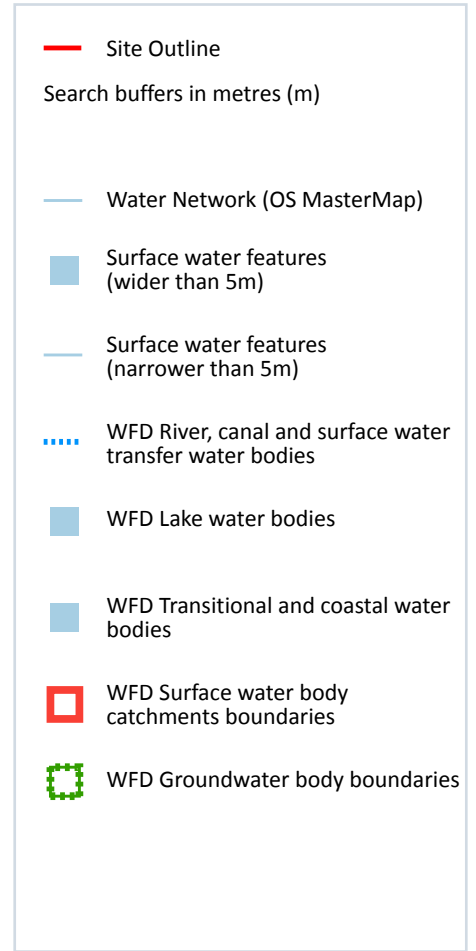
**0**

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 6 Hydrology



### 6.1 Water Network (OS MasterMap)

Records within 250m

0

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

*This data is sourced from the Ordnance Survey.*

### 6.2 Surface water features

Records within 250m

0

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

This data is sourced from the Ordnance Survey.

### 6.3 WFD Surface water body catchments

Records on site

1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River	Langford Brook (source to downstream A41)	GB106039030160	Oxon Ray	Cherwell and Ray

This data is sourced from the Environment Agency and Natural Resources Wales.

### 6.4 WFD Surface water bodies

Records identified

1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1448m SE	River	Langford Brook (source to downstream A41)	<a href="#">GB106039030160</a>	Moderate	Fail	Moderate	2019

This data is sourced from the Environment Agency and Natural Resources Wales.



## 6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 42**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Bicester-Otmoor Cornbrash	<a href="#">GB40602G600800</a>	Poor	Poor	Good	2019

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 7 River and coastal flooding

### 7.1 Risk of flooding from rivers and the sea

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 7.2 Historical Flood Events

Records within 250m

0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 7.3 Flood Defences

Records within 250m

0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 7.4 Areas Benefiting from Flood Defences

Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## River and coastal flooding - Flood Zones

### 7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 7.7 Flood Zone 3

Records within 50m

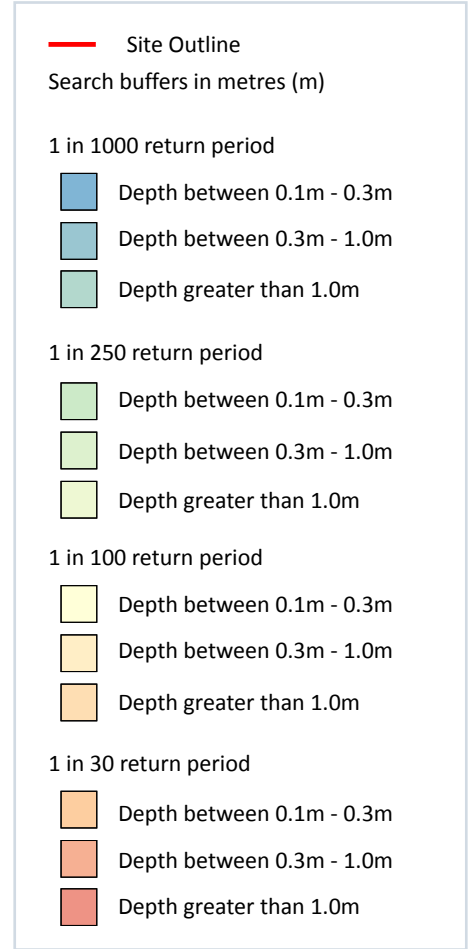
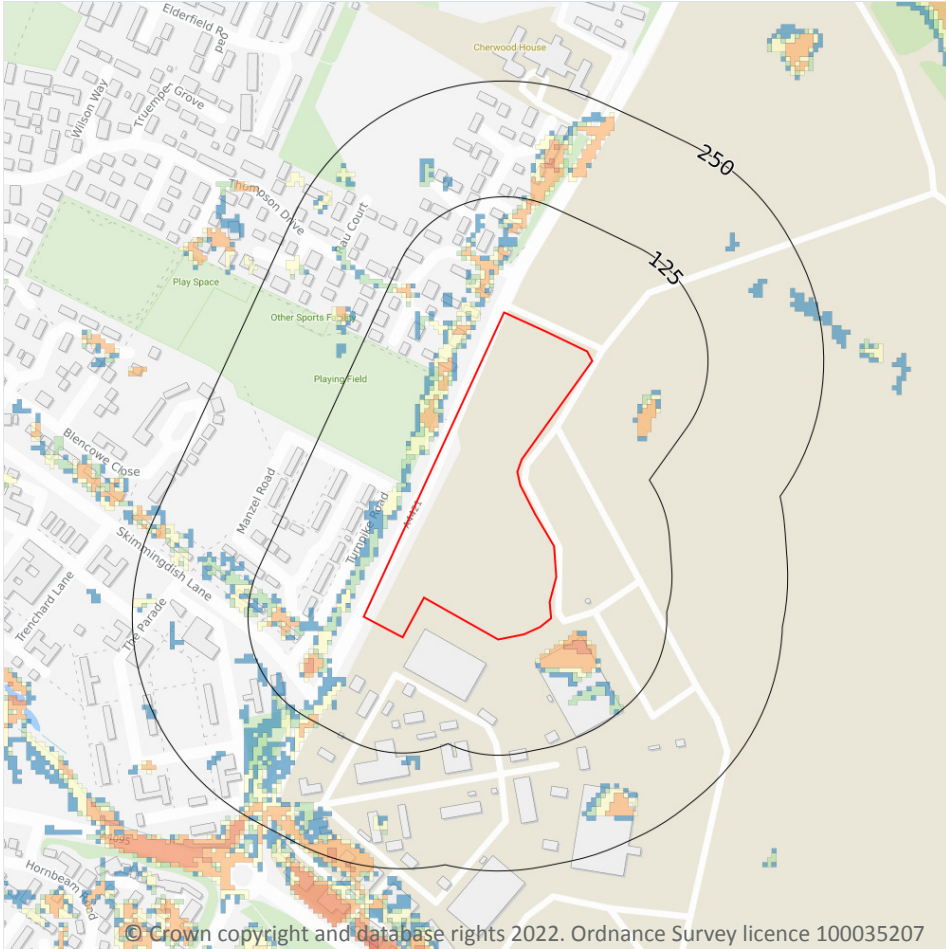
0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 8 Surface water flooding



### 8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 48**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on

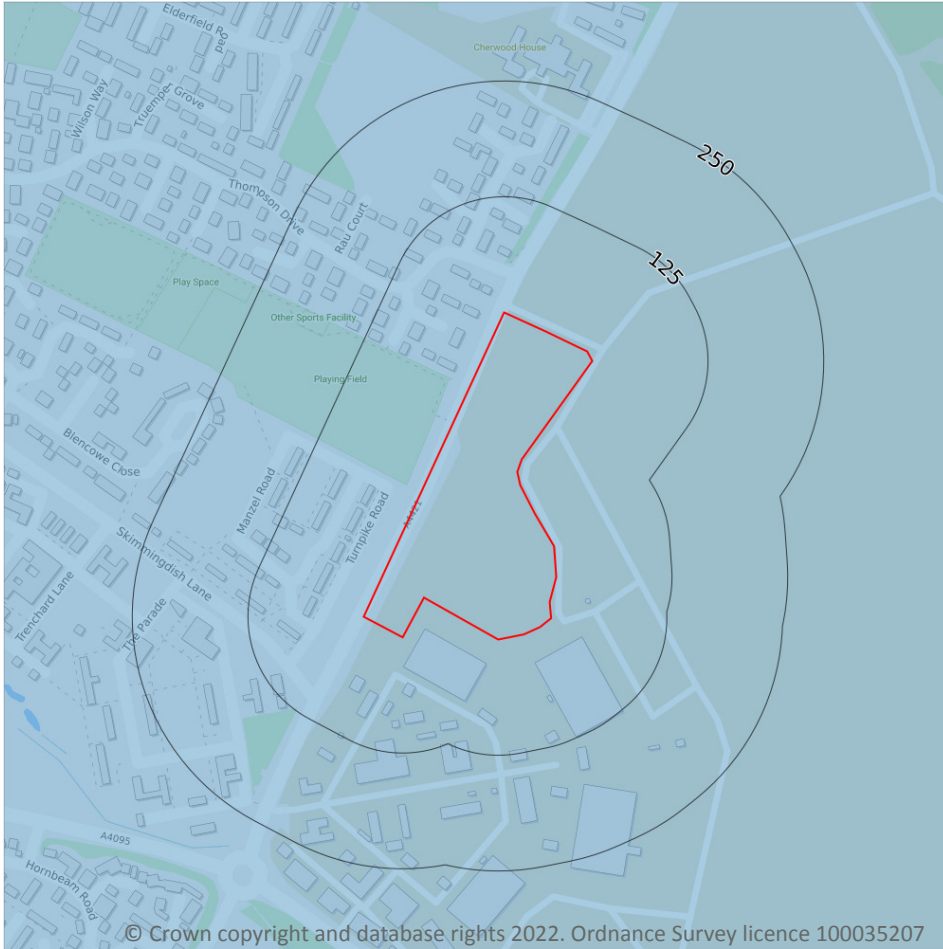
a site. The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

*This data is sourced from Ambiental Risk Analytics.*



## 9 Groundwater flooding



### 9.1 Groundwater flooding

**Highest risk on site**

**Negligible**

**Highest risk within 50m**

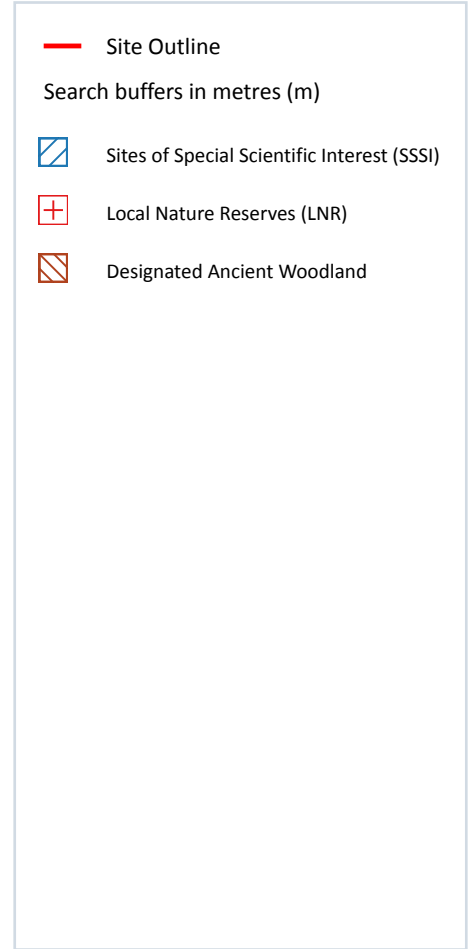
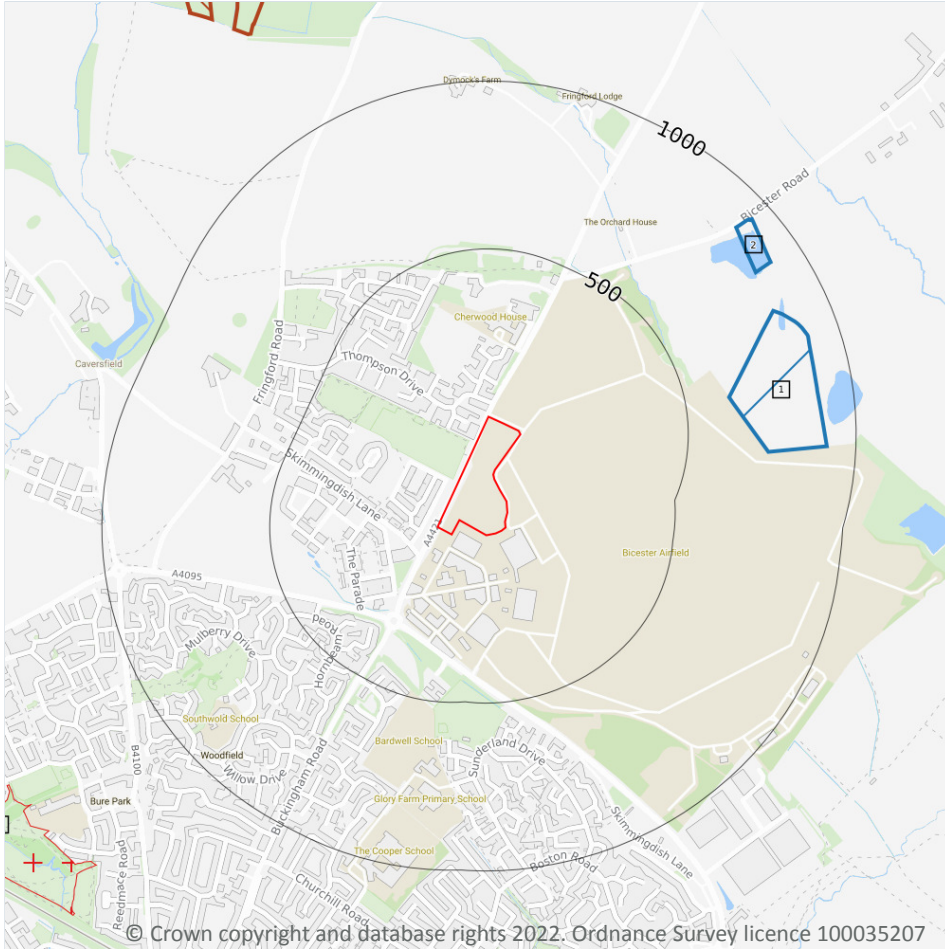
**Negligible**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 50**

*This data is sourced from Ambiental Risk Analytics.*

## 10 Environmental designations



### 10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

2

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Data source
1	631m E	Stratton Audley Quarries	Natural England

ID	Location	Name	Data source
2	850m NE	Stratton Audley Quarries	Natural England

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.2 Conserved wetland sites (Ramsar sites)

**Records within 2000m** **0**

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.3 Special Areas of Conservation (SAC)

**Records within 2000m** **0**

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.4 Special Protection Areas (SPA)

**Records within 2000m** **0**

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.5 National Nature Reserves (NNR)

**Records within 2000m** **0**

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*



## 10.6 Local Nature Reserves (LNR)

Records within 2000m

1

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Data source
5	1431m SW	Bure Park	Natural England

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.7 Designated Ancient Woodland

Records within 2000m

3

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Woodland Type
-	1341m E	Longlands Spinney	Ancient & Semi-Natural Woodland
4	1343m NW	Cotmore Covert	Ancient Replanted Woodland
6	1442m NW	Bainton Copse	Ancient & Semi-Natural Woodland

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*



## 10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

*This data is sourced from the Forestry Commission.*

## 10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.11 Green Belt

Records within 2000m

0

Areas designated to prevent urban sprawl by keeping land permanently open.

*This data is sourced from the Ministry of Housing, Communities and Local Government.*

## 10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

*This data is sourced from Natural England.*

## 10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

*This data is sourced from Natural England and Natural Resources Wales.*



## 10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

*This data is sourced from Natural England.*

## 10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

*This data is sourced from Natural England.*

## 10.16 Nitrate Vulnerable Zones

Records within 2000m

4

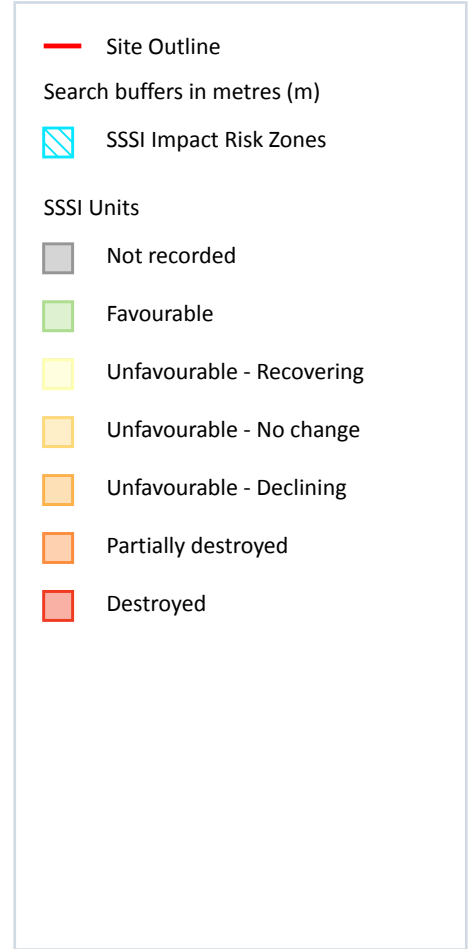
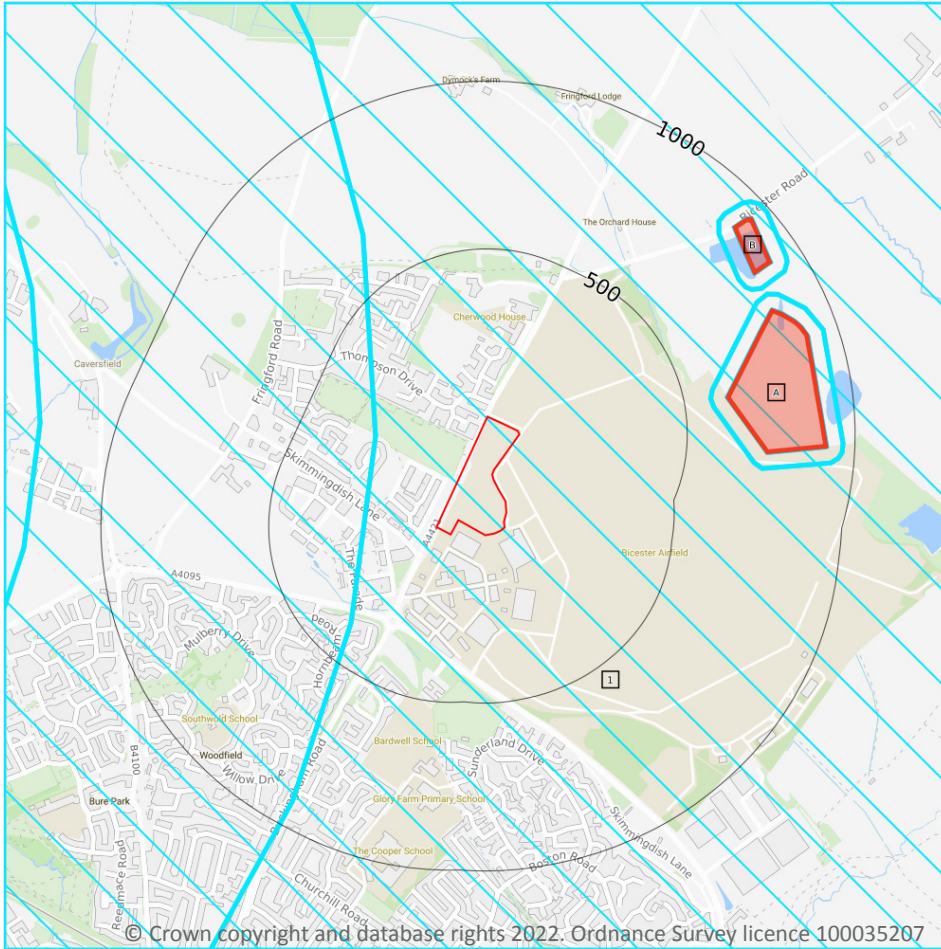
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	Bicester North	Groundwater	162	Existing
On site	Cherwell (Ray to Thames) and Woodeaton Brook NVZ	Surface Water	472	Existing
1038m N	Bicester North	Groundwater	162	Existing
1038m N	Cherwell (Ray to Thames) and Woodeaton Brook NVZ	Surface Water	472	Existing

*This data is sourced from Natural England and Natural Resources Wales.*



## SSSI Impact Zones and Units



### 10.17 SSSI Impact Risk Zones

#### Records on site

1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 56**

ID	Location	Type of developments requiring consultation
1	On site	<b>Infrastructure - Airports, helipads and other aviation proposals.</b> <b>Air pollution - Livestock &amp; poultry units with floorspace &gt; 500m<sup>2</sup>, slurry lagoons &amp; digestate stores &gt; 750m<sup>2</sup>, manure stores &gt; 3500t.</b>

*This data is sourced from Natural England.*

## 10.18 SSSI Units

Records within 2000m

2

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

Features are displayed on the SSSI Impact Zones and Units map on **page 56**

ID: A  
 Location: 631m E  
 SSSI name: Stratton Audley Quarries  
 Unit name: South Quarry  
 Broad habitat: Inland Rock  
 Condition: Destroyed  
 Reportable features:

Feature name	Feature condition	Date of assessment
ED - Bathonian	Destroyed	09/01/2009

ID: B  
 Location: 850m NE  
 SSSI name: Stratton Audley Quarries  
 Unit name: North Quarry  
 Broad habitat: Inland Rock  
 Condition: Destroyed  
 Reportable features:

Feature name	Feature condition	Date of assessment
ED - Bathonian	Destroyed	09/01/2009

*This data is sourced from Natural England and Natural Resources Wales.*

