PHASE 2 GEO-ENVIRONMENTAL SITE ASSESSMENT

SITE NAME	Hornton Quarry
CLIENT	Finsco Property Company
CLIENT REFERENCE	Certasapp1
DATE	30th September 2020
REPORT REFERENCE	R001 - 6114
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REVISION NUMBER	DATE	DETAILS	OHES CONULTANT

EXECUTIVE SUMMARY

CONTEXT AND OBJECTIVES

OHES Environmental Ltd (OHES) was instructed by Finsco Property Company on 21st August 2020 to complete a combined Phase 1/2 Geo-Environmental Site Assessment (GESA) for the site, in the context of the proposed change in usage from a former quarry land into a fuel depot.

The objective of the assessment is to determine the likely presence, extent and severity of any contamination and geotechnical hazards and risks through completion of a suitable desk study, site inspection, intrusive investigation and generic quantitative risk assessment (GQRA). The results of the assessment have been used to design any further assessment or remediation that may be required in the context of the proposed site use.

SITE DETAILS

The site, known as 'Hornton Quarry', is located 1km south-west of the village of Hornton, off the A422 Stratford Road, Hornton, near Banbury OX15 6HH.

The land under assessment is situated on relatively level ground on the eastern side of a pre-existing quarry. Current land use comprises former quarried land.

INITIAL CONCEPTUAL SITE MODEL AND PRELIMINARY RISK ASSESSMENT

Based on the results of the desk study and site inspection, the following key risks have been identified:

Preliminary Environmental Assessment

- Groundwater- **Low** risk;
- Surface water-**Very low** risk;
- Human health- On site ground and construction workers- **Low** risk;
- Human health – On site post construction staff and operatives-**Low** risk; and
- Human Health – Offsite-**Low** risk.

Based on this assessment, intrusive investigation was required to further assess risks associated with the pollutant linkages identified above.

Preliminary Geotechnical Assessment

- The site is within a worked rock quarry therefore bedrock will be shallow; and
- The absence of superficial deposits may impede the use of soak away drainage.

Based on this assessment, intrusive investigation was required to further assess ground conditions for foundation design and drainage proposals.

SITE INVESTIGATION WORKS COMPLETED

Ground investigations commenced on the 26th August 2020 and included:

- Four trial pits were advanced to between 1.00m and 1.50m bgl;
- The drilling method used was rotary sampling, chosen based on a preliminary site assessment at the time of initial enquiry;
- Two boreholes were drilled to 6.00m depth;
- Monitoring wells were installed in both locations (BH1 and BH2) designed to target groundwater;

CONTAMINATION FINDINGS

- No visual or olfactory evidence for contamination was recorded in soil, rock or groundwater encountered;
- Volatile Organic Compounds measured by the PID readings were all below detection;
- Laboratory analysis of soil samples returned concentrations for petroleum hydrocarbons below detection or at concentrations which are not considered significant, none of the concentrations of contaminants of concern in soil samples analysed exceeded Tier 1 screening criteria protective of human health for proposed commercial land use;
- Groundwater was recorded at both locations during monitoring, groundwater samples submitted for analysis returned concentrations below detection for all determinants analysed; and
- One soil sample was submitted for asbestos screening, there were no detections of asbestos fibres within the sample analysed.

GEOTECHNICAL FINDINGS

- The site is situated within a quarry within Marlstone Rock. The depth of quarry and the increasing mudstone content suggests that the Dyrham Formation is within close proximity of the surface.
- Shallow reworked natural soils (brown gravelly clays with cobbles and boulders) covers the bedrock surface in some areas of site to a maximum depth of 0.85m, but generally the depth is <0.3m.
- Shallow groundwater seepages entered trial pits at generally 0.5m depth. Groundwater strikes were encountered in boreholes at approximately 1.3m depth, resting levels after 1 week were approximately 1.0m suggesting poor drainage throughout the upper 6.0m of strata.
- Infiltration testing for soak away design could not be completed due to the presence of shallow groundwater.
- It appears the current site level is just above a spring line.
- Observed ground conditions confirm that the underlying bedrock is not a continuous slab of thickly bedded limestone or sandstone but instead comprises of an interbedded sequence of limestone and mudstones/siltstones/sandstones in places weathered to clay/silt.
- Based on observation and laboratory testing the strata will provide adequate bearing capacity for the tank farm foundations (assumed 50kpa required) and office block foundations. However a shallow 300mm thick band of soft to firm clay at between 0.5 and 0.85 depth beneath the upper bedrock beds will be compressible potentially resulting in settlements estimated to be in excess of 50mm.
- For soils, water soluble sulphate concentrations range from 29.8 to 25.1mg/l (mean 27.45mg/l) with a pH of 8. Groundwater sulphates ranging between 43.4 and 54.4mg/l with a pH values of 7.5. The shallow ground is not deemed to be pyritic.
- Surrounding slopes and earthworks appear to be stable.

UPDATED CSM AND RISK ASSESSMENT

Based on the results of the site investigations the following key risks have been identified:

Revised Environmental Assessment

- Human health- On site ground and construction workers-**Very Low** risk
- Human health – On site post construction staff and operatives- **Very Low** risk

Following site investigations, no sources of contamination relevant to surface/groundwater were identified and therefore the revised assessment is based on viable source-pathway-receptor relationships. In this case there are very lows risks relating to human health and the identified risks can be managed by appropriate risk assessments and adequate PPE.

RECOMMENDATIONS

Environmental Assessment

The Environmental Site Assessment (ESA) has determined viable pollutant linkages from soils onsite with detections of metals and PAH and low-level heavy end hydrocarbons, though these have been deemed very low risk to human health.

The ESA is in its nature limited to the areas investigated and therefore a conservative approach should be taken to adopt appropriate mitigations to supress soil dust and prevent inhalation/contact with site workers during any redevelopment of the site.

Geotechnical

General

The site formation level comprises of strong limestone bedrock with reprofiled slopes and banks defining the edges. Although the ground conditions appear favourable for construction care should be taken when completing earthworks excavations adjacent to these slopes, as detailed within, slope instability can be an issue in this region especially with shallow groundwater levels at the site.

At one location (TP4) the upper 0.85m of ground comprised of reworked soil and rock (Made Ground). It is possible these conditions are replicated elsewhere on site.

Foundations

Tank Farm

Shallow groundwater presents a problem for bedding the tank farm tank base into the upper strata. Any excavation would need to be progressed to at least 1.2m depth to encounter the competent mudstone beyond the clay/silt (weathered mudstone). Given the general situation with shallow groundwater and drainage it maybe instead beneficial to raise site levels using imported stone engineered on the existing limestone bed to form a suitable formation level.

As the clay layer appears to be continuous across the site differential settlements are unlikely, however to further mitigate this, in addition to the extra loading afforded by the placement of engineered fill the tanks could be pre-loaded with water prior to filling with fuel to induce settlement prior to commissioning.

A cost benefit analysis should be undertaken to compare the two options above.

Further sampling and geotechnical testing of the clay or In-situ plate loading tests of the surface limestone would be recommended to assist in the above options appraisal to ascertain the potential settlement.

Office Block

Any shallow strip or pad foundation will need to be bearing on the underlying mudstone at circa 1.0m bgl to ensure adequate and consistent bearing beyond the clay bed. Foundations will need to be dewatered prior to the placement of concrete.

Office block floor slabs may consist of ground bearing reinforced concrete which should include a radon barrier.

For the purposes of designing the appropriate concrete mix for shallow foundations and floor slabs, the ACEC classification for the site is DS-1 - AC-1.

Pavements

Although no CBR testing was undertaken the existing quarry floor will have CBR values >3%.

Drainage

Based on the shallow seepage of groundwater it is not advisable that soakaways are used on-site for drainage. Deeper borehole soakaways are also unlikely given the underlying strata.

Other Considerations

To enable groundworks sumps or trenches could be utilised upgradient of groundworks to intercept groundwater seeping through the limestone bed to improve working conditions.

OHES have not been provided with proposed finished ground levels, however it is assumed that some reprofiling of the site will take place during construction. It may be possible to reuse some of the materials generated to build up site levels etc. if required. This would be subject to an evaluation of site levels and a proven requirement for the re-use of these materials on-site. The re-use of any site won materials will need to be undertaken in accordance with a site-specific Materials Management Plan (MMP). Considerable volumes of waste materials (soils etc.) are likely to be generated by the excavation of new foundations and service trenches. Allowance should be made for the disposal of these materials in accordance with current UK waste disposal regulations.

1.0 INTRODUCTION

1.1 Context and Purpose

OHES Environmental Ltd (OHES) was instructed by Finsco Property Company (the 'client') on 21st August 2020 to complete a Combined Phase 1/2 Geo-Environmental Site Assessment (GESA) at Hornton Quarry, off the A422 Stratford Road, Hornton, near Banbury OX15 6HH (hereafter referred to as the 'site'). The assessment is required in the context of the proposed development of the site into a fuel oil storage and distribution depot.

This assessment has been designed on order to meet the requirements for such assessment as detailed within '*Model Procedures for the Management of Land Contamination*' (CLR11) and '*Guidance for the Safe Development of Housing on Land Affected by Contamination*' (R&D Publication 66: 2008). The latter guidance is particularly focussed on the development of housing on land affected by contamination. However, the advice is generally applicable to other forms of development and to sites where no developments is proposed.

1.2 Objectives

The objectives of the assessment are:

- Determine the potential for contamination to be present based on the current and historical site use of the site and surrounding area;
- Determine the sites Environmental Sensitivity;
- Produce an initial conceptual site model (CSM) and preliminary risk assessment (PRA);
- Further determine the presence, extent and severity of any contamination present;
- Update the CSM and risk assessment;
- Assess geotechnical hazards and risks present based on the identified ground conditions; and
- Inform the need for and scope of further assessment and/or remediation works.

1.3 Guidance and Standards

In order to achieve the objectives, set out in Section 1.2, OHES has designed and delivered a suitable level and method of investigation and assessment in accordance with industry best practice, the documents referenced in Section 1.0 and the following technical guidelines:

- BS10175:2011 '*Investigation of Potentially Contaminated Sites Code of Practice*';
- BS 5930:2015+A1:2020, '*Code of practice for ground investigations*';
- Technical Report P5-065/TR, '*Technical Aspects of Site Investigation*';
- BS EN 1997-2:2007, '*Eurocode 7. Geotechnical design. Ground investigation and testing*';
- CIRIA C665, '*Assessing Risks Posed by hazardous Ground Gases*'; and
- BS8485:2015, *'Code of Practice for the Characterisation and Remediation from Ground Gas in Affected Developments'*.

The scope and methodology completed as part of this assessment has been designed to meet the requirements of the above documents.

1.4 Project Information and Limitations

This report has been produced solely for Finsco Property Company based upon the instruction received from Finlay Scott on 21st August 2020. This assessment has been completed in the context of the agreed scope of works as detailed in OHES proposal dated 30th June 2020. The geotechnical aspect of the proposal was instructed on the 25th August the day prior to commencement on site. This led to a reduced level of data retrieved from site as the drillers had already mobilised to an adjacent site therefore SPT Insitu testing equipment had not been mobilised.

For details relating to general assessment limitations and its use by other parties please refer to the details provided in Appendix 1. Specific limitations to the site investigation are summarised in Section 4.

2.0 DESK STUDY AND SITE INSPECTION

2.1 Methodology

As part of this assessment a desk study was been completed in advance of the intrusive works which broadly comprised the following:

Site Details	Details of the site and surrounding area were obtained through a review of information provided by the client, information from a variety of internet resources and through the completion of a site inspection on 26th August 2020.
Environmental Setting	The environmental setting has been assessed through a review of available Ordnance Survey (OS), British Geological Survey (BGS) and UK Government mapping, information obtained from the site inspection and information provided in an Envirocheck Report obtained from the Landmark Group Limited.
Site History	The history of the site was determined based upon a review of historical mapping obtained from Landmark Group Limited, internet resources, Zetica Limited, local authority information (including planning records) and anecdotal information.
Regulatory Data	Regulatory data was obtained from an Envirocheck Report obtained from Landmark Group Limited and online public register information.
Geotechnical Hazard Identification	Potential geotechnical hazards and considerations have been assessed following a review of geological mapping, hazard information listed within Envirocheck Reports and with reference to data presented on BGS Engineering Geology Map Viewer. Publicly available online satellite imagery and aerial photography provided by Landmark Group Limited has been viewed to assess the geomorphology of the site and surrounding area to identify potential ground hazards. Published LiDAR imagery for the specific site location was not available.
Previous Reports	No previous reports are available for this site.
Initial CSM and Preliminary Risk Assessment	The results of the desk study and site inspection have been used to identify potential pollutant linkages and produce an initial conceptual site model (CSM). Upon completion of the CSM, a preliminary risk assessment has been completed in accordance with the methodology detailed within Section 6.3 of CIRIA Report 552 *'Contaminated Land Risk Assessment: A Guide to Good Practice'* and pages 33 to 35 of R&D 66:2008 publication. This is summarised in the Risk Assessment Methodology in Appendix 2.

2.2 General Site Information

SITE INFORMATION	
Name	Hornton Quarry
Address	Hornton Quarry, off the A422 Stratford Road, Hornton, near Banbury OX15 6HH.
Location	The site is located 1km south-west of the village of Hornton and 7km north-west of Banbury (Figure 1).
Grid Reference	SP381446.
Current Land Use	The site is an approximately rectangular area of former quarried land. The proposed depot location is shown on the accompanying site plan (Figure 2).
Site Ownership	The site is owned by Finlay Scott from Finsco Property Company.

Site Occupation	The site area is currently unoccupied former quarry land, the access road to the site is located to the south-west , to the west of this is a cabin and welfare facilities which are associated with Building Stone Ltd located to the west of the site.
Site Size	The site area is approximately 10,500 m^2.
Proposed Development / End Use	It is understood that it is Certas Energy's intention is to develop and operate the site as a fuel depot. The southern part of the site is proposed to contain an office building along the southern boundary with car parking spaces to the south of this section. The mid-section of the site is proposed to contain a central bund containing six tanks. Two loading gantries are proposed to be located to the west of the bund with one offloading header to the south east. One Glomax tank and one Derv tank are proposed to be located to the north east of the bund. The eastern boundary of site is proposed to be a tanker parking area. The proposed traffic flow on and off site is anti-clockwise. Ingress and egress on and off site is proposed to be from an electrical automatic sliding gate to the south-west of the site, leading from the concrete access road to the south of the quarry. Pedestrian access to the yard from the car park is proposed through a gate in the southern area of site.

A map showing the location of the site is presented as Figure 1. A copy of the proposed development drawings is provided in Figure 3.

2.3 Site Description

The description of the site has been produced based upon a review of desk-based information and a site inspection completed on 26th August 2020. A plan showing the current layout of the site is presented in Figure 2. Key site photographs from the site inspection are presented in Appendix 3.

2.3.1 Site Layout

SITE DETAILS	
General Site Layout	The site is set in cut ground (quarry) and is broadly rectangular in shape, the northern and eastern edges of the site are bounded by cut slopes covered in vegetation.
Site Access	The site can be accessed via a gated track access road from the south west of the site off the A422.
Buildings and Structures	There are no structures present on site.
Retaining Structures	No retaining structures have been identified.
Evidence of Buried Structures / Basements	No evidence of buried structures was immediately apparent from the walkover/site inspection or during the intrusive investigation.
Structural Damage	No structural damage has been identified.
Ground Cover / Surfacing	The ground cover is gravelly bedrock with weeds.
Boundary Fencing / Definition	The northern and eastern edges of the site are bounded by cut slopes covered in vegetation. The southern boundary is designated by an area of water and a tree line beyond this.

	The western boundary is designated by concrete hardstanding associated with Building Stone Ltd.
Site Vegetation	There are weeds across the quarry floor, and also vegetation growing on the slopes to the north and east of the site.
Trees	A mix of newly planted trees mark the eastern and northern boundary of the quarry area.
Fuel / Chemical Storage	No fuel or chemical storage has been identified.
Presence of Interceptors / Septic Tanks	No interceptor or septic tanks have been identified.
Quality of Housekeeping	Housekeeping was noted to be moderate to good.
Indicators of Former Structures	No indication of former structures were present on site.
Indicators of Site History	No further indications of previous site usage.

2.3.2 Description of Surrounding Area

SURROUNDING AREA		
General Land Use	The area surrounding site generally consists of arable agricultural land with Building Stone Ltd to the west of the site.	
Land Use Details	North	The area to the north of site consists of arable agricultural land.
	East	The area to the east of site consists of arable agricultural land.
	South	The area to the south of the site consists of arable agricultural land. The access road to the site is to the south-west. Hornton Grounds farm and a hotel are located 0.25km south east of the site.
	West	The area to the west of the site is occupied by Building Stone Ltd.
Likely / known Future Land Use change	Subject to completion and findings of the assessments reported herein, Certas propose to develop the site into a fuel depot. Proposed future layout is shown on Figure 3.	

2.3.3 Evidence of Contamination

EVIDENCE OF CONTAMINATION	
Surface Staining	No surface staining was noted.
Distressed Vegetation	No distressed vegetation was noted during the site walkover.
Invasive Weeds	No invasive weeds were noted during the site walkover.
Regulatory Involvement	No known regulatory involvement.
Asbestos Containing Materials	No asbestos containing materials (ACMs) were encountered during the site works.
Evidence of Artificial Levelling / Infilling	The quarry has been worked to a relatively level working platform corresponding with the bedrock bedding. No evidence of localised infilling on site were observed.
Waste Disposal Activities	No evidence of waste disposal on site was noted.

Known Pollution Incidents	No known recorded pollution incidents on site or within 1km.
Groundwater Monitoring	No historic groundwater monitoring wells were noted during the site visit.
Ongoing Remediation / Mitigation	No ongoing remediation or mitigation.
Other Evidence	No evidence of contamination was identified.

2.3.4 Topography

TOPOGRAPHY	
Site Elevation	Site lies at approximately 185m AOD, the surrounding ground to the north is approximately 188m to 190AOD.
Site Topography	The ground surface across the site is relatively flat, the levels are slightly lower to the south along the access road. The topography is interspersed with local changes in topography due to earth mounds on site. Northern and eastern edges of the site are bounded by cut slopes.
Surrounding Area	The surrounding area is predominately flat land.

2.4 Environmental Setting

OHES has assessed the sites environmental setting based upon information held on published mapping, internet resources and information held within ''Envirocheck Reports' published by Landmark Group. Copies of these reports are presented in Appendix 4 for reference.

2.4.1 Geology

GEOLOGICAL INFORMATION	
Made Ground	There is no made ground recorded on site. Significant artificial ground 500m south is however shown on BGS mapping.
Drift Deposits	According to British Geological Survey data the site is not underlain by superficial deposits.
Bedrock	The site is underlain by the Marlstone Rock Formation (MRB) – Sandy Ferruginous Limestone and Ironstone and Calcareous Sandstones. This rock has been quarried as building stone and is known as 'Hornton/Wroxton' Stone. The MRB is relatively thin in the region (1.2 to 7.5m thick) therefore the existing quarry floor level may represent the interface with the Dyrham Formation (DYS) interbedded siltstones and mudstones.
Radon	The site is located in a Higher probability radon area (more than 30% of homes are estimated to be at or above the Action Level). Full radon protective measures are necessary in the construction of new office block.
Other Information	No other pertinent information.
Shrinking / Swelling Clay	Published data suggests the Dyrham Formation has a medium shrink swell rating. No published data for the Marlstone Rock was identified.
Landslip Hazards	Slope instability is well documented at the interface between the Marlstone Rock and Dyrham formation. Cambering is particularly common resulting in subsurface voids.

	The BGS documents a landslide feature (the Hornton landslide) 1km south east of site.
Ground Dissolution Hazards	Envirocheck data states no known hazard.
Compressible Deposit Hazards	Envirocheck data states no known hazard.
Collapsible Deposit Hazards	Envirocheck data states very low hazard potential.
Running Sand Hazards	Envirocheck data states no known hazard.
Mining Hazards	Opencast quarrying has taken place at the site, the potential for deeper/discrete mine hazards such as shafts etc is unlikely.

2.4.2 Geomorphology

Aerial photography was utilised to assess the morphology of the site and local area to identify any features of interest that may reflect the underlying geology, which in turn may influence the geotechnical assessment of the site.

Utilising the Historical Aerial Photograph (dated 1999) published by Envirocheck (Appendix 5) and freely available online satellite imagery, linear features are recognised aligned north to south running towards and through the site. Given the relatively level terrain these features are unlikely to represent evidence of potential ground hazards i.e. cambered/disrupted blocks of bedrock. These morphological features may instead represent denuded drainage channels which are northward extensions of valley features further south and/or are morphological benches formed by the Marlstone rock bedrock.

Other features confirm former roadways leading out from the north east corner of the site and potential areas of infilling off site to the east.

2.4.3 Groundwater

GROUNDWATER INFORMATION		
Aquifer Classification	Drift	The site is not recorded to be underlain by a superficial deposit.
	Bedrock	Bedrock aquifer is designated as a 'Secondary A' Aquifer.
Source Protection Zone (SPZ)	The site is not located within a SPZ Zone.	
Groundwater Abstractions	There are 22 known abstractions within 1.5km of the site. The closest of these is located 820m west of site and relates to general farming and domestic abstraction for Upton Farm, under the authority of EA.	
Private Water Supplies	The nearest private household abstraction is located 1.4km west of site and relates to the Upton Estate, under the authority of EA.	
Discharges to Groundwater	No discharge consents to groundwater are listed within 2km of site.	
Evidence of Springs	There are a number of springs located within 2km of site. The closest of these relates to a spring 600m north-west, there are also springs 800m west and 1000m south-east of site shown on the historical mapping.	
Groundwater Quality	No information on groundwater quality is available.	
Other Groundwater Information	Soils are classified as having freely draining slightly acid but base-rich soils. The MAGIC website indicates that the site is located within a high groundwater	

	vulnerability area. The BGS website states the Marlstone Rock Bed is fissured and yields small supplies of groundwater. BGS borehole records show that there are sixteen boreholes within 2kmthe site, the majority of which are private records relating to old landfill sites, the others relate to private abstractions for farming.

2.4.4 Surface Water

SURFACE WATER INFORMATION	
Nearest Watercourse	Unnamed inland river located 424m south-west of the site.
Other surface water features	There is an unnamed ditch located 603m north-east and a pond marked 610m south-east of the site. There is a surface water feature 690m downslope south of the site, it is assumed that this is in continuity with the land drain from the drainage ditch beside the access road to the site. Hornton Stream is located 767m east of the site.
Surface Water Abstractions	There are no surface water abstractions listed with 2km of the site.
River Quality	The Hornton Stream is designated with River Quality B.
Flood Zones	The site is not located within a Flood Zone.
Discharges to Surface Water	No discharge consents to surface water are listed within 2km.
Other surface water information	The site is located with a Drinking Water Safeguard Zone for surface waters.

2.4.5 Ecology

ECOLOGICAL INFORMATION	
Environmentally Sensitive Areas	There are no environmentally sensitive areas within 2km of the site.
On-Site Habitats / Species	No evidence of on-site habitats or species were noted.
Off-Site Habitats / Species	No evidence of off-site habitats or species were noted.

2.4.6 Historically Sensitive Features

HISTORICALLY SENSITIVE FEATURES	
Designated Historically Important Features	There are no designated historically important features located on-site, there is a grade two listed building 0.25km south-east of the site located at Hornton Grounds Farm.

2.5 Site History

2.5.1 Historical Map Review

A summary of the key historical uses of the site and surrounding area from a review of available historical maps is presented in the following section. Copies of the historical maps are presented in Appendix 5.

HISTORICAL LAND USE – THE SITE		
Description	***Dates From***	***Date To***
Agricultural Land	1885	1999
Quarried Land	Circa 1999	Present Day

HISTORICAL LAND USE – SURROUNDING AREA			
Description	***Distance and Direction***	***Dates From***	***Date To***
Agricultural land	Surrounding areas	1885	Present day
Woodville Barn Hornton Grounds Farm	200m N 320m SE.	1885	1978 Present Day
Springs	600m NW 800m W 1000m SE	1999 1923 1900	Present day
Reservoir	800m W	1886	Present day
Old Quarries	600m N 700m N 1000m N 800m S 1200m SE	1900 1900 1900 1923 1955	2006 2006 2006 1971 1978
Motor test track	800m SE	1999	Present day
Building Stone Ltd	10m W	Circa 1998	Present day

2.5.2 Local Authority Information

A search of Cherwell District Council planning portal did not reveal any historical records relevant to site.

2.6 Regulatory Data

2.6.1 Regulatory Data Review

As part of this assessment OHES has purchased and reviewed an 'Envirocheck' report from Landmark Group. A copy of this report is presented in Appendix 4. A summary of the key findings relating to the site and surrounding area is presented in the following table.

REGULATORY DATA REVIEW	
Historical Land Use Records	The site has not been subjected to potentially contaminating activates associated with its current or previous use. The wider surrounding area does not contain potentially contaminating activities.
Environmental Permitting	The Envirocheck report lists no permits or Part A (1) Authorised processes within 1km of the site.

Pollution Incidents	The Envirocheck report lists no known pollution incidents within 1km of site.
Landfill Records	There are three historical landfill sites located with 1km of the site, the closest is 573m north of the site, waste deposited was inert waste. The other two landfills are located 652m south and 731m north of the site. There is one licensed waste management facility within 1km of the site, this is located 993m south of the site which is run by the Environmental Agency and accepts Household, Commercial and Industrial Waste. There is a registered landfill site 768m north of the site, the authorised waste is; hardcore and rubble, high-density Asbestos, Inert construction and industrial waste, plaster, soil and subsoil. There are five records of potentially infilled land within 1km of site. These all related to unknown infill of pits/quarries, the closest is 409m north-west of the site.
Current Land Use Records	The Envirocheck report lists 6 industrial land uses/contemporary Trade Directory entries within 1km radius of site.
Known Regulatory Action	No known regulatory action relating to the site.
UXO Assessment	Mapping from Zetica Limited indicates the site is located in a low risk UXB zone.

2.6.2 Local Authority Information

A search of Cherwell District Council Planning portal identified a number of planning records relating to the site and the wider area;

- **Display of free standing business sign at entrance to Hornton Grounds Farm adjacent to Hornton Grounds Quarry access -** 98/00332/ADV**.** Hornton Grounds Farm Hornton Banbury Oxon OX15 6HH. Validated: 18 Feb 1998 | Status: Permitted.
- **Erection of gable extension to existing building to house stone cutting saw.** Hornton Grounds Quarry North Of Hornton Grounds Farm Hornton Banbury Oxon. Ref. No: 00/01017/F Validated: 1 June 2000 | Status: Permitted.
- **Importation of 6757 cubic metres of clay from Hennef Way highway improvements to Hornton Grounds Quarry to assist with site restoration.** Hornton Grounds Quarry Hornton Banbury Oxon**.** Ref. No: 02/01797/CM | Received: 21 Aug 2002| Status: Permitted.
- **Variation of condition 79 of 97/00430/CM to allow the temporary retention of existing Saw Shed and ancillary facilities.** Hornton Grounds Quarry Hornton Banbury Oxon. Ref. No: 02/02485/CM | Received: 21 Nov 2002 | Status: Permitted.
- **Extension to Saw Shed and importation of block stone.** Hornton Grounds Quarry Hornton Banbury Oxon. Ref. No: 02/02488/CM | Received: 21 Nov 2002 | Status: Permitted.
- **Change of use from agriculture to provide an extension to the area associated with the processing of stone, to provide additional space for stone and product storage; part retrospective.** Hornton Grounds Quarry Stratford Road Wroxton Oxfordshire. Ref. No: 06/01116/CM | Received: 05 Jun 2006 | Status: Objections.
- **To develop land without complying with condition 5 of permission 02/02488/CM to allow the importation of up to 4,000 tonnes of stone per year.** Hornton Grounds Quarry Stratford Road Wroxton Oxfordshire. Ref. No: 06/01117/CM | Received: 05 Jun 2006 | Status: Objections.
- **Retrospective permission for additional structures and proposed replacement building.** Hornton Grounds Quarry Hornton Oxfordshire. Ref. No: 08/01431/CM | Received: 09 Jun 2008 | Status: Permitted.

2.6.3 Other Information

No other pertinent information was found related to the site.

2.7 Previous Report Review

No previous reports were available relating to the site for OHES to review.

3.0 INITIAL CONCEPTUAL SITE MODEL AND PRELIMINARY RISK ASSESSMENT

3.1 Summary of Contaminant Sources

Based on the results of the assessment, the following key contaminative sources have been identified. The likely contaminants of concern from each source have also been assessed based upon experience of similar sites, a review of appropriate DoE industrial profiles (where relevant and applicable to historical land-use) and tables provided in Annex 3 of the R&D66:2008 document.

SOURCE DESCRIPTION	LOCATION	POTENTIAL CONTAMINANTS OF CONCERN
ON-SITE		
Agricultural Land	On-Site	Pesticides and Herbicides.
Quarry use – fuel storage from plant during quarry operations and potentially infilled land.	On-site	Hydrocarbons
OFF-SITE		
Agricultural Land	Surrounding	Pesticides and Herbicides.
Building Stone Ltd	10m W	Petroleum hydrocarbons.
Motor Test Track	800m SE	Petroleum hydrocarbons.
Landfills	573m N 652m S 731m N 768m N	Volatile vapours.

3.2 Receptors and Sensitivity

The key receptors likely to be at risk from site sourced contamination are detailed in the following table along with an assessment of the sensitivity of each receptor. The sensitivity assessment is based broadly on definitions provided in the R&D66: 2008 document (water environment only) and adapted to reflect other sensitive receptors types.

KEY RECEPTORS	DETAIL	SENSITIVITY
Groundwater	The site is underlain by a 'Secondary A' Aquifer comprising of Marlstone Rock Formation – Ferruginous Limestone and Ironstone. There are a number of springs located in the vicinity of site which in this region are likely to be associated with the boundary between permeable limestones and underlying mudstones of the Dyrham Formation which is a Secondary Undifferentiated aquifer.	Moderate
Surface Water	The nearest surface water feature is an unnamed inland river 424m south-west and surface water feature 690m S of site, it is assumed that this is in continuity with the land drain from the drainage ditch beside the access road to the site.	Moderate/Low
Human Health – On-Site	It is understood that there are no planned soft landscaping areas and the site will have concrete hard standing across the entire footprint.	Very Low

	There is considered to be a very low risk from on-site sources of contamination given historic usage as an arable field.	
Human Health- Future Groundworkers	Future excavation and construction works are expected to take place on site during the change of site usage. Groundworkers may be exposure to low levels of potential contaminates of concern within soils.	Moderate
Human Health – Off-Site	The environmental sensitivity of off-site human health is considered to be very low from current site sourced potential contaminates of concern given the historic usage as an arable field.	Very Low
Historical Features	The designated status of the Grade 2 listed building at Hornton Grounds is unlikely to be affected.	Very Low

3.3 Initial Conceptual Site Model (CSM)

For a risk from ground contamination to exist, a contaminant source, pathway for migration and viable receptor must exist. The presence of all three of these elements is known as a 'pollutant linkage'.

The likely potential pollutant linkages identified as a result of this assessment and specific for the site have been provided in the initial CSM overleaf. The model has been based upon the site setting at the time of the assessment, the land use (current and reasonably foreseen future use) of the surrounding area and the proposed future use of the site as a fuel depot.

As well as identifying the potential pollutant linkages the model includes a preliminary assessment of risk based upon the probability of impact and the likely severity of impact in the context of the site setting and proposed future site use.

The criteria used for the risk assessment classifications as detailed in the CSM table are based on those presented in CIRIA Report 552 and pages 33 to 35 of R&D66:2008 publication. Further details of the risk assessment methodology and classifications can be found in Appendix 2.

IDENTIFIED POLLUTANT LINKAGES			PRELIMINARY RISK ASSESSMENT		
SOURCE	**PATHWAY**	**RECEPTOR**	**PROBABILITY**	**SEVERITY**	**RISK ASSESSMENT AND JUSTIFICATION**
On site; possible contamination in shallow soils from previous use as a quarry i.e. fuel storage from plant during quarry operations and potentially infilled land.	Leaching of contaminants and vertical migration into groundwater.	Groundwater within the bedrock deposits ('Secondary A' Aquifer).	Unlikely	Medium	**Low Risk:** If present, potential mobile contamination could impact the groundwater with the underlying bedrock deposits via percolation and lateral migration pathways, especially given the lack of superficial deposits. Risk assessed as low due to the absence of historically contaminative activities identified on site.
	Lateral migration in shallow groundwater.	Surface water (Unnamed inland river 424m SW of site, surface water feature 690m S of site).	Likely	Mild	**Moderate/Low Risk:** The surface water feature 690m downslope of site could be a diverted land drain associated with the drainage ditch along the access road, therefore any on-site contamination could likely migrate into this surface water feature. It is a mild severity given the lack of historically contaminative activities on site.
		Human Health- Off site Users	Unlikely	Medium	**Low Risk:** There is limited potential for mobile contamination in the soils on site and realisation of volatilisation to indoor/outdoor air pathways. Risk assessed as low due to the distance to offsite residents and absence of historically contaminative activities on site.
	Inhalation of volatile vapours (soil and groundwater-based contamination via volatilisation to indoor air pathways)	Human Health – Future Site Users	Unlikely	Medium	**Low Risk:** There is limited potential for Made Ground present on-site due to it being a quarry base therefore it's unlikely any harmful gases are present that could impact future users via volatilisation to indoor air pathways. Risk assessed as low due to the commercial/industrial offsite use and absence of historically contaminative activities on site.
		Human Health- Off site users	Unlikely	Medium	**Low Risk:** There is limited potential for Made Ground present on-site due to it being a quarry base so therefore its unlikely any harmful gases are present that could impact future users via volatilisation to indoor air pathways. Risk assessed as low due to the commercial/industrial offsite use and absence of historically contaminative activities on site.
	Direct contact, ingestion, dust inhalation	Human Health – Future Site Users	Unlikely	Medium	**Low Risk:** There is limited potential for contamination to be present that could impact future users via direct contact, ingestion and inhalation pathways. Risk assessed as low due to the proposed commercial/industrial end land use which is unlikely to have 'green' areas to realise this pathway.
		Human Health – Future Groundworkers	Unlikely	Medium	**Low Risk:** There is limited potential for contamination to be present that could impact future groundworkers.

On-site: possible contamination in shallow soils from previous use for agriculture.	Direct contact, ingestion, dust inhalation	Human Health – Future Site Users	Unlikely	Medium	**Low Risk:** Due to the land on-site previously being a quarry and having been worked to a relatively level working platform corresponding with the bedrock bedding and there being no evidence of localised infilling on site observed, it is unlikely that any contamination from previous agricultural activities still remains on-site.
		Human Health – Future Groundworkers	Unlikely	Medium	**Low Risk:** Due to the land on-site previously being a quarry and having been worked to a relatively level working platform corresponding with the bedrock bedding and there being no evidence of localised infilling on site observed, it is unlikely that any contamination from previous agricultural activities still remains on-site.
Off site; Contamination associated with the neighbouring Building Stone Company and the Motor Test Track	Lateral migration through shallow groundwater	Human Health- Future Site Users	Unlikely	Medium	**Low Risk:** There is limited potential for migration of off-site contamination sources such as fuel oils and PAHs from surrounding land usages, given the distance between them and site.
Off site: Ground gases from historical and current landfill sites.	Inhalation of volatile vapours and accumulation of explosive/toxic gases (soil and groundwater-based contamination via volatilisation to indoor air pathways)	Human Health- Future Site Users	Low Likelihood	Medium	**Moderate/Low Risk:** There is potential for migration of off-site gases associated with landfill sites to build-up within the buildings on-site.

3.4 Risk Assessment Discussion

As detailed within the CSM table, a number of pollutant linkages have been identified at the site. A preliminary assessment of risk has been completed and appropriate risk ratings have been applied based upon the likelihood of impact and the severity, if impact does occur. Further discussion of the risk assessment is presented in the following sections.

3.4.1 Preliminary Controlled Waters Risk Assessment

Groundwater

The review of the site's environmental setting in relation to controlled water receptors has identified that the bedrock directly underlying the site (Marlstone Formation) is designated a Secondary A Aquifer. The site does not lie within an SPZ however, there are 22 known abstractions within 1.5km of the site. The closest of these is located 820m west of site and relates to general farming and domestic abstraction for Upton Farm, under the authority of EA.

There are no superficial deposits indicated to be present to protect the underlying groundwater within bedrock from potential surface derived contaminants, however further assessment would be required to confirm this. Despite the lack of superficial geology, the risks to groundwater have been identified as low at this stage based upon the absence of historic potentially contaminative uses of the site.

Based on this information the groundwater beneath site has been assigned as **low** risk.

Surface Waters

The desk-based assessment has identified that the nearest surface water features are an Unnamed river 424m SW of site and a surface water feature 690m S of site. Based on the distance involved and the slope direction of the site it is considered unlikely that the unnamed river is at risk of impact from site sourced contamination via percolation and lateral migration pathways. The surface water feature 690m downslope of site could be in continuity with the diverted land drain associated with the drainage ditch along the access road, therefore any on-site contamination could likely migrate into this surface water feature. It is a mild severity given the lack of historically contaminative activities on site.

On this basis the risks to the river are considered to be **moderate/low** and further assessment is considered necessary prior to the purchase of the site in this regard.

3.4.2 Preliminary Human Health Risk Assessment

Future Site Users

Low risks have been identified following the desk-based assessment to human health of potential future site users based on the proposed commercial/industrial end land use of the site. There is no evidence that Made Ground is present on site and based upon on the proposed end use, the site is unlikely to have 'green' areas to enable pathways through direct contact or soil ingestion. Human health risk from volatilisation of contaminants is considered **low** based upon the absences of historic potentially contaminative uses of the site and the unlikely realisation of this pathway due to the proposed hard-standing surfacing of the entire site.

Future Groundworkers

Low risks have been identified following the desk-based assessment to human health of potential future groundworkers based upon the limited potential for contamination to be present that could impact future groundworkers.

Offsite Users

Low risks have been identified to on-site human health due to the limited potential for migration of off-site sourced contamination such as fuel oils and PAHs from surrounding land usages given the distance between them and site.

3.5 Preliminary Geotechnical Assessment

3.5.1 Foundation and Floorslab Constraints

The review of geological mapping has identified that the site is likely to be underlain by the Marlstone Rock Formation however given the site appears to have been worked to at least 4.0m beneath surrounding ground level the underlying Dyrham Formation may be present at relatively shallow depth beneath the site level. Superficial deposits are not listed on the BGS map and are understood to be absent. Bedrock could provide suitable founding strata for the support of conventional shallow foundations. However, consideration must be made with regards to the potential for uneven rock head, and the degree of weathering. Other hazards such as voids as a result of cambering would be visible given the site is cut into rock.

As there is no evidence of historical development on the site, significant Made Ground is not anticipated therefore reinforced ground bearing slabs would be permissible.

Given the slight topographic slope towards the west cut and fill or up-filling may be required to provide a suitable level formation for constructing the tank farm and trafficable pavements. Imported material for this purpose should be inert and suitable for use as engineering fill and should be handled and compacted to provide a suitable formation. Material on site that maybe considered for use as engineering fill should be assessed for its suitability to act as subgrade.

3.5.2 Infiltration

Based on published ground conditions, the use of soakaway drainage systems may not be viable. Consideration therefore should be given to contacting the local sewerage operator at an early stage to discuss potential options for connecting to the local network.

3.5.3 Other Considerations

It is recommended that a suitably scoped site investigation is undertaken to assess the nature of underlying ground conditions and depths to suitable founding strata in order to enable preliminary foundation / floorslab recommendations to be provided.

3.6 Recommendations for Further Assessment

The desk study and subsequent preliminary risk assessment has identified potentially unacceptable (moderate/low) risks to surface waters as a result of site sourced contamination specifically from leaching of contaminants through lateral migration in shallow groundwater to surface water features. Risks to future site-users through inhalation of volatile vapours (soil and groundwater-based contamination via volatilisation to indoor air pathways) from landfill gases were also identified.

In addition, further information is required in order to provide suitable geotechnical information to aid foundation, floorslab and drainage design.

On this basis, a site investigation was considered to be required in order to further assess potential environmental risks and to provide further geotechnical data. Details of the works completed and the findings are presented in the following sections.

4.0 SITE INVESTIGATION

4.1 Site Investigation

<table>
<tr><td>Investigation Strategy</td><td colspan="2">The investigation was designed to deliver targeted assessment of contamination and geotechnical hazards based on risks identified in the PRA. Non-targeted locations were also advanced to provide general site coverage and aid the reliability of interpretation.</td></tr>
<tr><td>Preparatory Work</td><td colspan="2">Prior to commencement of the works, a specialist sub-contractor (Geotechnical Limited) was appointed to undertake a utility survey of the site area and specifically clear all locations for buried services and obstructions. This work was required as part of OHES standard health and safety precautions and in order to identify potential below ground pathways, contamination sources and/or receptors.

At the time of these works, a relative height survey was completed in order to obtain ground levels were collected for each proposed intrusive location.

The utility survey was completed on 25th August 2020 under supervision by an OHES consultant.</td></tr>
<tr><td rowspan="6">Investigation Methodology</td><td>Date of Works</td><td>The drilling works and trial pits were undertaken on 26th August 2020. Soakaway pits were excavated the week prior to this, week commencing the 17th August. These were positioned by the client's engineer.</td></tr>
<tr><td>Methodology</td><td>The drilling method used was rotary drilling chosen based on a preliminary site assessment and known geology.</td></tr>
<tr><td>Number of Locations</td><td>Two boreholes were drilled up to 6.00m bgl. Four trial pits were advanced up to 1.00m to 1.50m bgl. The approximate location of the boreholes was determined by the clients engineer.</td></tr>
<tr><td>Monitoring Well Installations</td><td>Monitoring wells were installed in both locations (BH1 and BH2) to enable groundwater monitoring and sampling to be completed.</td></tr>
<tr><td>Contractor</td><td>The drilling works were completed by Geotechnical Engineering Ltd, an OHES approved supplier under supervision by an OHES consultant.</td></tr>
<tr><td>Re-instatement</td><td>All trial pit locations were backfilled with arisings in the order removed and nominally compacted.</td></tr>
<tr><td>Investigation Locations</td><td colspan="2">The site investigation locations were positioned for the following purpose:
<table>
<tr><th>LOCATION</th><th>JUSTIFICATION FOR POSITION</th></tr>
<tr><td>BH1</td><td>Located in the east of site. Positioned beneath the proposed tanker parking area to identify any existing potential contamination and to target groundwater levels for drainage design.</td></tr>
<tr><td>BH02</td><td>Located in the centre and north of the site in the location of the proposed roadway. Positioned to laterally cover the site and to identify changes in ground condition and potential contamination.</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>TP1</td><td>Located near the centre of the site. Positioned to the south of the proposed tank farm.</td></tr>
<tr><td>TP2</td><td>Located in the west of site. Underneath the proposed bottom loading skids.</td></tr>
<tr><td>TP3</td><td>Located near the centre of the site. Positioned to the north of the proposed tank farm.</td></tr>
<tr><td>TP4</td><td>Located in the east of the site. Positioned underneath the roadway.</td></tr>
</table>
All locations were selected with the aim to achieve a good spread laterally across the site to delineate any possible areas of contamination.

Trial pits SA1 to SA6 were not logged as these trial pits were excavated the week prior. Groundwater flooded the trial pits so no observations could be made during the OHES attendance. The arisings were however inspected and found to reflect the ground conditions in the OHES trial pits.

The position of the intrusive locations and soakaway trial pits is presented in Figure 2.</td></tr>
<tr><td>Soil Logging and Sampling</td><td>Logging and sampling of soil was undertaken by a qualified OHES Geo-Environmental Consultant in general accordance with BS5930:2015+A1:2020.

During the investigation, representative soil samples were collected and placed into small plastic bags to allow accurate screening for volatile vapours using a photo-ionisation detector (PID). Following initial screening and logging, selected soil samples were placed into suitable glass jars for submission to Element Materials Technology laboratory for chemical analysis.

Selected small and bulk disturbed samples were collected from selected investigation locations for geotechnical testing by i2 Analytical Laboratories.</td></tr>
<tr><td>Water Monitoring and Sampling</td><td><u>Groundwater</u>
Groundwater monitoring was undertaken on 1 no. monitoring event following the investigation (2nd September 2020) using an oil/water interface probe with the aim of confirming the following:

• Depth and thickness of any Light Non-Aqueous Phase Liquids (LNAPL) and/or Dense Non-Aqueous Phase Liquids (DNAPL);
• Groundwater depth; and
• Borehole depth.

Upon completion of monitoring representative samples were collected from each accessible well (where sufficient water was present). Prior to sampling, each well was purged of three well volumes using a bailer. Once three well volumes had been removed from the well a representative sample was collected and placed directly into appropriate glass bottles for the analysis required.

Additional bottles were also filled to allow headspace readings for volatile organic compounds (VOC) using a PID and assessment of visual or olfactory evidence of impact.</td></tr>
</table>

<table>
<tr><td></td><td><u>Sample Handling</u>
Once collected, the samples from the site were transferred in chilled cool boxes to Element Materials Technology Laboratories with an appropriate chain of custody.</td></tr>
<tr><td>Vapour Monitoring</td><td>Volatile vapour monitoring was completed at the time of the groundwater monitoring on 2nd September 2020.

VOC readings were collected using a suitably calibrated hand-held PID.</td></tr>
<tr><td>Soil and Water Sample Analysis</td><td>Selected soil and water samples collected from the site were scheduled for chemical testing to allow an assessment of the severity and vertical/lateral extent of contamination present.

The scope of testing scheduled was based on contaminants of concern likely to be present as identified in the PRA. The extent of testing undertaken was as follows:
<table>
<tr><th rowspan="2">CONTAMINANTS</th><th colspan="2">NUMBER OF SAMPLES ANALYSED</th></tr>
<tr><th>SOIL</th><th>WATER</th></tr>
<tr><td>TPH CWG</td><td>2</td><td>2</td></tr>
<tr><td>Banded EPH</td><td>4</td><td>0</td></tr>
<tr><td>SVOCs</td><td>2</td><td>0</td></tr>
<tr><td>VOCs</td><td>2</td><td>0</td></tr>
<tr><td>Metals</td><td>2</td><td>0</td></tr>
<tr><td>pH</td><td>2</td><td>0</td></tr>
<tr><td>SOM</td><td>2</td><td>N/A</td></tr>
<tr><td>Asbestos</td><td>1</td><td>N/A</td></tr>
</table></td></tr>
<tr><td>Geotechnical Sample Analysis</td><td>Selected soil samples collected from the investigation were submitted to i2 Analytical Laboratories (an OHES approved supplier) for suitable and representative geotechnical testing to allow foundation design. The testing undertaken was as follows:
<table>
<tr><th>TEST</th><th>NUMBER OF SAMPLES TESTING</th></tr>
<tr><td>BRE SD1 classification</td><td>2</td></tr>
<tr><td>Atterberg Limits</td><td>2</td></tr>
<tr><td>Point Load Index Pair</td><td>9</td></tr>
</table></td></tr>
</table>

4.2 Ground Conditions Encountered

A summary of the ground conditions encountered during the investigation is presented in the following table. Further details on ground conditions can be found on the investigation logs presented in Appendix 6.

GEOLOGICAL TYPE	DEPTHS ENCOUNTERED	THICKNESS	DESCRIPTION	LOCATION
Made Ground	0.0m bgl	0.2 - 0.84m	Brown gravelly CLAY with limestone cobbles and boulders (reworked natural)	All locations, deepest at TP4

Bedrock	0.2m to 0.3m bgl	Base not defined. Maximum thickness 5.8m (BH1)	Blueish/grey LIMESTONE with fossils of with belemnites and brachiopods (*Lobothyris* and *Tetrarhynchia*). Orangey grey MUDSTONE with iron staining.	All locations.

In addition to the above the bedrock surface at the site was found to be dipping gently south. The bedrock jointing was found to be moderately to widely spaced and of medium persistence (3-10m), joints were infilled with silt/clay and were generally vegetated.

4.3 Groundwater Information

4.3.1 Groundwater Strikes

Groundwater strikes were encountered at 1.3m bgl in BH1 and 1.4m bgl in BH2. Groundwater strikes were encountered at approximately 0.55m in the trial pits.

4.3.2 Groundwater Monitoring

The results of groundwater monitoring are presented in Appendix 7. In summary, groundwater was encountered at depths ranging between 1.020m (BH2) and 1.050m (BH1) bgl.

4.3.3 Permeability

During groundwater sampling the recharge from both boreholes was noted to be good.

4.4 Ground Gas Information

The site is located in a Higher probability radon area (more than 30% of homes are estimated to be at or above the Action Level). Full radon protective measures are necessary in the construction of new dwellings or extensions.

5.0 GEOTECHNICAL RESULTS AND ASSESSMENT

5.1 Underground Obstructions

No underground obstructions were noted during the intrusive site investigation.

5.2 In-Situ Test Results

5.2.1 Infiltration Test for Soak Away Design

Four soakaway pits were excavated within the site boundary (SA1-SA4) and two additional soakaway pits were excavated along the ditch down the access road (SA5-SA6). It was noted whilst excavating the trial pits that water seepage was coming in at around 0.55m and 0.65m bgl, on the day of the site investigation all of the soakaway pits contained significant amounts of water, therefore no soakaway tests could be completed on-site.

5.3 Laboratory Test Results

Geotechnical Laboratory Test results can be found in Appendix 10.

5.3.1 BRE Sulphate Testing for Concrete Aggressivity

Moisture content in the two samples analysed for BRE Sulphates was 21.4% at 0.55m and at 0.9m bgl. Soil pH values ranged from 8.17 to 8.29 (slightly alkaline).

Results of the water-soluble sulphate soil analysis for TP1 (0.55m) and TP3 (0.9m) are summarised below. As is shown below water soluble sulphate concentrations range from 29.8 to 25.1mg/l (mean 27.45mg/l).

Analysis (SOIL)	Units	Trial Pit reference and depth (m)	
		TP1 (0.55m)	TP3 (0.9m)
Water Soluble SO4 (2:1 Leachate Equivalent)	mg/l	29.8	25.1
pH	n/a	8.17	8.29
Magnesium	mg/l	1.5	0.8
Total Sulphur	%	0.02	0.01
Total Sulphate	%	0.03	0.03

Groundwater samples from BH1 and BH2 analysed following the monitoring were shown as containing sulphates ranging between 43.4 and 54.4mg/l with a pH values of 7.5.

5.3.2 Atterberg Limits

One bulk disturbed sample of soil was submitted to i2 Analytical Laboratories for Atterberg's and divide into sub samples for 1-Point Analysis, the results of which are enclosed. In summary moisture contents in the soils sampled at 0.5m were found to range between 22 and 28% (mean 25%).

LOCATION AND DEPTH	PLASTICITY INDEX (%)	INTERPRETATION
SA2 (0.5m)	25	High plasticity silt
SA2 (0.5m)	22	High plasticity silt

Plasticity indices ranged between 22 and 25% with both soils being described as high plasticity silt.

These materials represent weathered rock and weather rock interbeds which have weathered to clay/silt soil.

5.3.3 Point Load Index Testing

Suitably sized rock fragments were sampled from two bulk bags (SA2 and TP3) which represented rock/soil recovered from the top 1m of ground at those locations. Samples were subjected to point load testing by i2 Laboratories to ascertain the point load strength index Is(50) of the sampled rock.

These results are enclosed, however in summary samples of sandstone recovered from SA2 were found to have a mean Is(50) of 1.3. Limestone fragments from TP3 were found to have a mean Is(50) of 3.34.

5.4 Interpretation and Assessment

5.4.1 In-Situ Test Results

No Insitu ground strength testing was undertaken due to the shallow bedrock.

5.4.2 Infiltration Testing for Soak Away Design

Due to the presence of shallow water within all trial pits (SA1 – SA6 and TP1 – TP4) the completion of soak away testing was not possible. Groundwater levels observed in the boreholes during monitoring were approximately 1.0m bgl and ingress of water was good confirming that the observed water levels were associated with a continuous groundwater level.

Deeper borehole soakaways are also not deemed to be viable based on ground conditions encountered in the top 6m (no extensively fractured rock). In addition, water levels within the wells were similar to water strike levels a week after installation indicating poor drainage. It is likely that the site level is approximately at the spring line where the Marlstone Rock meets the less permeable underlying Dyrham Formation.

5.4.3 Laboratory Test Results

5.4.4 BRE Sulphate Testing for concrete aggressivity

Based upon the BRE Sulphate analysis of soils and groundwater the Aggressive Chemical Environment for Concrete (ACEC), the design Class for buried concrete DS1 – AC1 is derived including for Total Potential Sulphate (0.06%) and Oxidisable sulphate (0.03%) within a natural environment setting (non-brownfield).

5.4.5 Atterberg Limits

This data once modified for particles <425µm results in the clay/silt material within the bedrock being classified as having a modified plasticity index of 14, and low volume change potential (between 10 and 20%). It should be noted however that these silt soils are likely to be compressible and susceptible to the effects of frost.

5.4.6 Point Load Index Testing

Using the mean Is(50) value for the sandstone this has been converted into an approximate compressive strength of 25MPa. For the limestone an approximate derived compressive strength of 60MPa has been derived (ISRM 2007). The rocks did not contain laminations or other planes of weakness therefore these values are valid.

The sandstone tested can be described as a weak to medium strong rock and the limestone can be described as strong rock.

6.0 LAND CONTAMINATION ASSESSMENT

6.1 Evidence of Contamination Encountered

6.1.1 Soils

No evidence of soil contamination was observed during ground investigations, PID readings were taken at 0.5m intervals and all readings were recorded as <0.1ppm.

6.1.2 Groundwater

Details of contamination observations and volatile vapour readings are presented in the groundwater monitoring sheets presented in Appendix 7.

No free product was encountered in the boreholes during either visit. This is consistent with the absence of olfactory or visual signs of contamination during the site investigation and absence of historic contaminative land uses on site.

VOC readings from both boreholes were <0.1ppm.

The groundwater samples obtained from BH1 and BH2 were not noted to have olfactory or visual signs of contamination.

6.2 Chemical Analysis – Soils

The laboratory test results are presented in the laboratory analysis certificates in Appendix 8.

Where possible the soil results have been compared to the respective Human Health guidance criteria for a commercial end use including LQM/CIEH S4ULs, Tier 1 Generic Assessment Criteria (VOC/SVOC) produced by CL:AIRE/AGS and Soil Guideline Values (SGV). These are considered the most suitable given the proposed development of this site into a fuel depot.

Guideline values for 2.5% SOM, where available, have been used in this assessment to assess risks to Human Health as they are considered the most suitably conservative.

The results of the tier 1 screening are presented in Appendix 9. A discussion of the results is presented in the following sections.

6.2.1 Hydrocarbons

There were no detections of TPHCWG, BTEX and MTBE within four of the six soil samples submitted for analysis. TP1 (0.55m) and TP4 (0.2m) had minor detections of EPH banding C21-C40 at concentrations of 44mg/kg and 78mg/kg respectively.

All of the results were compared against Tier 1 screening values protective of human health for commercial land used and no exceedances of these values occurred.

6.2.2 Volatile and Semi-Volatile Organic Compounds

SVOCs (mainly PAH's: Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, and Benzo(b)fluoranthene) were detected at minor concentrations in one of the two soil samples analysed (TP4 at 0.2m bgl). These concentrations do not exceed the Tier 1 Screening criteria. There were no detections of VOCs within soil samples analysed.

6.2.3 Metals

There were detections of metals in the two of the soil samples submitted for analysis, though concentrations did not exceed the Tier 1 screening levels protective of human health receptors for commercial land use. Concentrations of metals within soil samples analysed were typical of background concentrations available for review within the Envirocheck report in Appendix 4.

6.2.4 Asbestos

No asbestos containing materials (ACMs) were encountered during the intrusive works. Asbestos fibres were not identified in the soil sample analysed (TP4 at 0.20m bgl).

6.3 Chemical Analysis – Groundwater

The laboratory analysis results are presented in the laboratory certificates in Appendix 8.

For the purpose of assessing risks to controlled waters, the results have been compared against the following Tier 1 Criteria:

- Guideline values for the protection of surface water for potable abstraction (1996);
- UK Drinking Water Standards (DWS) for the protection of groundwater or the Water Supply Regulations (1989);
- Statutory and Non-Statutory Environmental Quality Standards (EQS); and
- Sum of 5 PAH - EA Surface-water Pollution RA for Environmental Permitting.

The results of the Tier 1 screening are presented in Appendix 9. A discussion of the results is presented in the following sections.

6.3.1 Hydrocarbon Contamination

There were no detections of TPHCWG, BTEX or MTBE in groundwater samples analysed from BH1 or BH2.

7.0 ENVIRONMENTAL RISK ASSESSMENT

7.1 Identified Contamination

Soils

No visual and olfactory evidence was identified in soils across the site or during ground investigations.

The results assessment has not identified any elevated concentrations of TPH (Aliphatics and Aromatics), SVOC or VOC (including BTEX) at concentrations in exceedances of Tier 1 screening levels protective of on-site human health receptors for industrial/commercial end use of site. On this basis, no further assessment or remedial action is considered necessary in this regard.

There were no detections of metals recorded in exceedances of Tier 1 screening levels protective of on-site human health receptors for industrial/commercial end use of site. Elevated detections of metals have been identified, though considered a very low risk, a conservative approach would be to adopt the use of PPE and construction management practices during redevelopment of the site.

No asbestos fibres were detected in the soils submitted for the analysis. Although no asbestos fibres were identified within these samples, the possible presence of further asbestos contamination within the Made Ground in other locations across the site can't be ruled out at this stage.

Waters

No visual and olfactory evidence was identified during groundwater monitoring and sampling visits.

There were no detections of determinants within groundwater samples analysed (BH1 and BH2), there is no evidence of impact to groundwater, soil is not indicated to be significantly impacted and therefore is not considered as a likely source to groundwater.

7.2 Identified Receptors

- Future site users; and
- Future ground workers.

7.3 Identified Pathways

- Inhalation, ingestion and direct contact by humans (groundworker receptors).
- Inhalation of volatile vapours (soil and groundwater-based contamination via volatilisation to indoor air pathways).

7.4 Updated Conceptual Site Model

The table overleaf presents an updated conceptual site model following completion of the intrusive investigation. The table includes details of the potential pollutant linkages considered to present and an associated risk assessment completed in accordance with the same methodology as the preliminary risk assessment as detailed in Section 4.3 and as detailed in Appendix 2.

IDENTIFIED POLLUTANT LINKAGES			UPDATED RISK ASSESSMENT		
SOURCE	**PATHWAY**	**RECEPTOR**	**PROBABILITY**	**SEVERITY**	**RISK ASSESSMENT AND JUSTIFICATION**
Site soils - natural background heavy metal concentrations	Direct contact, ingestion, dust inhalation	Human Health – Future Site Users	Unlikely	Mild	**Very Low Risk:** There were detections of Metals in soil samples, however these are in line with published background soil concentrations. The risk is assessed as very low due to the proposed commercial/industrial end use of the site which is unlikely to have 'green' areas to realise this pathway.
		Human Health – Future Groundworkers	Unlikely	Mild	**Very Low Risk:** There were detections of Metals in soil samples, however these are in line with published background soil concentrations. This could impact future groundworkers via direct contact and via duct inhalation during earthworks however it is considered to be of very low risk.
Site soils - agriculture pesticides	Direct contact, ingestion, dust inhalation	Human Health – Future Site Users	Unlikely	Mild	**Very Low Risk:** No shallow soils from agriculture exist on-site. Due to the land on-site previously being a quarry and having been worked to a relatively level working platform corresponding with the bedrock bedding and there being no evidence of localised infilling on site observed, it is unlikely that any contamination from previous agricultural activities still remains on-site.
		Human Health – Future Groundworkers	Unlikely	Mild	**Very Low Risk:** No shallow soils from agriculture exist on-site. Due to the land on-site previously being a quarry and having been worked to a relatively level working platform corresponding with the bedrock bedding and there being no evidence of localised infilling on site observed, it is unlikely that any contamination from previous agricultural activities still remains on-site**.**
Off-site Ground gases from historical and current landfill sites	Inhalation of volatile vapours and accumulation of explosive/toxic gases (soil and groundwater-based contamination via volatilisation to indoor air pathways)	Human Health – Future Site Users	Unlikely	Mild	**Very Low Risk:** The site investigation identified that the geology below the site is impermeable, also the shallow groundwater will reduce the likelihood of the gases building up. The large distance to the landfill sites also reduces the likelihood of migration from these gases. It has been recommended that the office building is fitted with a radon barrier.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions Geotechnical

General

The site formation level comprises of strong limestone bedrock with reprofiled slopes and banks defining the edges. Although the ground conditions appear favourable for construction care should be taken when completing earthworks excavations adjacent to these slopes, as detailed within slope instability can be an issue especially with shallow groundwater levels at the site.

At one location (TP4) the upper 0.85m of ground comprised of reworked soil and rock (Made Ground). It is possible these conditions are replicated elsewhere on site.

Foundations

Tank Farm

Based on observed ground conditions and laboratory testing the underlying bedrock is not a continuous slab of thickly bedded limestone or sandstone but instead comprises of an interbedded sequence of limestone and mudstones/siltstones in places weathered to clay/silt. The shallowest clay/silt band was identified at most exploratory locations varying in depth from 0.5 to 0.85m bgl.

Groundwater seepages were encountered at circa 0.5 to 0.75m depth coinciding with the aforementioned strata. Inflows were moderate, with levels rising to rest at approximately 0.5m bgl.

Although there is vertical variability in the ground conditions the overall bearing capacities are more than adequate for typical tank farm loadings (circa 50kpa). The clay/silt bands are not thick (generally <300mm) however total settlements maybe more than 50mm.

Office Block

Any shallow foundation will need to be bearing on the underlying mudstone at circa 1.0m bgl to ensure adequate and consistent bearing beyond the clay bed. Foundations will need to be dewatered prior to the placement of concrete.

Office block floor slabs may consist of ground bearing reinforced concrete which should include a radon barrier.

For the purposes of designing the appropriate concrete mix for shallow foundations and floor slabs, the ACEC classification for the site is DS-1 - AC-1.

Pavements

Although no CBR testing was undertaken the existing quarry floor will have CBR values >3%.

Drainage

Based on the shallow seepage of groundwater it is not advisable that soakaways are used on-site for drainage.

Other Considerations

To enable groundworks sumps or trenches could be utilised upgradient of groundworks to intercept groundwater seeping through the limestone bed to improve working conditions.

OHES have not been provided with proposed finished ground levels, however it is assumed that some reprofiling of the site will take place during construction. It may be possible to reuse some of the

materials generated to build up site levels etc. if required. This would be subject to an evaluation of site levels and a proven requirement for the re-use of these materials on-site. The re-use of any site won materials will need to be undertaken in accordance with a site-specific Materials Management Plan (MMP). Considerable volumes of waste materials (soils etc.) are likely to be generated by the excavation of new foundations and service trenches. Allowance should be made for the disposal of these materials in accordance with current UK waste disposal regulations.

8.2 Conclusions Environmental

Human Health – Future Site Users

The screening of the soil analysis results against conservative Tier 1 screening criteria protective of onsite commercial/industrial users has not identified any exceedances for any of the potential Contaminants of Concern (CoCs) analysed for including TPH (Aliphatics and Aromatics), EPH, SVOC, VOC, Heavy Metals, and BTEX.

No shallow soils from agriculture exist on-site. Due to the land on-site previously being a quarry and having been worked to a relatively level working platform corresponding with the bedrock bedding and there being no evidence of localised infilling on site observed, it is unlikely that any contamination from previous agricultural activities still remains on-site.

On this basis, no potential risks to human health receptors associated with a future industrial/commercial use of the site from soil sourced contamination have been identified. No further assessment or remedial action is considered necessary in this regard.

Human Health - Groundworkers

It is likely that groundworks may need to be conducted on site, therefore groundworkers have the potential to come into contact with soils with elevated concentrations of heavy metals principally via dermal contact, inhalation, and ingestion pathways. There were however no exceedances of the relevant criteria and therefore, the risk associated with the above pollutant linkages has been assessed as being **very low.** However, appropriate RAMS in accordance with CDM regulations and correct the use of appropriate PPE and good hygiene practice should mitigate any limited risk to construction workers at the site.

Asbestos was not identified in soil samples submitted for analysis. The potential for soil sourced Asbestos contamination is not likely to be present beneath the site due to the absence of Made Ground and therefore does not need to be considered as part of any future development works.

Human Health – Offsite staff/public

There were no analysis results in exceedance of the Tier 1 screening values protective of human health and given the distance to offsite receptors on the nearby Horton Grounds Farm site the risks are deemed to be **very low.**

8.3 Recommendations

8.3.1 Geotechnical Assessment

Shallow groundwater presents a problem for bedding the tank farm tank base into the upper strata. Any excavation would need to be progressed to at least 1.2m depth to encounter the competent mudstone beyond the clay/silt (weathered mudstone). Given the general situation with shallow groundwater and drainage it maybe instead beneficial to raise site levels using imported stone engineered on the existing limestone bed to form a suitable formation level.

As the clay layer appears to be continuous across the site differential settlements are unlikely, however to further mitigate this, in addition to the extra loading afforded by the placement of engineered fill the tanks could be pre-loaded with water prior to filling with fuel to induce settlement prior to commissioning.

A cost benefit analysis should be undertaken to compare 1) excavation of the tank base footprint and reinstatement with engineered fill (including the management of groundwater) with 2) the upfilling of site and pre-loading the underlying strata.

Further sampling and geotechnical testing of the clay or Insitu plate loading tests of the surface limestone would be recommended to assist in the above options appraisal to ascertain the potential settlement.

8.3.2 Environmental Assessment

As a result of this environmental assessment, only risks to future site ground workers are considered to be of limited concern, this regards to the presence of naturally occurring metals in soils (although below the Tier 1 values).

Appropriate RAMS in accordance with CDM regulations and correct the use of appropriate PPE and good hygiene practice should mitigate any limited risk to construction workers at the site. The investigation was limited to the data collected and does not negate the risk of unexpected contaminants, In the event of encountering unexpected contaminants, OHES should be contacted.

8.3.3 Other recommendations

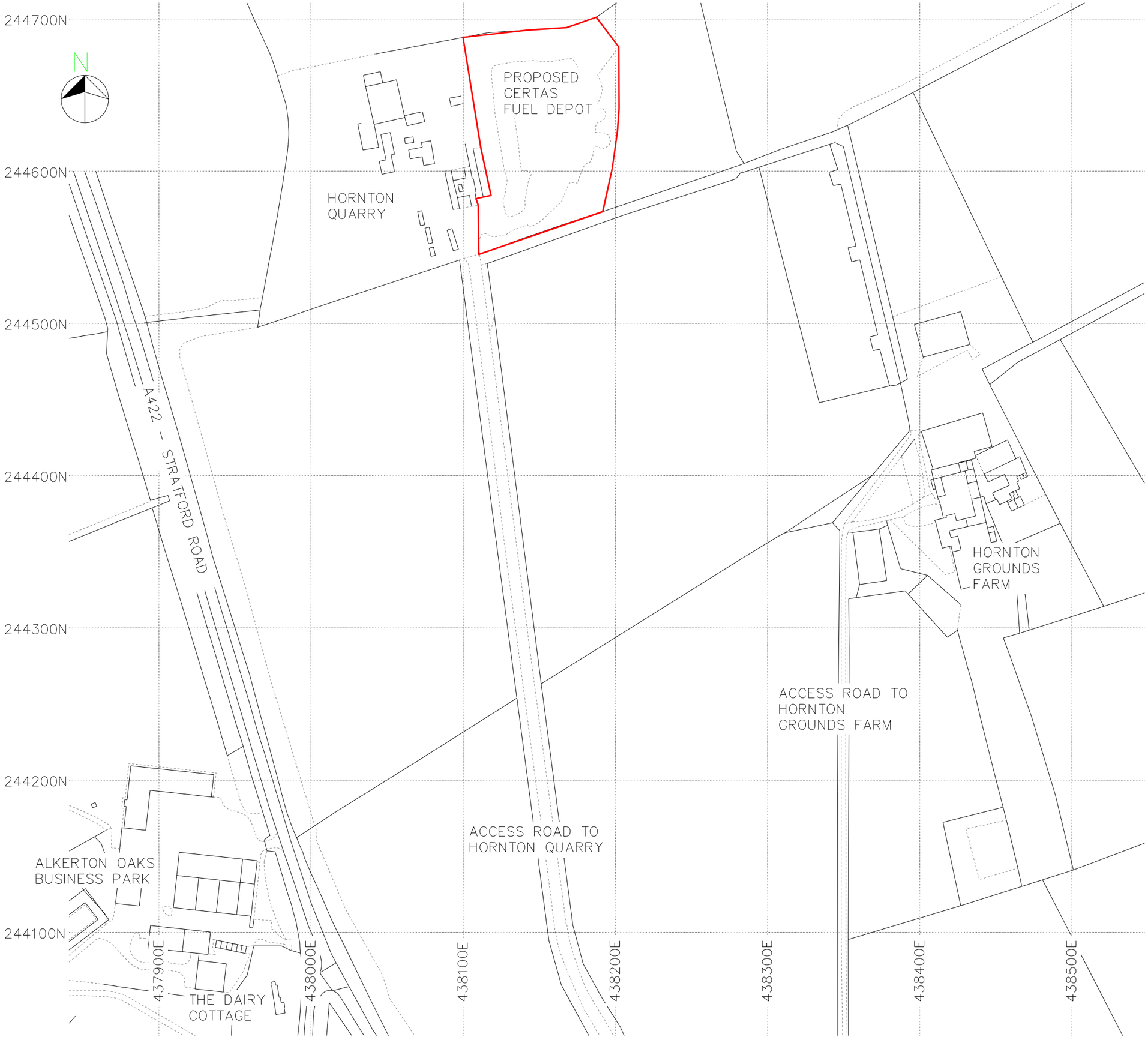
There is a potential pollutant linkage from site to a surface water feature which may be connected to a diverted land drain from the site. On-site construction activities that could cause development of sediment could impact surface waters, appropriate mitigation measures. OHES also recommends that the groundwater monitoring wells on-site are retained to allow for future monitoring.

8.3 Statement on Objectives

OHES considers that this assessment provides a suitable and accurate assessment of all known contamination and geotechnical hazards and associated risks and provides recommendations for further works, where necessary. Therefore, it is considered that this assessment fully meets the objectives set out in Section 1.2 of this report.

FIGURE 1

SITE LOCATION PLAN



Rev:	Date:	Revision Details:	Rev By:	Chk:	Appr:
A	14.11.19	FIRST ISSUE	SMont	CH	NM

Certas Energy UK Ltd
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www.tridenteng.net

Site: BANBURY – HORNTON QUARRY

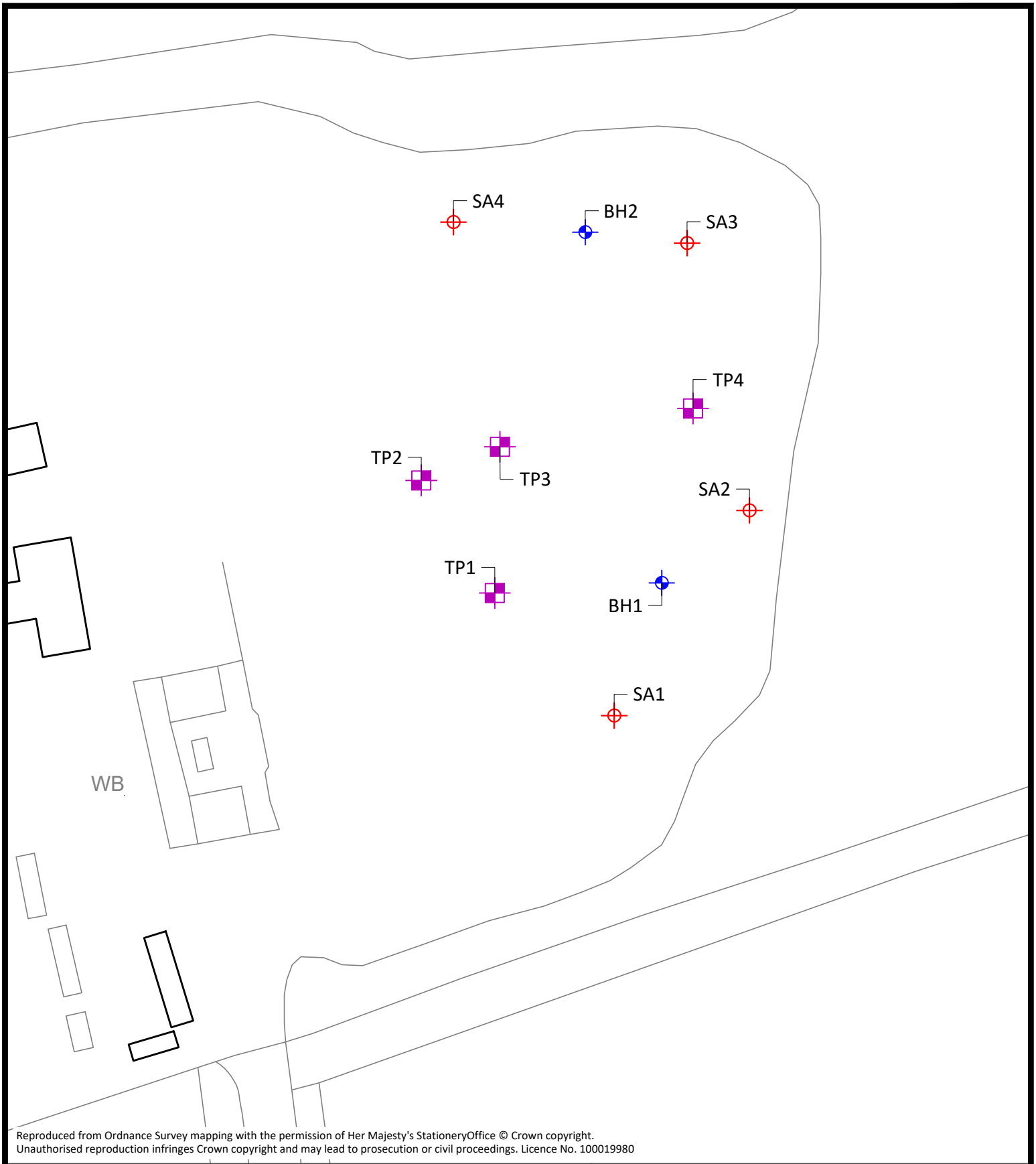
Title: LOCATION PLAN

Dwg By:	Checked:	Approved:
SMont	CH	NM
Date: 14.11.19	Date: 14.11.19	Date: 14.11.19

Scale:	Drawing No:	Rev:
1:2500 @ A3	6289–803	A

FIGURE 2

CURRENT SITE LAYOUT AND INTRUSIVE LOCATION PLAN



Legend

- BH = Borehole
- TP = Trial Pit
- SA = Soakaway

Figure:

Intrusive Location Plan

Site:

Hornton Quarry

Job No:

FJ6114

OHES Environmental Ltd
Unit 3 Forest Court,
Oaklands Business Park
Wokingham | Berkshire
RG41 2FD

Date: 14/09/2020

Drawn by: AMP

Checked by: Stacey Higgs

Drawing Ref: FJ6114_Hornton Quarry_01

Not to Scale

Revision: A

N

FIGURE 3

PROPOSED FUTURE LAYOUT PLAN

Rev:	Date:	Revision Details:	Rev By:	Chk:	Appr:
B	21.05.20	INTERNAL BOUNDARY WALL ADDED SITE DEMISE REVISED LIGHTING COLUMN ADDED	YF	CH	NM
A	02.12.19	FOR COMMENT	YF	CH	NM

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www.tridenteng.net

Site: BANBURY HORNTON QUARRY

Title: PROPOSED SITE LAYOUT

Dwg By:	Checked:	Approved:
SMont	CH	NM
Date: 08.11.19	Date: 08.11.19	Date: 08.11.19

Scale:	Drawing No:	Rev:
1:250 @ A1	6289-801	B

APPENDIX 1

ASSESSMENT LIMITATIONS

OHES ASSESSMENT LIMITATIONS

The ESA has been produced solely for the clients named in Section 1.0 of the report and under the specific terms of the instruction. OHES cannot accept any responsibility for any use of or reliance on the contents of this report by any third party without its formal written consent.

The assessment has been completed in the context of the agreed scope of work and should not be used in a different context or for a different purpose. Specific details of the context and purpose of the assessment is provided within Section 1.0 of the report. Furthermore, should any new information, changes in best practices and / or changes in legislation arise in the future then this may require re-assessment of the findings of the assessment.

The information and conclusions contained within the assessment have been made based upon information provided by (but not limited to) those listed within the report. OHES cannot be held responsible for inaccuracies in the data supplied or published by any other party. In addition, no responsibility can be accepted by OHES for any variations in environmental liabilities which arise from information or reports not provided at the time of the assessment and where the presence of such information could not be foreseen.

The assessment and its conclusions and recommendations are based upon the context and land use (current and proposed) detailed within the report. In addition, the assessment has been based upon the nature of the surrounding area at the time of completing the assessment and with consideration of any reasonably foreseeable potential future changes. Should the site or surrounding area be redeveloped in the future then this may change environmental risks identified and require review of this assessment.

APPENDIX 2

RISK ASSESSMENT METHODOLOGY

AND CLASSIFICATIONS

BASIS FOR QUALITATIVE RISK ASSESSMENT

The criteria use for risk assessment are broadly based on those presented in Section 6.3 of the CIRIA Report 'Contaminated Land Risk Assessment: A Guide to Good Practice' (CIRIA Report C552). The Severity of the risk is classified according to the criteria provided in the table below:

SEVERE	Acute risks to human health. Catastrophic damage to buildings/property (e.g. by explosion). Major pollution of controlled waters (watercourses or groundwater).
MEDIUM	Chronic (long-term) risk to human health. Pollution of sensitive controlled waters (surface waters or aquifers). Significant effects on sensitive ecosystems or species.
MILD	Pollution of non-sensitive waters. Significant damage to buildings or structures. Requirement for protective equipment during site works to mitigate health effects.
MINOR	Damage to non-sensitive ecosystems or species. Minor damage to buildings or structures.

The probability of the risk occurring is classified according to criteria given in the table below:

HIGH LIKELIHOOD	Pollutant linkage may be present but the circumstances under which harm would occur are improbable.
LIKELY	Pollutant linkage may be present, and it is probable that the risk will occur over the long term.
LOW LIKELIHOOD	Pollutant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
UNLIKELY	Pollutant linkage may be present but the circumstances under which harm would occur are improbable.

An overall evaluation of level of risk is gained from a comparison of the severity and probability, as shown below:

		SEVERITY			
		SEVERE	**MEDIUM**	**MILD**	**MINOR**
PROBABILITY	**HIGH LIKELIHOOD**	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	LIKELY	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	LOW LIKELIHOOD	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	UNLIKELY	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

The various risk rankings provide guidance for recommended actions, whether this is:

AR - Action Required. Remediation, mitigation or site investigation works required
SIR - Site Investigation / Further Assessment Required.
NAR - No Action Required.

A description of the evaluated risk is as follows:

EVALUATED RISK	RECOMMENDED ACTIONS
Very High Risk	**AR:** There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High Risk	**AR:** Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the long term.
Moderate Risk	**SIR:** It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low Risk	**NAR:** It is possible that harm could arise to a designated receptor from an identified hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.
Very Low Risk	**NAR:** There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

APPENDIX 3

SITE PHOTOGRAPHS

Photograph 1

Photograph 1 – *Photograph is taken looking north to north-east. This image shows the location of BH2 and the stepped quarry sides.*

Photograph 2

Photograph 2 – *Photo is taken facing south-west. This photograph shows the vegetation growing within the fractures in the bedrock.*

Photograph 3

Photograph 3 – *This photograph is of soakaway pit 2, illustrating the shallow depth to groundwater on-site.*

Photograph 4

Photograph 4 *– This photograph shows soakaway pit five progressed along the ditch next to the access road to the site.*

Photograph 5

Photograph 5 *– This photograph is of trial pit two showing the various geological horizons. Water seepage can be seen near the base of the excavation.*

Photograph 6

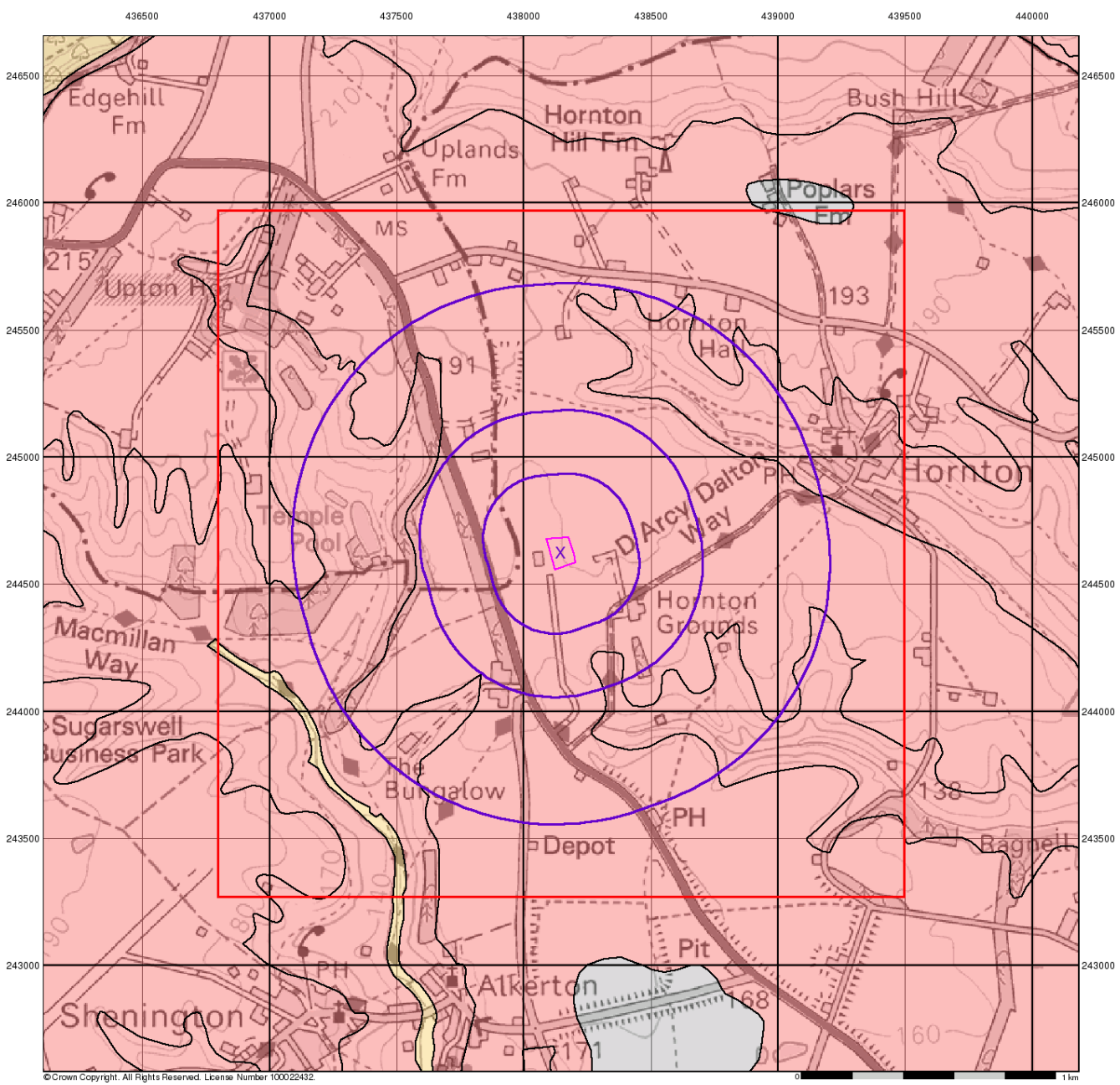
Photograph 6 -*This photograph shows the core run taken from BH2.*

Photograph 7

Photograph 7 – *This photograph shows a Tetrarhynchia braciopod fossil found within the limestone beds.*

APPENDIX 4

ENVIROCHECK REPORTS, AND OTHER REGULATORY DATA



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Groundwater Vulnerability

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

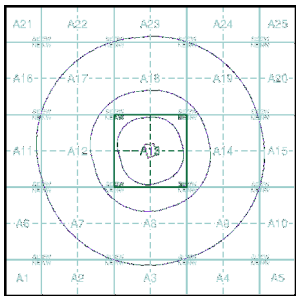
Agency and Hydrological

Bedrock Aquifers	Superficial Aquifers
High Vulnerability, Principal Aquifer	High Vulnerability, Principal Aquifer
High Vulnerability, Secondary Aquifer	High Vulnerability, Secondary Aquifer
Medium Vulnerability, Principal Aquifer	Medium Vulnerability, Principal Aquifer
Medium Vulnerability, Secondary Aquifer	Medium Vulnerability, Secondary Aquifer
Low Vulnerability, Principal Aquifer	Low Vulnerability, Principal Aquifer
Low Vulnerability, Secondary Aquifer	Low Vulnerability, Secondary Aquifer

Unproductive Aquifer

Soluble Rock

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	1000

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

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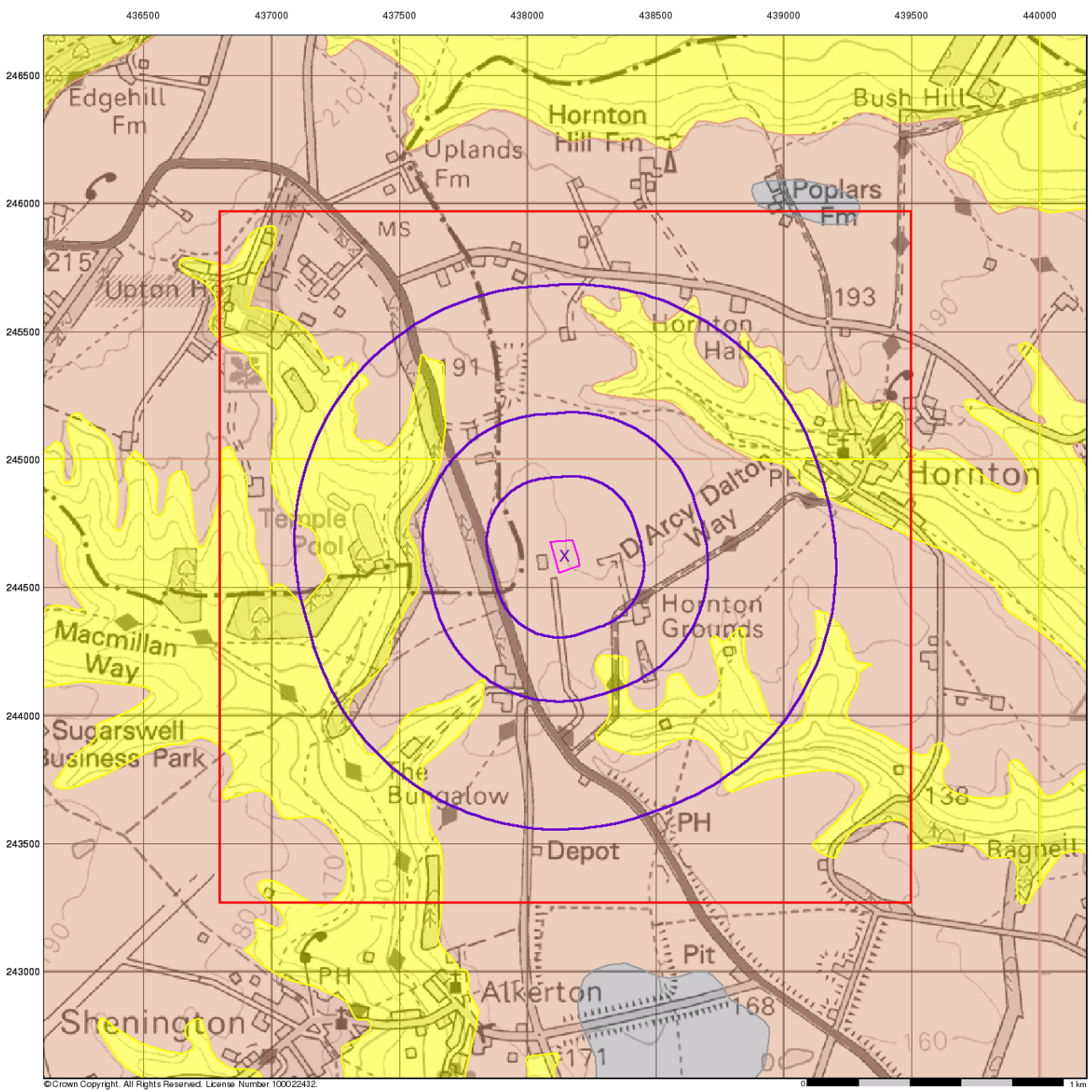

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Bedrock Aquifer Designation

General

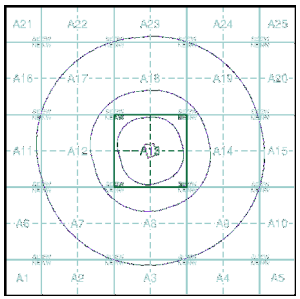
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



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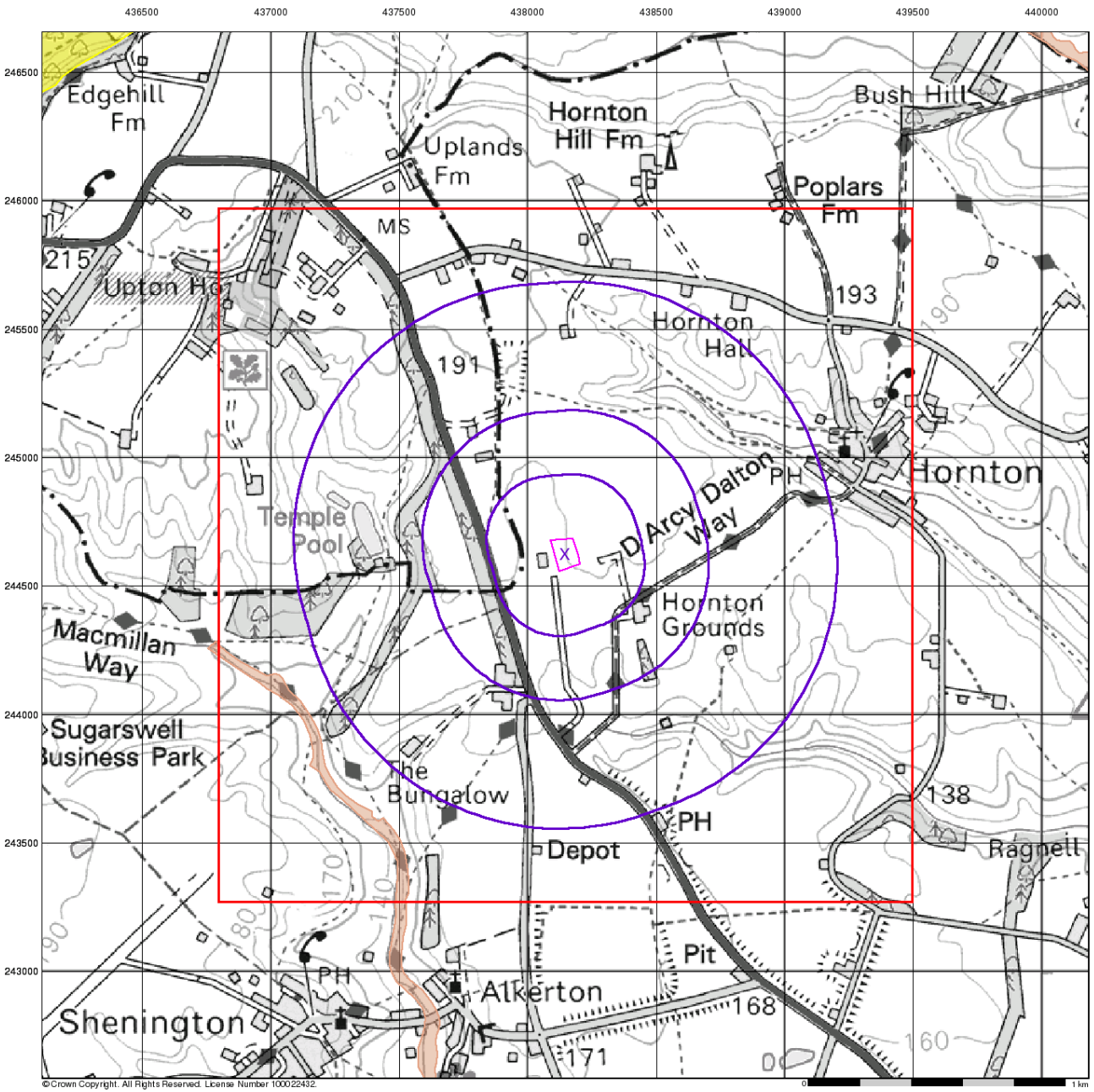

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Superficial Aquifer Designation

General

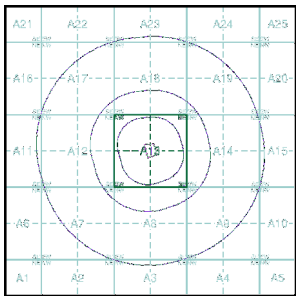
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



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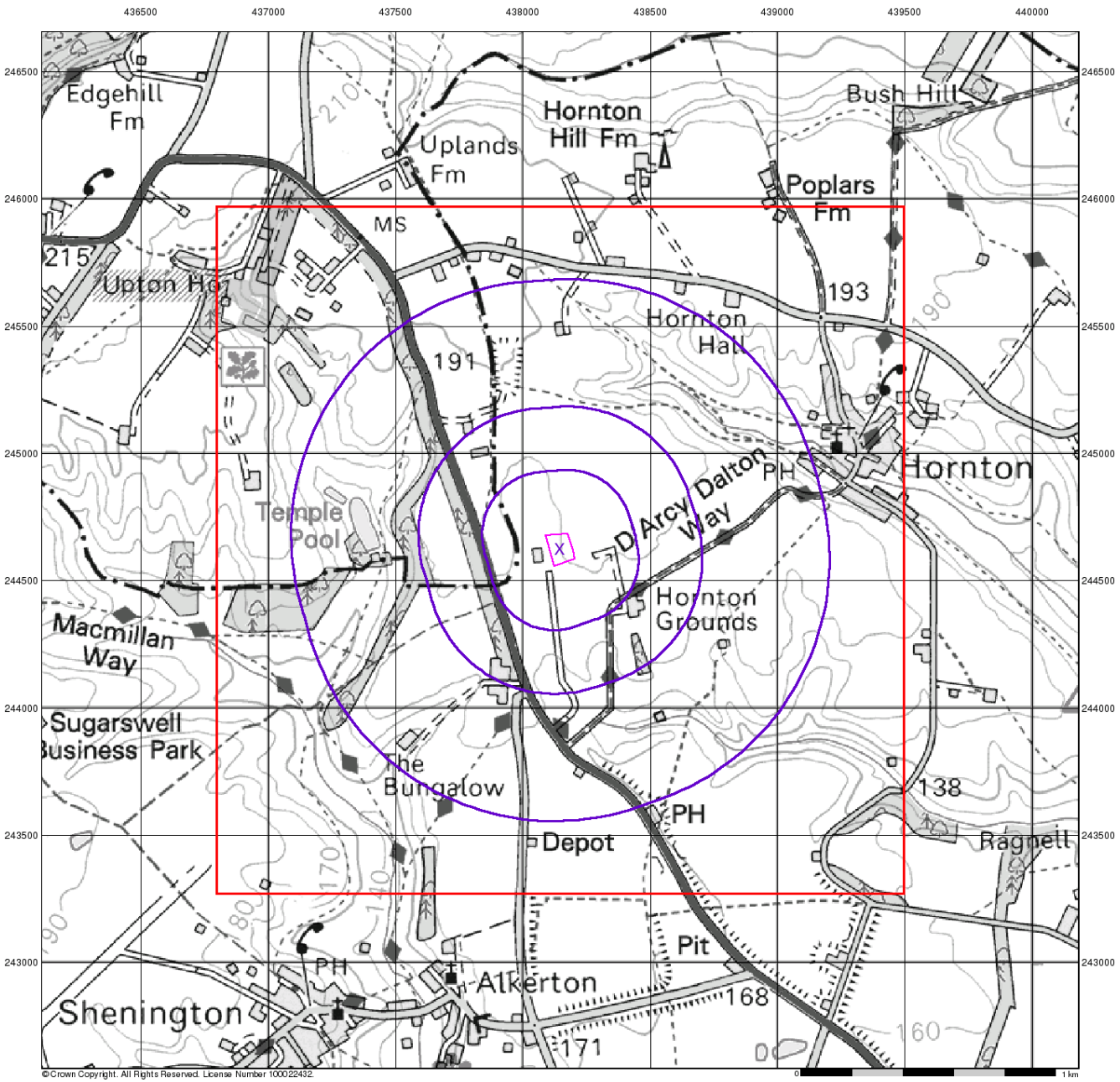

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Source Protection Zones

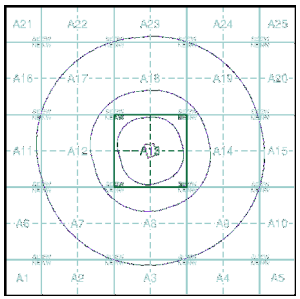
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



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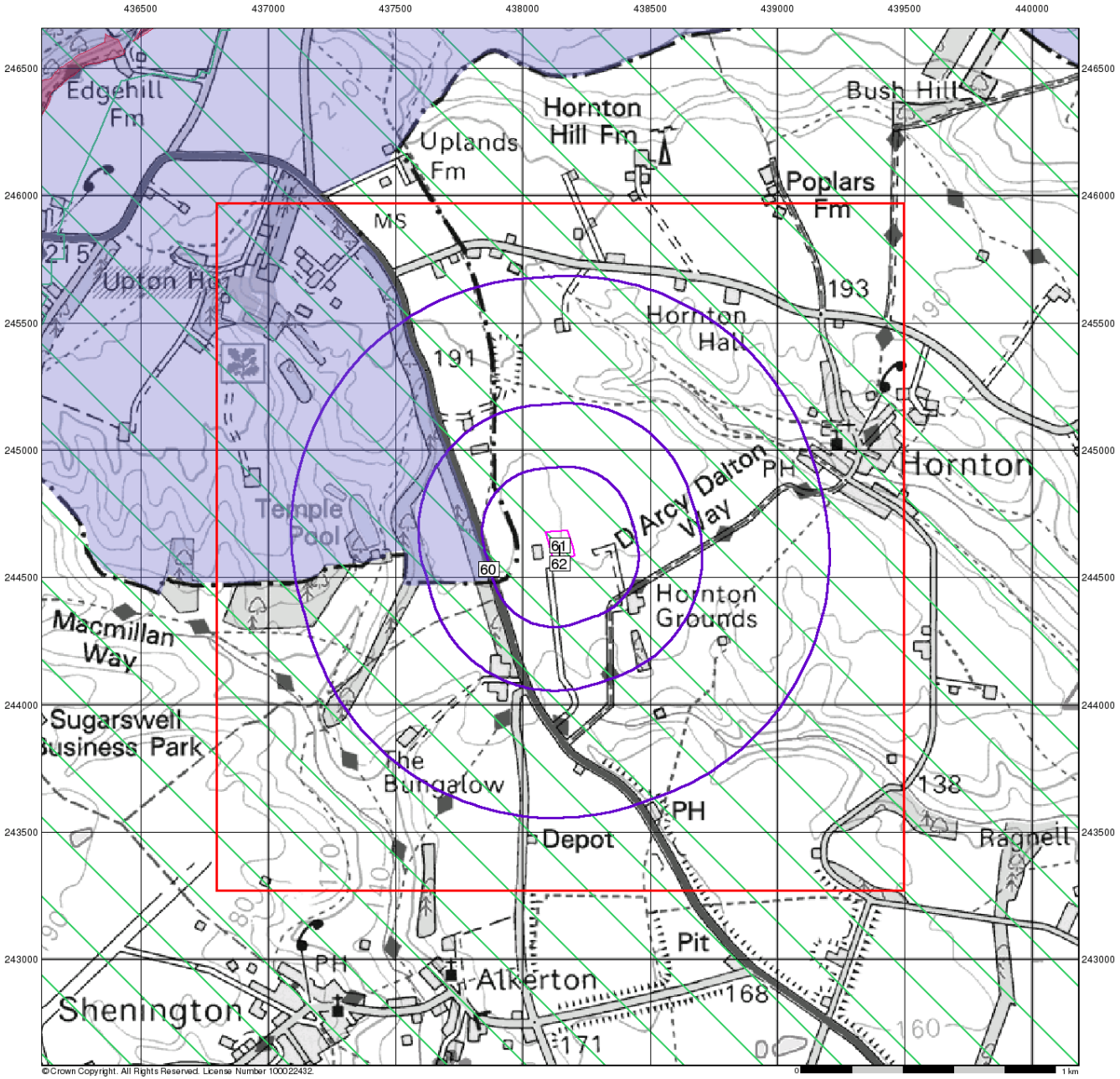

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Sensitive Land Uses

General

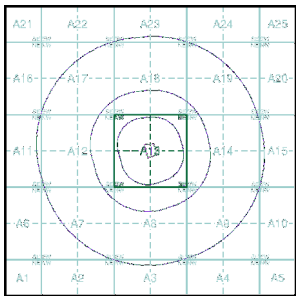
Specified Site | Specified Buffer(s) | Bearing Reference Point

Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



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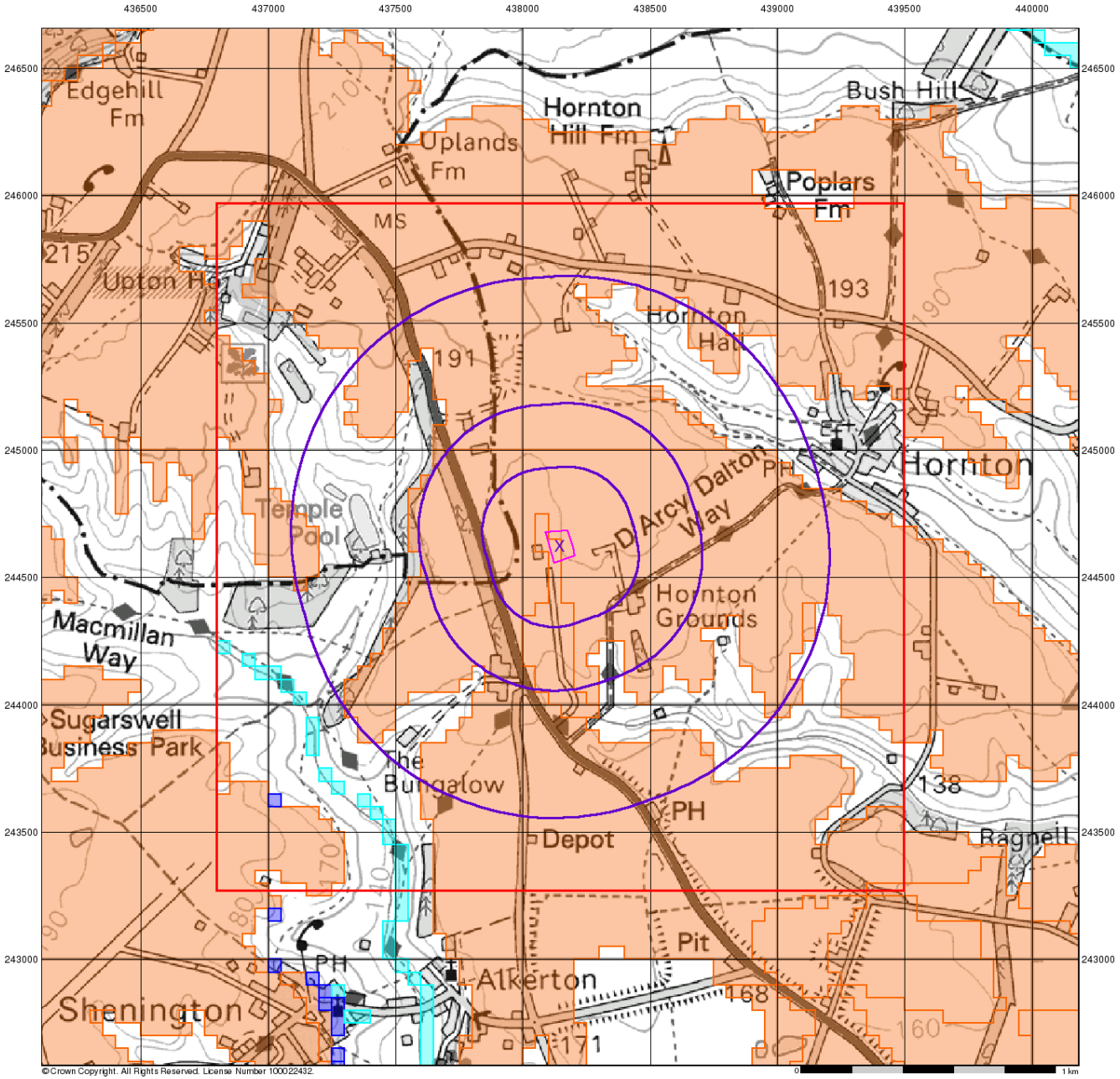

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BGS Flood GFS Data

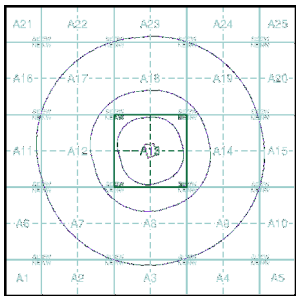
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	1000

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

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Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Envirocheck® Report:

Datasheet

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254692374_1_1

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Site Details:

Building Stone Ltd, Hornton Grounds Quarry
Hornton
Banbury
OX15 6HH

Client Details:

Mr D Jones
OHES Ltd
Unit 3 Forest Court
Oaklands Park
Wokingham
Berkshire
RG41 2FD

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Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v53.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes		Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents					
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls					
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 1				Yes
Pollution Incidents to Controlled Waters					
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 1				1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 1				4 (*18)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 6	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 6	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 7			1	22

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 10				3
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)	pg 10				2
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 10	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 11				3
Potentially Infilled Land (Non-Water)	pg 11			1	4
Potentially Infilled Land (Water)					
Registered Landfill Sites	pg 12				1
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 13	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 13	Yes		Yes	Yes
BGS Recorded Mineral Sites	pg 14	1			7
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities	pg 15				1
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 15	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 15	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards				n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards				n/a	n/a
Radon Potential - Radon Affected Areas	pg 16	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 16	Yes	n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 17		2	4	
Fuel Station Entries					
Points of Interest - Commercial Services					
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 17		3	1	7
Points of Interest - Public Infrastructure	pg 18			1	3
Points of Interest - Recreational and Environmental					
Gas Pipelines					
Underground Electrical Cables					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty	pg 19			1	
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 19	2			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (NW)	0	1	438145 244626
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (E)	0	1	438150 244626
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (N)	315	1	438145 245000
	Nearest Surface Water Feature	A18SE (NE)	603	-	438401 245245
	River Quality Name: Hornton Strm GQA Grade: River Quality B Reach: Hornton - Sor Bk Estimated Distance (km): 3.7 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A14NE (E)	767	2	438943 244795
1	**Water Abstractions** Operator: Upton Farm Licence Number: 28/39/14/0303 Permit Version: 101 Location: Upton Estate, Banbury, Oxon Spring R Authority: Environment Agency, Thames Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton House Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A12NW (W)	820	2	437300 244900
1	**Water Abstractions** Operator: Upton Farm Licence Number: 28/39/14/0303 Permit Version: 101 Location: Upton Estate - C Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton House Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A12NW (W)	820	2	437300 244900
1	**Water Abstractions** Operator: J Rees, N Samuel & The Alliance Assurance Licence Number: 28/39/14/0303 Permit Version: 100 Location: Upton Estate, Banbury, Oxon Spring R Authority: Environment Agency, Thames Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (W)	820	2	437300 244900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Water Abstractions** Operator: J Rees, N Samuel & The Alliance Assurance Licence Number: 28/39/14/0303 Permit Version: 100 Location: Upton Estate, Banbury, Oxon Spring R Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (W)	820	2	437300 244900
	Water Abstractions Operator: Upton Farm Licence Number: 28/39/14/0303 Permit Version: 101 Location: Upton Estate - D Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton House Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A7SW (SW)	1218	2	437300 243660
	Water Abstractions Operator: Upton Farm Licence Number: 28/39/14/0303 Permit Version: 101 Location: Upton Estate - E Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton House Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2NE (SW)	1235	2	437520 243480
	Water Abstractions Operator: Upton Farm Licence Number: 28/39/14/0303 Permit Version: 101 Location: Upton Estate, Banbury, Oxon Spring S Authority: Environment Agency, Thames Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton House Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A2NW (SW)	1263	2	437300 243600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: J Rees, N Samuel & The Alliance Assurance Licence Number: 28/39/14/0303 Permit Version: 100 Location: Upton Estate, Banbury, Oxon Spring S Authority: Environment Agency, Thames Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2NW (SW)	1263	2	437300 243600
	Water Abstractions Operator: J Rees, N Samuel & The Alliance Assurance Licence Number: 28/39/14/0303 Permit Version: 100 Location: Upton Estate, Banbury, Oxon Spring S Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2NW (SW)	1263	2	437300 243600
	Water Abstractions Operator: Upton Farm Licence Number: 28/39/14/0303 Permit Version: 101 Location: Upton Estate - A Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton House Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11SE (W)	1271	2	436820 244610
	Water Abstractions Operator: Upton Farm Licence Number: 28/39/14/0303 Permit Version: 101 Location: Upton Estate - P Authority: Environment Agency, Thames Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton House Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A11SE (W)	1292	2	436800 244600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Upton Farm Licence Number: 28/39/14/0303 Permit Version: 101 Location: Upton Estate, Banbury, Oxon Spring T Authority: Environment Agency, Thames Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton House Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A2NE (SW)	1314	2	437500 243400
	Water Abstractions Operator: J Rees, N Samuel & The Alliance Assurance Licence Number: 28/39/14/0303 Permit Version: 100 Location: Upton Estate, Banbury, Oxon Spring T Authority: Environment Agency, Thames Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2NE (SW)	1314	2	437500 243400
	Water Abstractions Operator: J Rees, N Samuel & The Alliance Assurance Licence Number: 28/39/14/0303 Permit Version: 100 Location: Upton Estate, Banbury, Oxon Spring T Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2NE (SW)	1314	2	437500 243400
	Water Abstractions Operator: Upton Farm Licence Number: 28/39/14/0303 Permit Version: 101 Location: Upton Estate - B Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton House Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11SW (W)	1331	2	436780 244440

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: J Rees, N Samuel & The Alliance Assurance Licence Number: 28/39/14/0303 Permit Version: 100 Location: Upton Estate, Banbury, Oxon, Spring P Authority: Environment Agency, Thames Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11SW (W)	1392	2	436700 244600
	Water Abstractions Operator: J Rees, N Samuel & The Alliance Assurance Licence Number: 28/39/14/0303 Permit Version: 100 Location: Upton Estate, Banbury, Oxon, Spring P Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11SW (W)	1392	2	436700 244600
	Water Abstractions Operator: In Force - No Licence Holder Licence Number: 28/39/14/0216 Permit Version: Not Supplied Location: Upton House, BANBURY, Oxfordshire Authority: Environment Agency, Thames Region Abstraction: Private Water Supplies (Domestic) Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 27 Yearly Rate (m3): 9955 Details: Licence Status: Revoked Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A11SW (W)	1392	2	436700 244595
	Water Abstractions Operator: Upton Farm Licence Number: 28/39/14/0303 Permit Version: 101 Location: Upton Estate, Banbury, Oxon Spring Q Authority: Environment Agency, Thames Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton House Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A11SW (W)	1417	2	436700 244400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: J Rees, N Samuel & The Alliance Assurance Licence Number: 28/39/14/0303 Permit Version: 100 Location: Upton Estate, Banbury, Oxon Spring Q Authority: Environment Agency, Thames Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 85 Yearly Rate (m3): 16000 Details: Upton Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11SW (W)	1417	2	436700 244400
	Water Abstractions Operator: J Rees, N Samuel & The Alliance Assurance Licence Number: 28/39/14/0303 Permit Version: 100 Location: Upton Estate, Banbury, Oxon Spring Q Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Upton Estate, Banbury, Oxon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11SW (W)	1417	2	436700 244400
	Water Abstractions Operator: F Spencer Licence Number: 28/39/14/0164 Permit Version: Not Supplied Location: Poplars Farm, HORNTON Authority: Environment Agency, Thames Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 2 Yearly Rate (m3): 372 Details: Status: Revoked; Lapsed Or Cancelled Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A24NE (NE)	1690	2	439100 246100
	Groundwater Vulnerability Map Combined Classification: Secondary Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Mixed Dilution: <300 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: No Data	A13NW (NW)	0	3	438145 244626
	Groundwater Vulnerability - Soluble Rock Risk None				
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NW (NW)	0	3	438145 244626
	Superficial Aquifer Designations No Data Available				
	Extreme Flooding from Rivers or Sea without Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
2	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1147.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A8NW (SW)	424	4	437834 244246
3	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 901.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A18SE (NE)	603	4	438401 245245
4	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A8SE (S)	664	4	438312 243920
5	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 8.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A8SE (S)	664	4	438312 243920
6	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A8SE (S)	667	4	438321 243920
7	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 502.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A8SE (S)	672	4	438336 243919
8	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 162.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Temple Pool Catchment Name: Thames Primacy: 2	A12SW (W)	692	4	437402 244599
9	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 52.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (W)	745	4	437363 244845

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 26.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (W)	747	4	437359 244833
11	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 43.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Temple Pool Catchment Name: Thames Primacy: 1	A12NW (W)	748	4	437344 244750
12	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 2.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Temple Pool Catchment Name: Thames Primacy: 1	A12NW (W)	748	4	437344 244750
13	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 41.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Temple Pool Catchment Name: Thames Primacy: 1	A12NW (W)	748	4	437344 244750
14	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 4.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (W)	749	4	437369 244883
15	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 17.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Temple Pool Catchment Name: Thames Primacy: 1	A12NW (W)	750	4	437350 244808
16	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 29.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Temple Pool Catchment Name: Thames Primacy: 2	A12NW (W)	754	4	437344 244792
17	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 85.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Temple Pool Catchment Name: Thames Primacy: 1	A12NW (W)	781	4	437316 244782
18	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (W)	860	4	437242 244823

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 557.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (W)	865	4	437236 244822
20	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9SW (SE)	941	4	438789 243847
21	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 40.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9SW (SE)	942	4	438784 243843
22	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 25.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9SE (SE)	970	4	438823 243838
23	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 121.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9SW (SE)	982	4	438814 243816
24	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 55.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9SE (SE)	982	4	438893 243885

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
25	**Historical Landfill Sites** Licence Holder: G Hart Location: Hornton, Oxfordshire Name: Quarry Farm No.2 Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD13556 First Input Date: 1st January 1987 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 3100/0076 BGS Ref: Not Supplied Other Ref: OCC/080, TP0495, W10229, 13.7.229	A18SW (N)	573	2	437941 245232
26	**Historical Landfill Sites** Licence Holder: Oxfordshire County Council Location: Alkerton, Banbury, Oxfordshire Name: Alkerton Phase 2 and 3 Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD13834 First Input Date: 31st December 1978 Last Input Date: 31st December 1995 Specified Waste Type: Deposited Waste included Inert, Industrial, Commercial and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 3100/0099 BGS Ref: Not Supplied Other Ref: TP0293, 13.6.3843	A8SW (S)	652	2	438120 243904
27	**Historical Landfill Sites** Licence Holder: G Hart Location: Hornton, Oxfordshire Name: Quarry Farm No.1 Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD13555 First Input Date: 1st January 1987 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 3100/0123 BGS Ref: Not Supplied Other Ref: OCC/080, TP0494, W10229, 13.7.229	A18NW (N)	731	2	437941 245394
28	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Alkerton Landfill Site - Epr/Bu7090iz Licence Number: 0 Location: Alkerton Landfill Site, Stratford Road, Alkerton, Banbury, OX15 6HZ Licence Holder: Suez Recycling And Recovery Uk Ltd Authority: Environment Agency - South East Region, West Thames Area Site Category: Waste Landfilling; >10 T/D with Capacity >25,000T Excluding Inert Waste Max Input Rate: Not Supplied **Licence Status: Effective** Issued: 15th September 2016 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A3NW (S)	993	2	438106 243564
29	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Alkerton Phase 3 Licence Number: 86151 Location: SITA, Alkerton Phase 3, Alkerton Quarry, Banbury, Oxfordshire, OX15 6NL Licence Holder: Sita U K Ltd Authority: Environment Agency - Thames Region, West Area Site Category: Household, Commercial And Industrial Waste Landfills Max Input Rate: Not Supplied **Licence Status: PPC** Issued: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A3NW (S)	993	2	438106 243564
	Local Authority Landfill Coverage Name: Cherwell District Council - Has supplied landfill data		0	5	438145 244626
	Local Authority Landfill Coverage Name: Oxfordshire County Council - Has supplied landfill data		0	6	438145 244626

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Stratford On Avon District Council - Has supplied landfill data		114	7	437982 244642
	Local Authority Landfill Coverage Name: Warwickshire County Council - Had landfill data but passed it to the relevant environment agency		114	8	437982 244642
30	**Local Authority Recorded Landfill Sites** Location: Site 2, Quarry Farm, Hornton Reference: 25 Authority: Cherwell District Council, Environmental Health Department **Last Reported Status:** **Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A18SW (N)	573	5	437946 245234
31	**Local Authority Recorded Landfill Sites** Location: Site 1, Quarry Farm, Hornton Reference: 25 Authority: Cherwell District Council, Environmental Health Department **Last Reported Status:** **Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A18NW (N)	731	5	437939 245394
32	**Local Authority Recorded Landfill Sites** Location: Alkerton Landfill Site Reference: 107 Authority: Oxfordshire County Council **Last Reported Status:** **Unknown** Types of Waste: Household, Civic Amenity, Industrial, Commercial, Inert And Later On Special Wastes Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A3NW (S)	970	6	438098 243587
33	**Potentially Infilled Land (Non-Water)** Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1982	A18SW (NW)	409	-	437891 245036
34	**Potentially Infilled Land (Non-Water)** Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1978	A8SE (S)	709	-	438268 243862
35	**Potentially Infilled Land (Non-Water)** Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1978	A8SE (S)	723	-	438325 243863
36	**Potentially Infilled Land (Non-Water)** Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1982	A18NW (N)	730	-	437919 245388
37	**Potentially Infilled Land (Non-Water)** Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1982	A18NW (N)	918	-	437920 245581

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Landfill Sites				
38	Licence Holder: Banbury Plant Hire Ltd Licence Reference: OCC/ 80 Site Location: Quarry Farm, Hornton, Banbury, Oxfordshire Licence Easting: 437930 Licence Northing: 245430 Operator Location: The Lido, Middleton Road, Banbury, Oxfordshire Authority: Environment Agency - Thames Region, West Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st July 1987 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Hardcore And Rubble High-Density Asbestos Inert Constr'N Ind. Waste Plaster Soil,Subsoil	A18NW (N)	768	2	437930 245430

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Lias Group	A13NW (NW)	0	1	438145 244626
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: >120 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: >180mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: >100 mg/kg	A13NW (NW)	0	1	438145 244626
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 60 - 120 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: >180mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 80 - 100 mg/kg	A8NE (S)	359	1	438292 244235
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 60 - 120 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: >180mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 80 - 100 mg/kg	A12SE (W)	507	1	437575 244600
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 45 - 60 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 120 - 180 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 60 - 80 mg/kg	A12SE (W)	626	1	437473 244571
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 45 - 60 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 120 - 180 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 60 - 80 mg/kg	A19SE (NE)	775	1	438822 245113
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 45 - 60 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 120 - 180 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 45 - 60 mg/kg	A19SE (E)	968	1	439091 245000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	**BGS Recorded Mineral Sites** Site Name: Hornton Grounds Location: Hornton Grounds, Banbury, Oxfordshire Source: British Geological Survey, National Geoscience Information Service Reference: 10619 Type: Opencast **Status: Ceased** Operator: Wroxton Stones Operator Location: Not Supplied Periodic Type: Jurassic Geology: Marlstone Rock Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	0	1	438125 244650
40	**BGS Recorded Mineral Sites** Site Name: Starveall Farm Location: Edge Hill, Banbury, Warwickshire Source: British Geological Survey, National Geoscience Information Service Reference: 39607 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Marlstone Rock Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A17SE (NW)	508	1	437808 245101
41	**BGS Recorded Mineral Sites** Site Name: Starveall Farm Location: Edge Hill, Banbury, Oxfordshire Source: British Geological Survey, National Geoscience Information Service Reference: 39608 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Marlstone Rock Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A18NW (N)	643	1	437909 245296
42	**BGS Recorded Mineral Sites** Site Name: Dryhill Quarry Location: Hornton, Edge Hill, Banbury, Oxfordshire Source: British Geological Survey, National Geoscience Information Service Reference: 6789 Type: Opencast **Status: Dormant** Operator: Hornton Quarries Ltd. Operator Location: Not Supplied Periodic Type: Jurassic Geology: Marlstone Rock Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A18NW (NW)	683	1	437847 245317
43	**BGS Recorded Mineral Sites** Site Name: Stratford Road Location: Shenington, Banbury, Oxfordshire Source: British Geological Survey, National Geoscience Information Service Reference: 39668 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Marlstone Rock Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A8SE (S)	737	1	438250 243831
44	**BGS Recorded Mineral Sites** Site Name: Starveall Farm Location: Edge Hill, Banbury, Oxfordshire Source: British Geological Survey, National Geoscience Information Service Reference: 39609 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Marlstone Rock Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A18NW (N)	742	1	437936 245404

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
45	**BGS Recorded Mineral Sites** Site Name: Hornton Quarry Location: Edge Hill, Banbury, Oxfordshire Source: British Geological Survey, National Geoscience Information Service Reference: 39605 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Marlstone Rock Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A18NW (N)	925	1	437920 245588
46	**BGS Recorded Mineral Sites** Site Name: Hornton Quarry Location: Edge Hill, Banbury, Warwickshire Source: British Geological Survey, National Geoscience Information Service Reference: 39606 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Marlstone Rock Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	A17NE (NW)	987	1	437738 245601
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Natural Cavities Easting: 439000 Northing: 244000 Distance: 988 Quadrant Reference: A9 Quadrant Reference: NE Bearing Ref: SE Cavity Type: Gulls/Fissures due to Cambering Solid Geology Detail: Lias Group, Lias Group, Marlstone Rock Formation Superficial Geology Detail: No Details	A9NE (SE)	988	9	439000 244000
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	438145 244626
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	438145 244626
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	438145 244626
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	438145 244626
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	438145 244626
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	438145 244626
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Higher probability radon area (more than 30% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	438145 244626

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Radon Potential - Radon Protection Measures Protection Measure: Full radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	438145 244626

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
47	**Contemporary Trade Directory Entries** Name: Peter Bennie Location: Hornton Grounds Quarry, Hornton, Banbury, Oxfordshire, OX15 6HH Classification: Quarries **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	44	-	438078 244558
47	**Contemporary Trade Directory Entries** Name: Bennie Location: Hornton Grounds Quarry, Hornton, Banbury, Oxfordshire, OX15 6HH Classification: Stone Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	44	-	438078 244558
48	**Contemporary Trade Directory Entries** Name: Ridgway Optical Supplies Ltd Location: Unit 6, Alkerton Oaks Business Park, Stratford Road, Upton, Banbury, Oxfordshire, OX15 6EP Classification: Optical Goods - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	465	-	437957 244123
48	**Contemporary Trade Directory Entries** Name: Workshop Heaven Location: Unit 5, Alkerton Oaks Business Park, Stratford Road, Upton, Banbury, OX15 6EP Classification: Wood Products, Except Furniture - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	469	-	437946 244123
48	**Contemporary Trade Directory Entries** Name: Banbury Plastic Fittings Ltd Location: Unit 9-10,Alkerton Oaks Business Park,Stratford Rd, Upton, Banbury, Oxfordshire, OX15 6EP Classification: Plastic Products - Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8NW (S)	469	-	437958 244118
48	**Contemporary Trade Directory Entries** Name: Home Farm Speciality Foods Ltd Location: Unit 3, Alkerton Oaks Business Park, Stratford Road, Upton, Banbury, Oxfordshire, OX15 6EP Classification: Food Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (SW)	475	-	437918 244128
49	**Points of Interest - Manufacturing and Production** Name: Bennie Location: Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to address or location	A13SW (SW)	44	10	438078 244558
49	**Points of Interest - Manufacturing and Production** Name: Bennie Stone Location: Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to address or location	A13SW (SW)	44	10	438078 244558
49	**Points of Interest - Manufacturing and Production** Name: Marshalls Location: Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to address or location	A13SW (SW)	45	10	438077 244557
50	**Points of Interest - Manufacturing and Production** Name: Quarry (Stone) Location: OX15 Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to an adjacent address or location	A14NW (NE)	465	10	438579 244917
51	**Points of Interest - Manufacturing and Production** Name: Business Park Location: OX15 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A8NW (SW)	504	10	437844 244138

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	**Points of Interest - Manufacturing and Production** Name: Quarry (Stone) Location: OX15 Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	519	10	438514 245078
53	**Points of Interest - Manufacturing and Production** Name: Quarry (Disused) Location: OX15 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A18SW (N)	616	10	437931 245274
53	**Points of Interest - Manufacturing and Production** Name: Quarry (Disused) Location: OX15 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A18SW (N)	617	10	437930 245274
53	**Points of Interest - Manufacturing and Production** Name: Stone Quarry Location: OX15 Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to address or location	A18NW (NW)	664	10	437850 245298
54	**Points of Interest - Manufacturing and Production** Name: Workings Location: OX15 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A18NW (NW)	667	10	437845 245299
55	**Points of Interest - Manufacturing and Production** Name: Tank Location: OX15 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	703	10	438185 243857
56	**Points of Interest - Public Infrastructure** Name: Spoil Tip Location: OX15 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A14NW (E)	319	10	438492 244743
57	**Points of Interest - Public Infrastructure** Name: Slurry Pond Location: OX15 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A8NW (S)	536	10	437932 244056
58	**Points of Interest - Public Infrastructure** Name: Spoil Tip Location: OX15 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A18SW (NW)	546	10	437858 245173
59	**Points of Interest - Public Infrastructure** Name: Tip Location: OX15 Category: Infrastructure and Facilities Class Code: Refuse Disposal Facilities Positional Accuracy: Positioned to an adjacent address or location	A18NW (N)	763	10	437926 245424

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
60	**Areas of Outstanding Natural Beauty** Name: Cotswolds Multiple Areas: N Total Area (m2): 2041091141.36 Designation Date: 30th August 1966 Source: Natural England	A13SW (W)	253	11	437867 244532
61	**Nitrate Vulnerable Zones** Name: Cherwell (Ray To Thames) And Woodeaton Brook Nvz Description: Surface Water Source: Environment Agency, Head Office	A13NW (NW)	0	3	438145 244626
62	**Nitrate Vulnerable Zones** Name: Balscote Description: Groundwater Source: Environment Agency, Head Office	A13NW (NW)	0	3	438145 244626

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Stratford-on-Avon District Council - Environmental Services	April 2014	Annual Rolling Update
Environment Agency - Head Office	June 2020	Annually
Cherwell District Council - Environmental Health Department	October 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Midlands Region	July 2020	Quarterly
Environment Agency - Thames Region	July 2020	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Midlands Region	March 2013	Annual Rolling Update
Environment Agency - Thames Region	March 2013	Annual Rolling Update
Integrated Pollution Controls		
Environment Agency - Midlands Region	October 2008	Variable
Environment Agency - Thames Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - Midlands Region	July 2020	Quarterly
Environment Agency - South East Region - West Thames Area	July 2020	Quarterly
Environment Agency - Thames Region	July 2020	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Stratford-on-Avon District Council - Environmental Health Department	August 2014	Variable
Cherwell District Council - Environmental Health Department	October 2014	Variable
Local Authority Pollution Prevention and Controls		
Stratford-on-Avon District Council - Environmental Health Department	August 2014	Annual Rolling Update
Cherwell District Council - Environmental Health Department	October 2014	Not Applicable
Local Authority Pollution Prevention and Control Enforcements		
Stratford-on-Avon District Council - Environmental Health Department	August 2014	Variable
Cherwell District Council - Environmental Health Department	October 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	June 2020	
Pollution Incidents to Controlled Waters		
Environment Agency - Midlands Region	December 1999	Not Applicable
Environment Agency - Thames Region	September 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Midlands Region	July 2015	Annual Rolling Update
Environment Agency - Thames Region	March 2013	Annual Rolling Update
Prosecutions Relating to Controlled Waters		
Environment Agency - Midlands Region	March 2013	Annual Rolling Update
Environment Agency - Thames Region	March 2013	Annual Rolling Update
Registered Radioactive Substances		
Environment Agency - Midlands Region	June 2016	
Environment Agency - Thames Region	June 2016	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - Midlands Region - Central Area	July 2020	Quarterly
Environment Agency - Midlands Region - Lower Severn Area	July 2020	Quarterly
Environment Agency - South East Region - West Thames Area	July 2020	Quarterly
Environment Agency - Thames Region - West Area	July 2020	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Water Abstractions		
Environment Agency - Midlands Region	July 2020	Quarterly
Environment Agency - Thames Region	July 2020	Quarterly
Water Industry Act Referrals		
Environment Agency - Midlands Region	October 2017	Quarterly
Environment Agency - Thames Region	October 2017	Quarterly
Groundwater Vulnerability Map		
Environment Agency - Head Office	June 2018	As notified
Bedrock Aquifer Designations		
Environment Agency - Head Office	January 2018	Annually
Superficial Aquifer Designations		
Environment Agency - Head Office	January 2018	Annually
Source Protection Zones		
Environment Agency - Head Office	October 2019	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	June 2020	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	June 2020	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	June 2020	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	June 2020	Quarterly
Flood Defences		
Environment Agency - Head Office	June 2020	Quarterly
OS Water Network Lines		
Ordnance Survey	June 2020	Quarterly
Surface Water 1 in 30 year Flood Extent		
Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 100 year Flood Extent		
Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 1000 year Flood Extent		
Environment Agency - Head Office	October 2013	Annually
Surface Water Suitability		
Environment Agency - Head Office	October 2013	Annually
BGS Groundwater Flooding Susceptibility		
British Geological Survey - National Geoscience Information Service	May 2013	Annually

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	October 2019	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Midlands Region	October 2008	Not Applicable
Environment Agency - Thames Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Midlands Region - Central Area	July 2020	Quarterly
Environment Agency - Midlands Region - Lower Severn Area	July 2020	Quarterly
Environment Agency - South East Region - West Thames Area	July 2020	Quarterly
Environment Agency - Thames Region - West Area	July 2020	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Midlands Region - Central Area	July 2020	Quarterly
Environment Agency - Midlands Region - Lower Severn Area	July 2020	Quarterly
Environment Agency - South East Region - West Thames Area	July 2020	Quarterly
Environment Agency - Thames Region - West Area	July 2020	Quarterly
Local Authority Landfill Coverage		
Cherwell District Council - Environmental Health Department	May 2000	Not Applicable
Oxfordshire County Council	May 2000	Not Applicable
Stratford-on-Avon District Council	May 2000	Not Applicable
Warwickshire County Council	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Cherwell District Council - Environmental Health Department	May 2000	Not Applicable
Oxfordshire County Council	May 2000	Not Applicable
Stratford-on-Avon District Council	May 2000	Not Applicable
Warwickshire County Council	May 2000	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Environment Agency - Midlands Region - Central Area	March 2003	Not Applicable
Environment Agency - Midlands Region - Lower Severn Area	March 2003	Not Applicable
Environment Agency - Thames Region - West Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Midlands Region - Central Area	March 2003	Not Applicable
Environment Agency - Midlands Region - Lower Severn Area	March 2003	Not Applicable
Environment Agency - Thames Region - West Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Midlands Region - Central Area	March 2003	Not Applicable
Environment Agency - Midlands Region - Lower Severn Area	March 2003	Not Applicable
Environment Agency - Thames Region - West Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Cherwell District Council	February 2016	Variable
Oxfordshire County Council	February 2016	Variable
Stratford-on-Avon District Council	February 2016	Variable
Warwickshire County Council	July 2007	Annual Rolling Update
Planning Hazardous Substance Consents		
Cherwell District Council	February 2016	Variable
Oxfordshire County Council	February 2016	Variable
Stratford-on-Avon District Council	February 2016	Variable
Warwickshire County Council	July 2007	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry		
British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	June 2020	Bi-Annually
CBSCB Compensation District		
Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability		
Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain		
British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	April 2020	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	July 2011	Annually

Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	July 2020	Quarterly
Fuel Station Entries Catalist Ltd - Experian	June 2020	Quarterly
Gas Pipelines National Grid	July 2014	
Points of Interest - Commercial Services PointX	June 2020	Quarterly
Points of Interest - Education and Health PointX	June 2020	Quarterly
Points of Interest - Manufacturing and Production PointX	June 2020	Quarterly
Points of Interest - Public Infrastructure PointX	June 2020	Quarterly
Points of Interest - Recreational and Environmental PointX	June 2020	Quarterly
Underground Electrical Cables National Grid	August 2020	

Data Currency

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural England	April 2020	Bi-Annually
Areas of Adopted Green Belt		
Cherwell District Council	June 2020	As notified
Stratford-on-Avon District Council	June 2020	As notified
Areas of Unadopted Green Belt		
Cherwell District Council	June 2020	As notified
Stratford-on-Avon District Council	June 2020	As notified
Areas of Outstanding Natural Beauty		
Natural England	June 2019	Bi-Annually
Environmentally Sensitive Areas		
Natural England	January 2017	
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Natural England	April 2020	Bi-Annually
Marine Nature Reserves		
Natural England	July 2019	Bi-Annually
National Nature Reserves		
Natural England	July 2019	Bi-Annually
National Parks		
Natural England	April 2017	Bi-Annually
Nitrate Sensitive Areas		
Natural England	April 2016	Not Applicable
Nitrate Vulnerable Zones		
Environment Agency - Head Office	December 2017	Bi-Annually
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	
Ramsar Sites		
Natural England	April 2019	Bi-Annually
Sites of Special Scientific Interest		
Natural England	May 2020	Bi-Annually
Special Areas of Conservation		
Natural England	July 2020	Bi-Annually
Special Protection Areas		
Natural England	April 2019	Bi-Annually

Data Suppliers

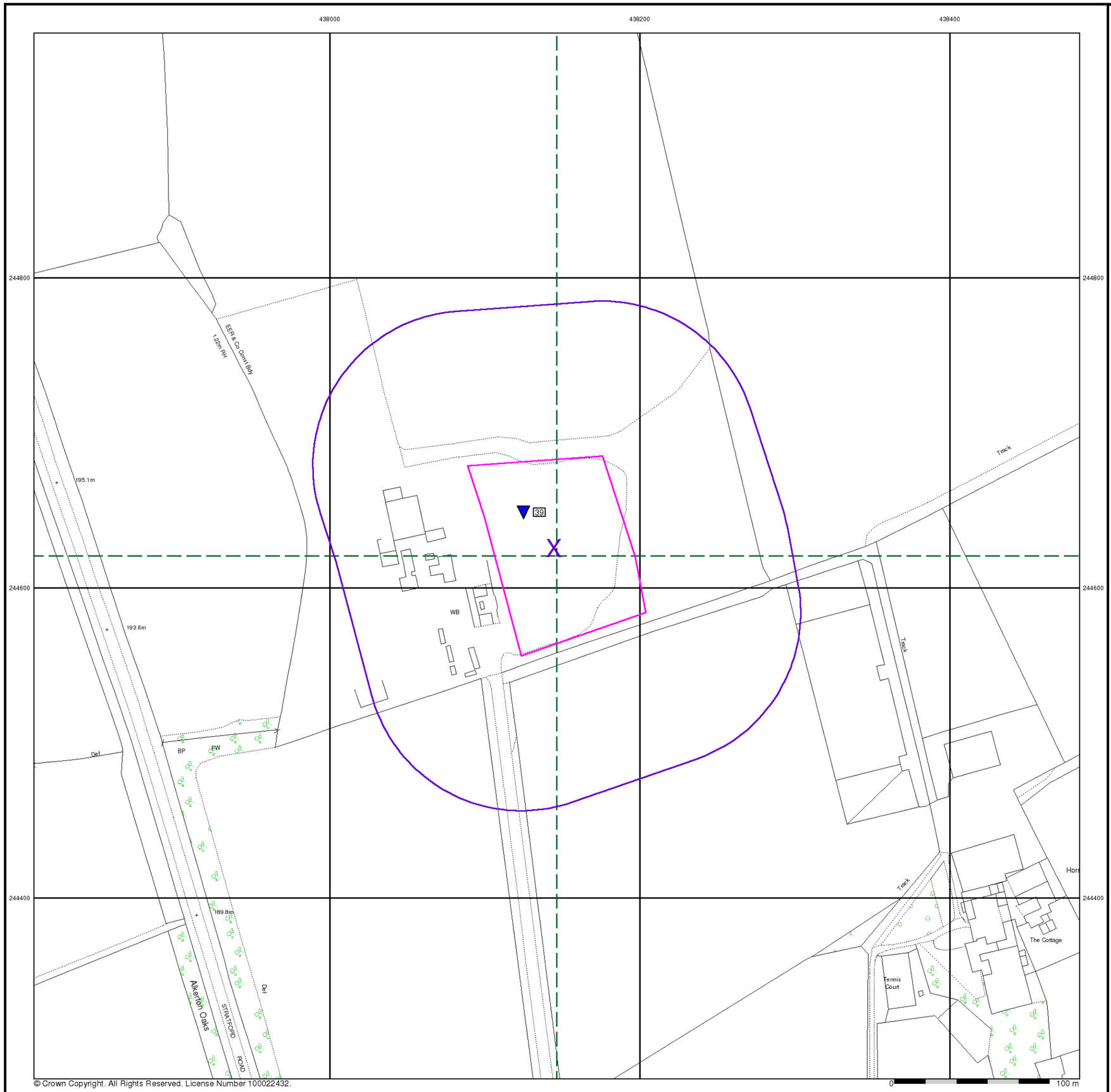
A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Map data
Environment Agency	Environment Agency
Scottish Environment Protection Agency	SEPA Scottish Environment Protection Agency
The Coal Authority	The Coal Authority
British Geological Survey	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	Cyfoeth Naturiol Cymru Natural Resources Wales
Scottish Natural Heritage	SCOTTISH NATURAL HERITAGE
Natural England	NATURAL ENGLAND
Public Health England	Public Health England
Ove Arup	ARUP
Stantec UK Ltd	Stantec

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
4	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
5	**Cherwell District Council - Environmental Health Department** Bodicote House, Bodicote, Banbury, Oxfordshire, OX15 4AA	Telephone: 01295 252535 extn 4511 Fax: 01295 270028 Website: www.cherwell-dc.gov.uk
6	**Oxfordshire County Council** County Hall, New Road, Oxford, Oxfordshire, OX1 1ND	Telephone: 01865 792422 Fax: 01865 810106 Email: environmental.services@oxfordshire.gov.uk Website: www.oxfordshire.gov.uk
7	**Stratford-on-Avon District Council** Elizabeth House, Church Street, Stratford Upon Avon, Warwickshire, CV37 6HX	Telephone: 01789 267575 Fax: 01789 260808 Website: www.stratford.gov.uk
8	**Warwickshire County Council** PO Box 43, Shire Hall, Warwick, Warwickshire, CV34 4SX	Telephone: 01926 410410 Website: www.warwickshire.gov.uk
9	**Stantec UK Ltd** Caversham Bridge House, Waterman Place, Reading, RG1 8DN	Telephone: 0118 950 0761 Email: pba.reading@stantec.com Website: www.stantec.com
10	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
11	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.



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LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

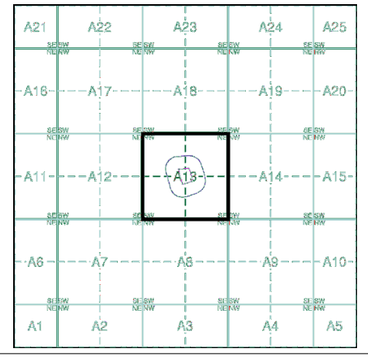
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A13



Order Details

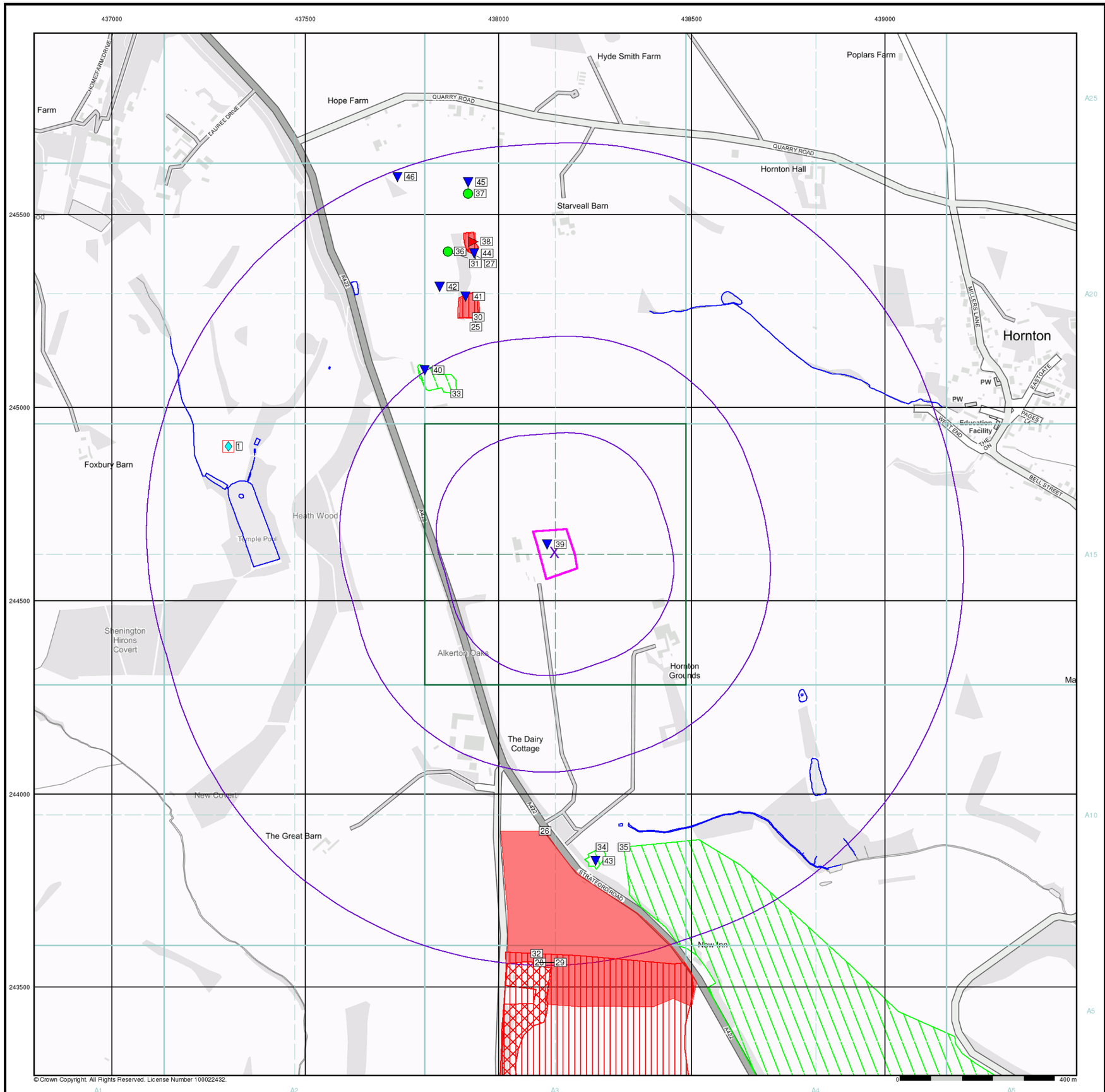
Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Plot Buffer (m):	100

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
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- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
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- Water Abstraction
- Water Industry Act Referral

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- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

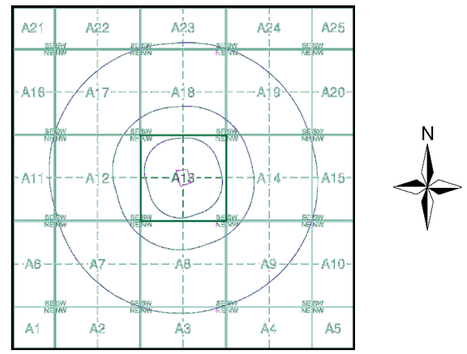
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Slice A



Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	1000

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
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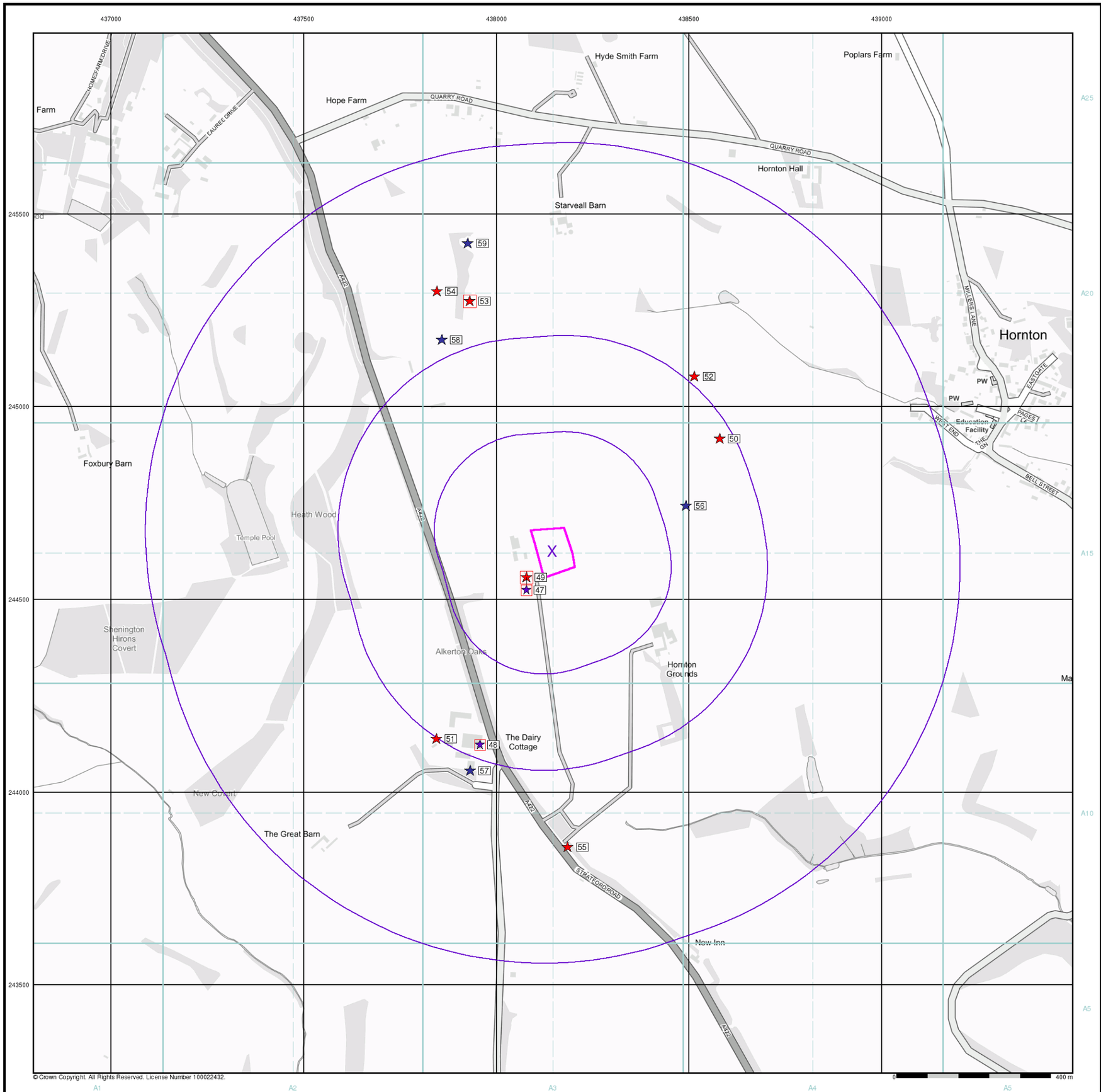

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Industrial Land Use Map

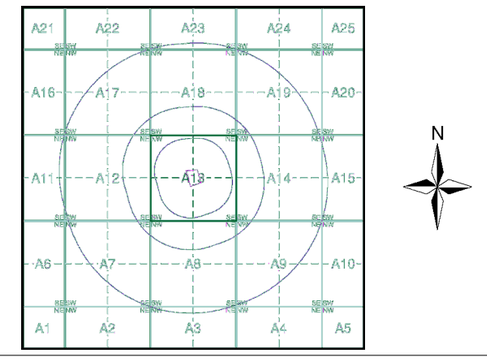
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



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Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	1000

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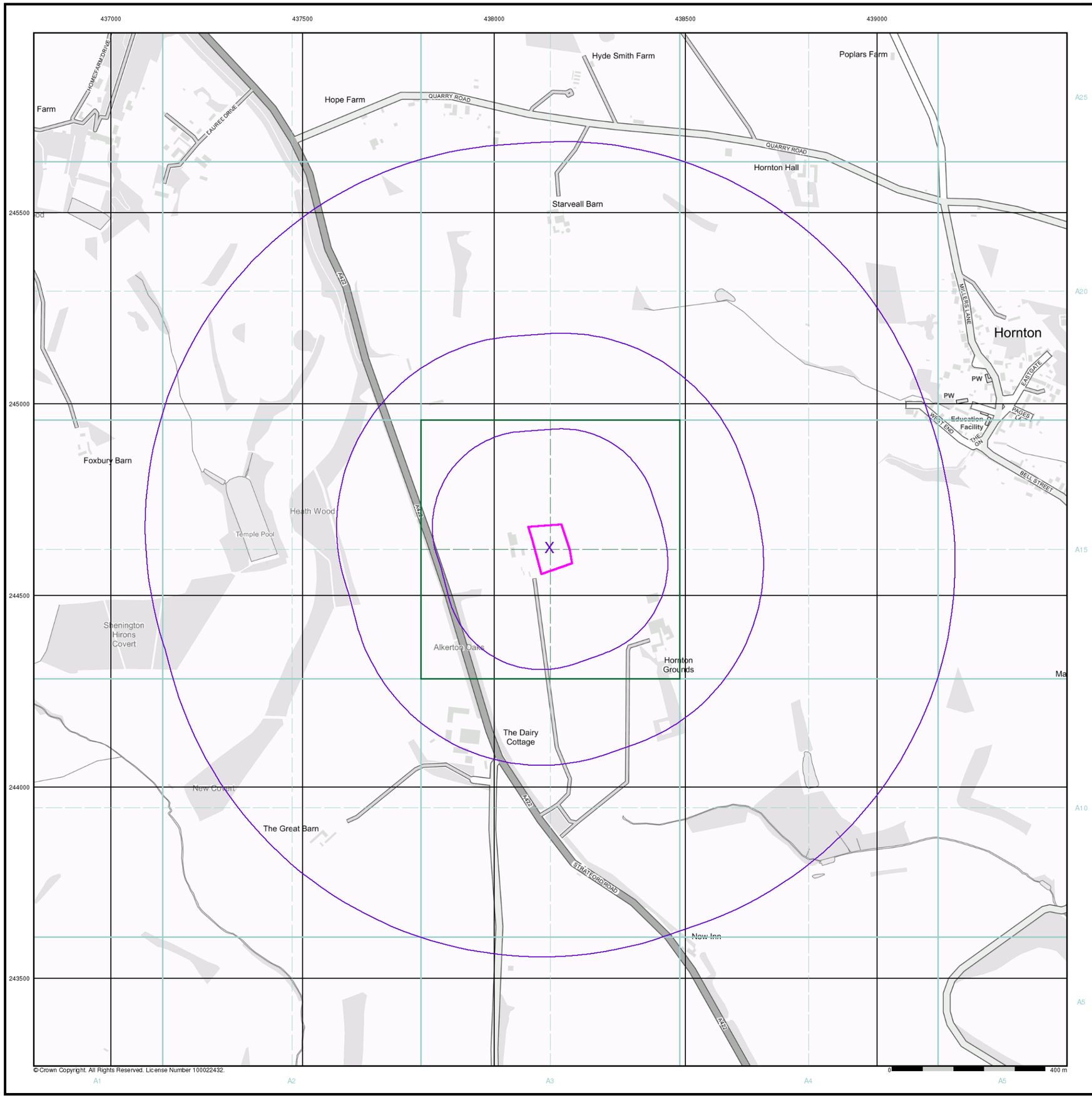

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LANDMARK INFORMATION GROUP®

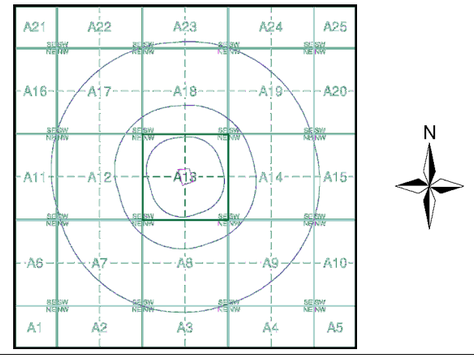
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



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Search Buffer (m):	1000

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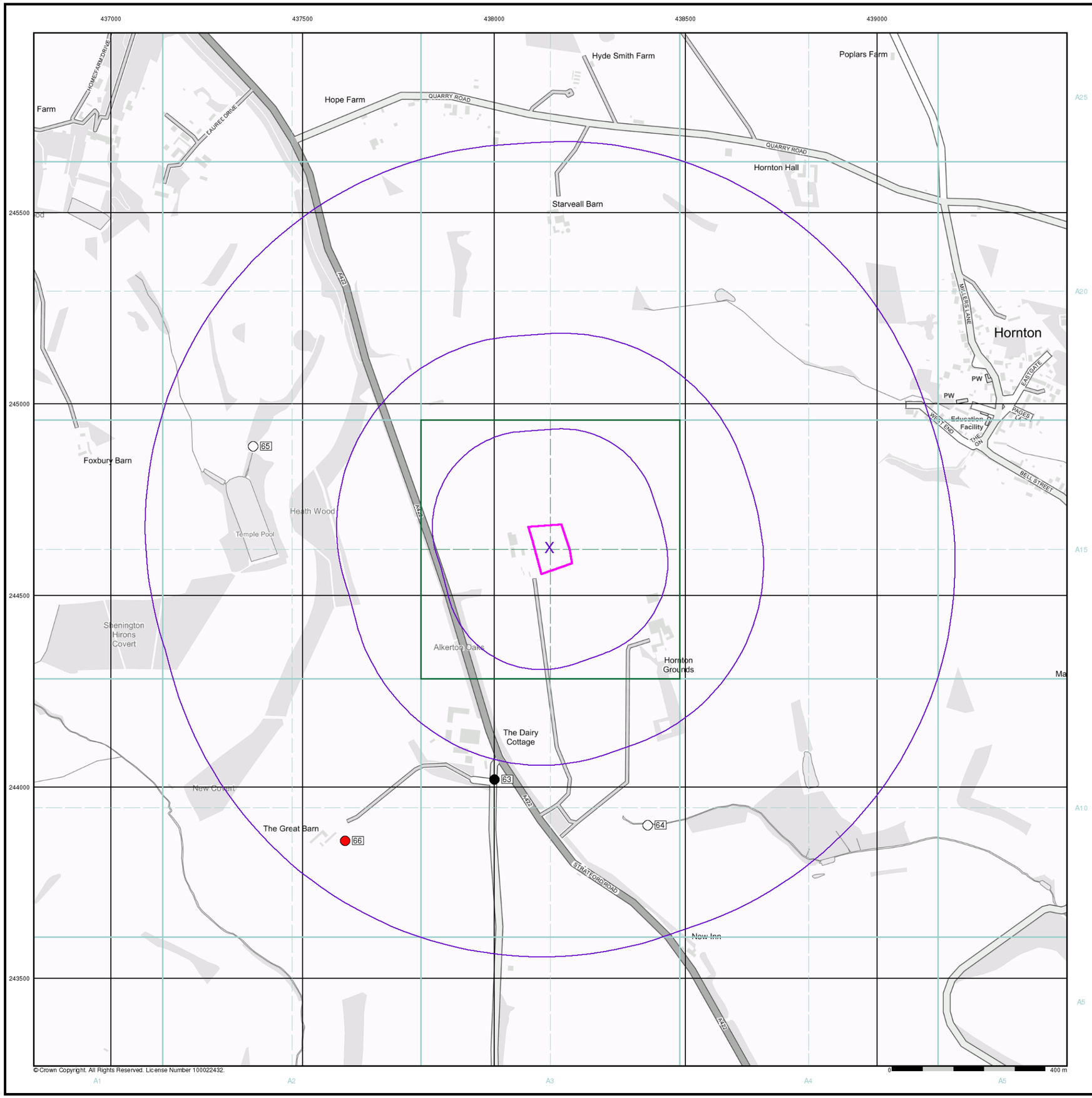

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LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

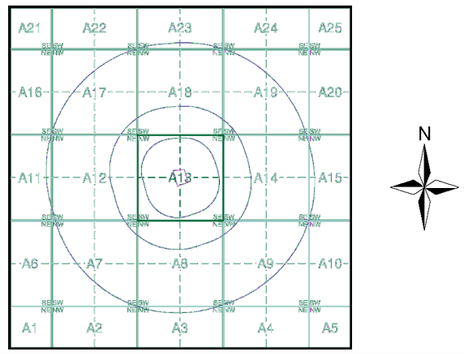
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



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Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	1000

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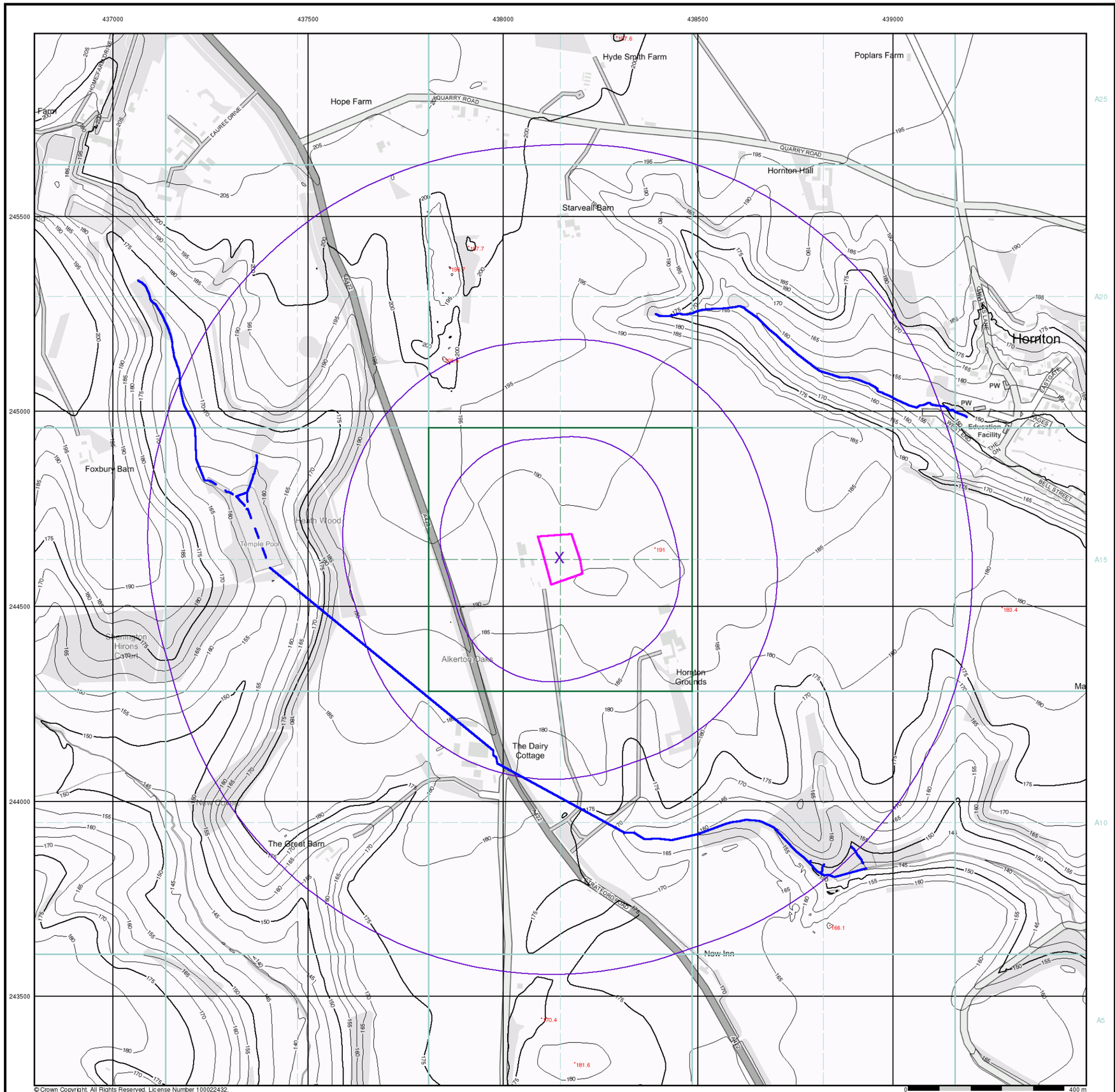


Envirocheck®

LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

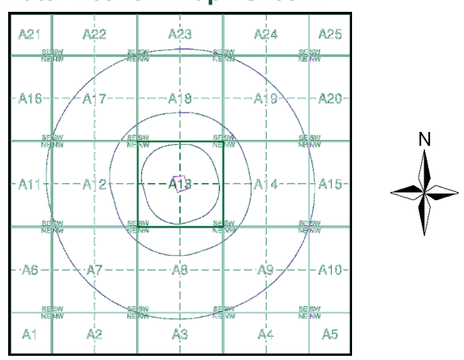
Standard Contour

Master Contour

Spot Height 167.3

- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	1000

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Landmark INFORMATION GROUP

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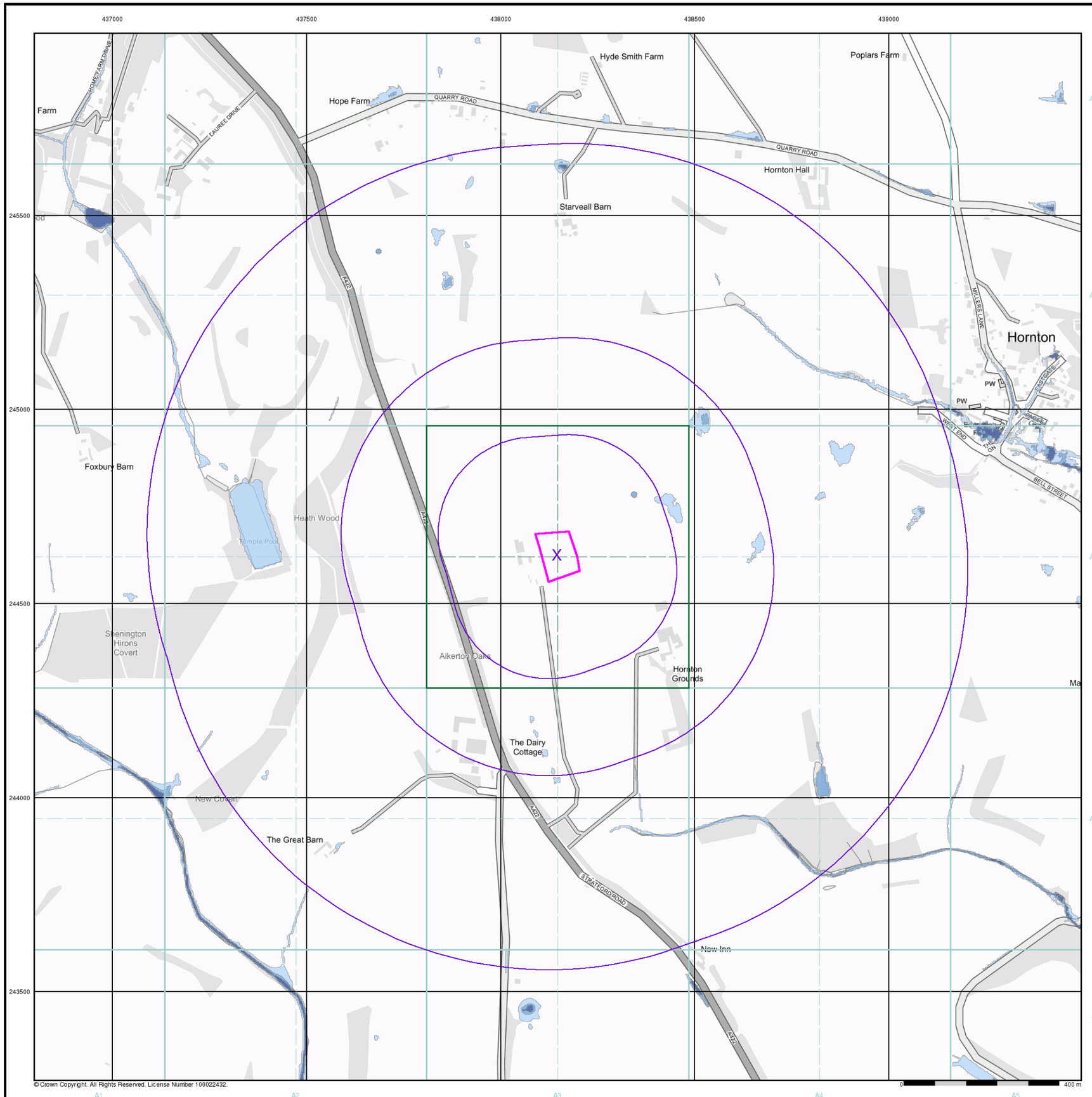


Envirocheck®

LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Risk of Flooding from Surface Water

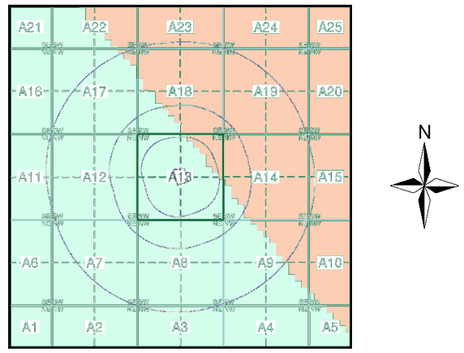
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



Order Details

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Slice:	A
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Search Buffer (m):	1000

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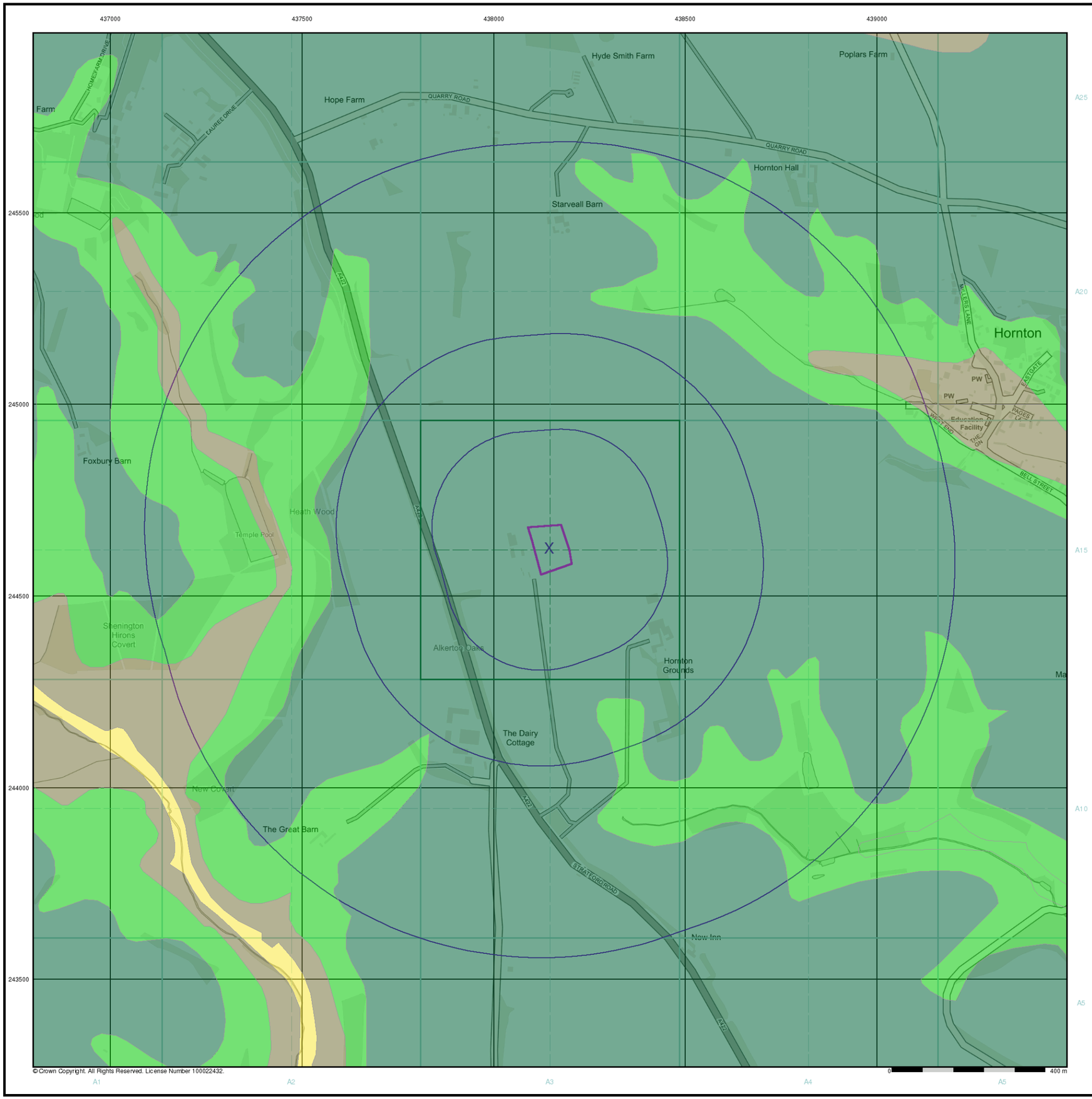


Envirocheck®

LANDMARK INFORMATION GROUP®

General

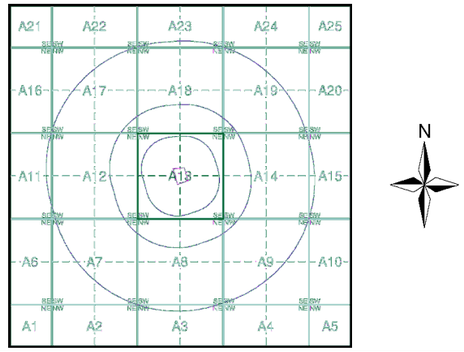
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



Order Details

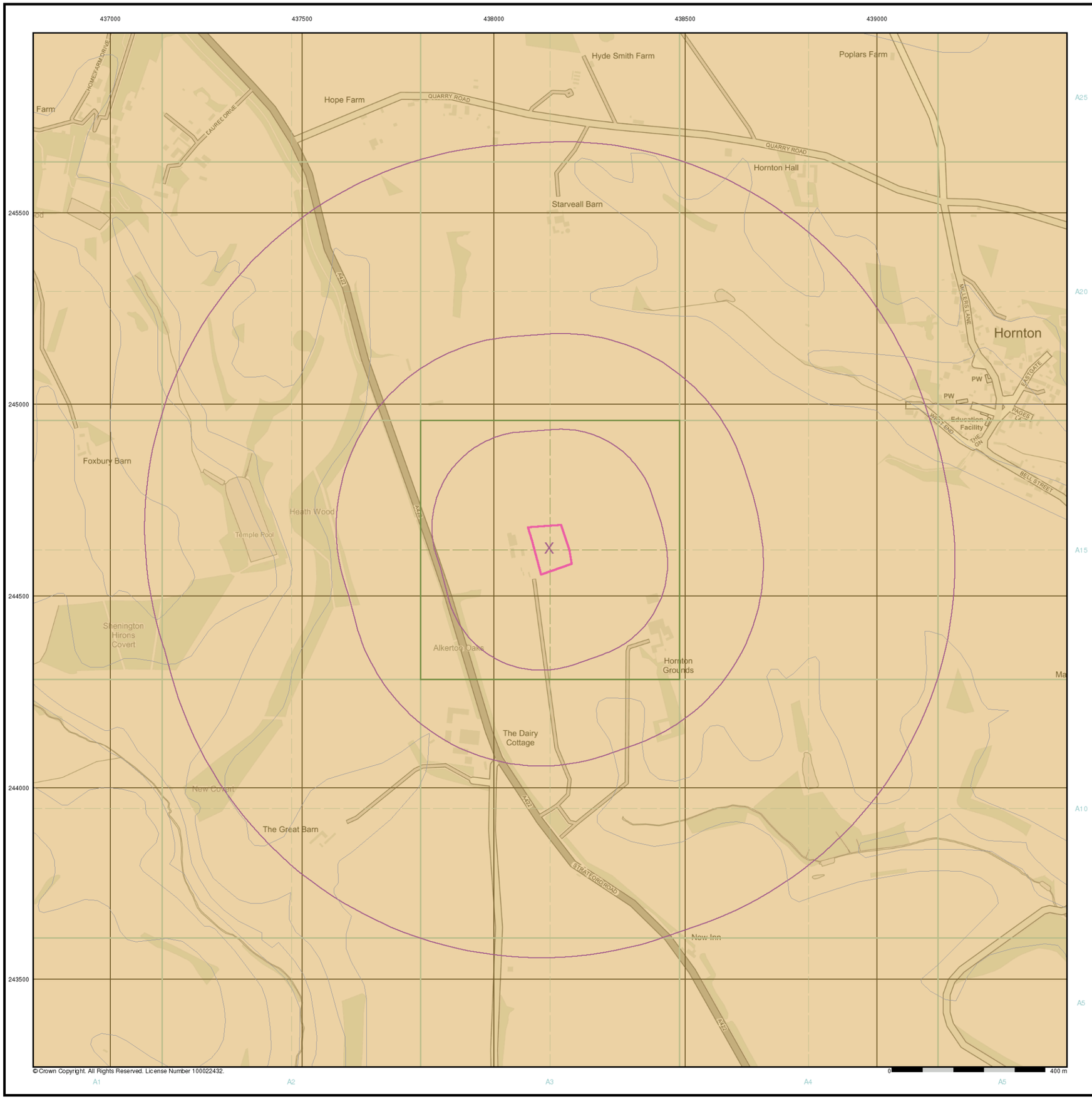
Order Details:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	1000

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Envirocheck®

LANDMARK INFORMATION GROUP®

General

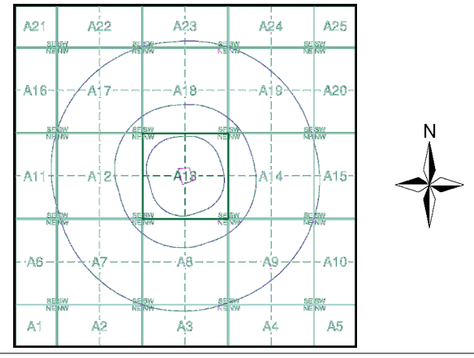
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

- < 1.8
- 1.8 - 2.2
- 2.2 - 3.0
- > 3.0

Estimated Soil Chemistry Cadmium - Slice A



Order Details

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Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
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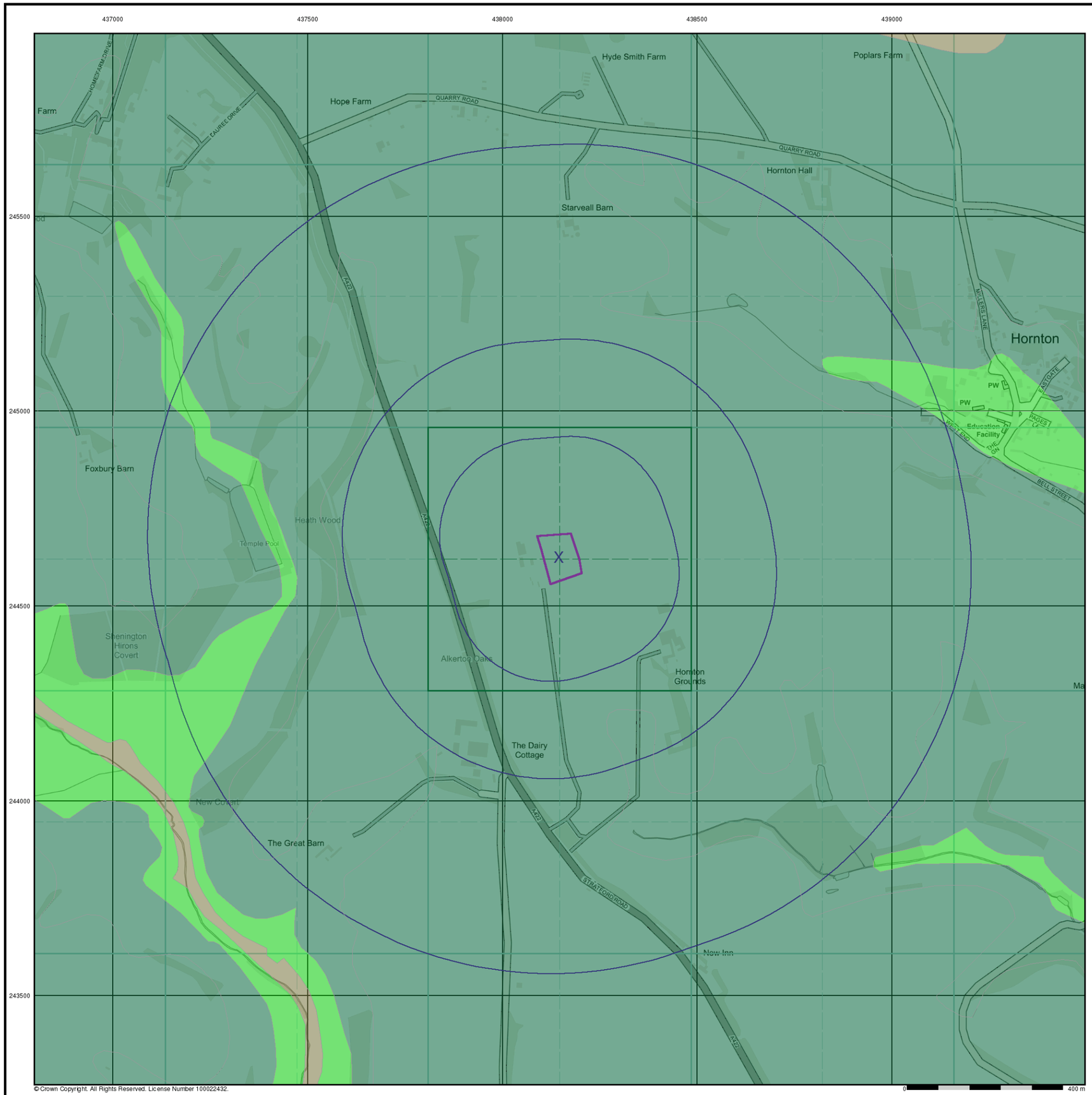


Envirocheck®

LANDMARK INFORMATION GROUP®

General

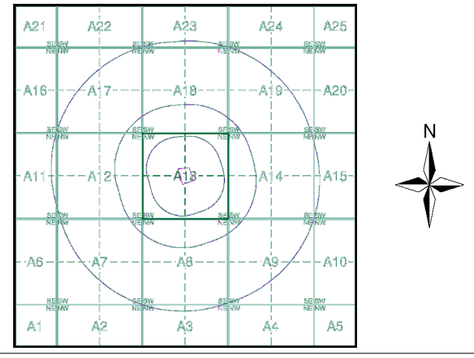
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



Order Details

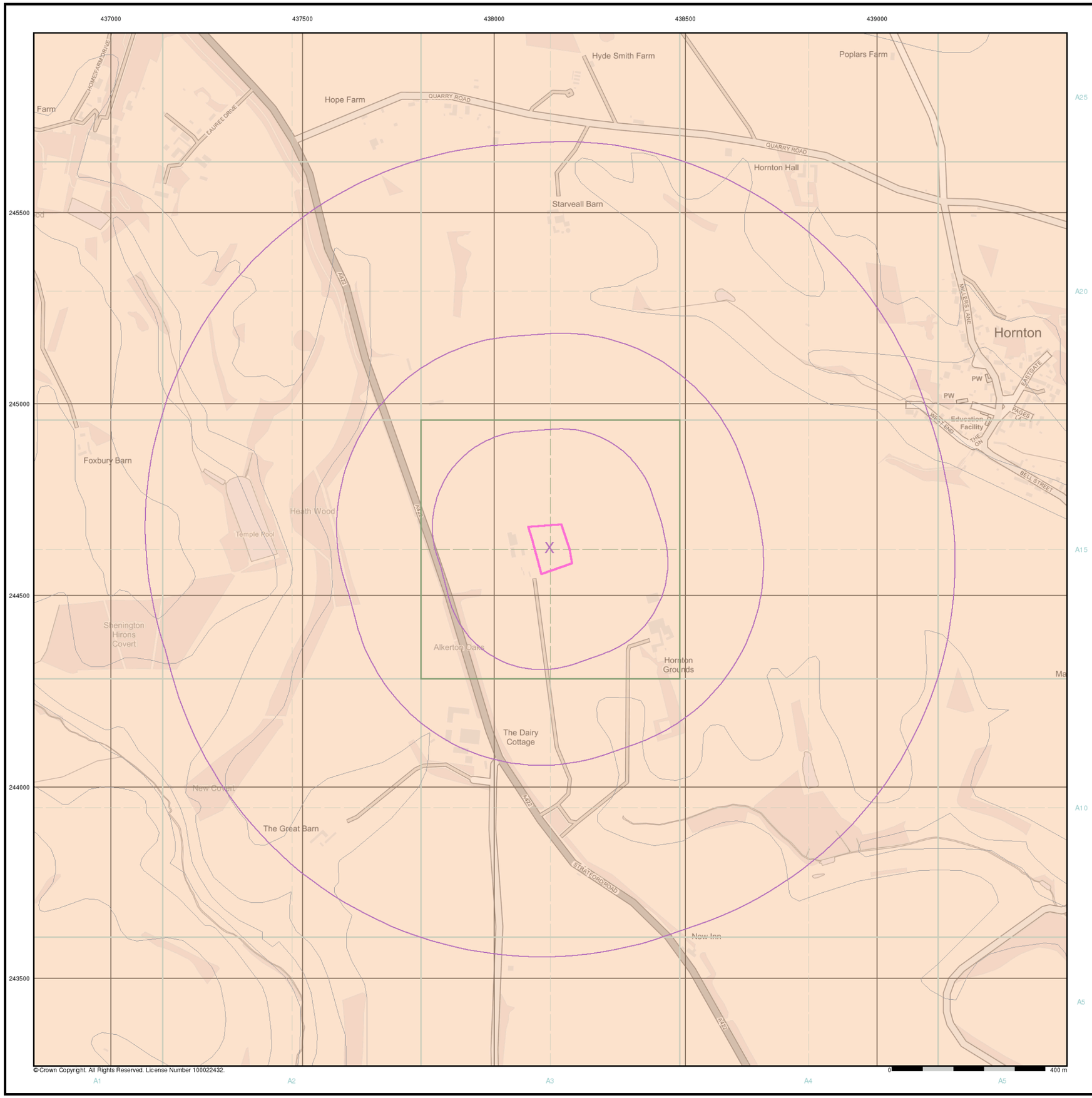
Order Details:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	1000

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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General

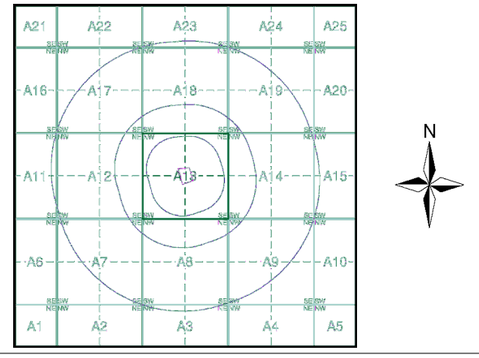
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



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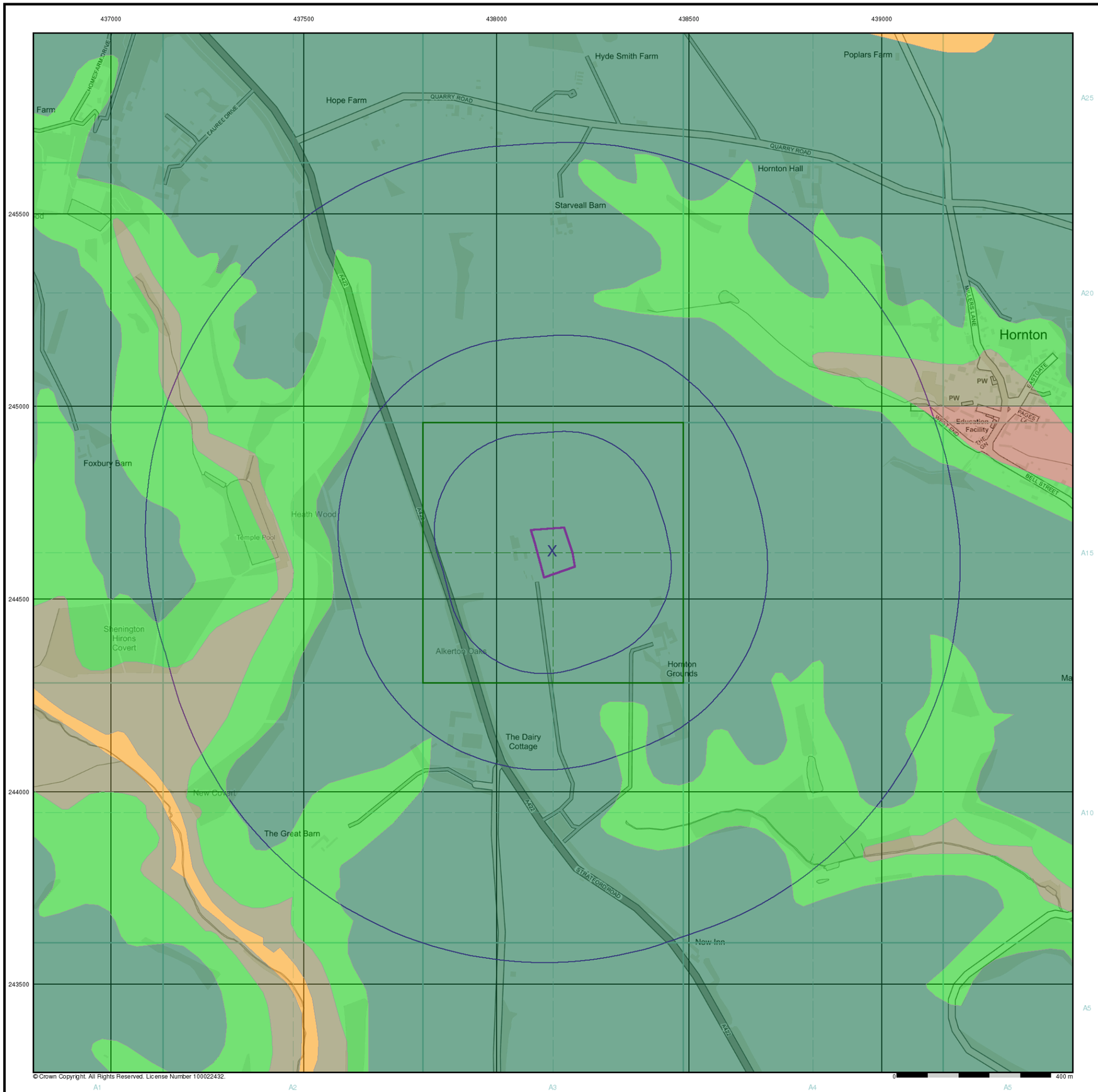

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LANDMARK INFORMATION GROUP®

General

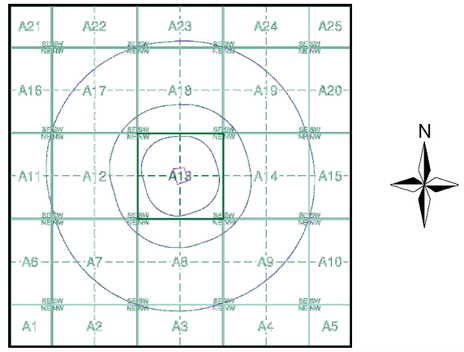
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



Order Details

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Search Buffer (m):	1000

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APPENDIX 5

HISTORICAL MAPS AND INFORMATION

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Mud
Sand
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

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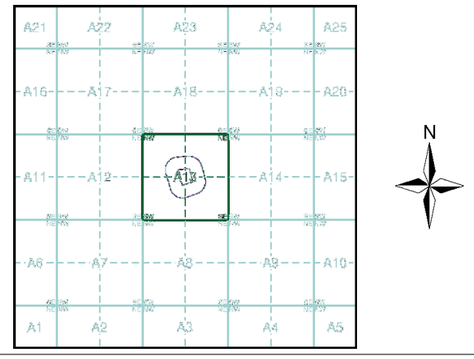
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Oxfordshire	1:10,560	1885 - 1887	2
Warwickshire	1:10,560	1886	3
Oxfordshire	1:10,560	1900	4
Oxfordshire	1:10,560	1923	5
Oxfordshire	1:10,560	1928	6
Historical Aerial Photography	1:10,560	1949	7
Ordnance Survey Plan	1:10,000	1955	8
Ordnance Survey Plan	1:10,000	1965	9
Ordnance Survey Plan	1:10,000	1971	10
Ordnance Survey Plan	1:10,000	1978	11
Ordnance Survey Plan	1:10,000	1982	12
10K Raster Mapping	1:10,000	1999	13
10K Raster Mapping	1:10,000	2006	14
VectorMap Local	1:10,000	2020	15

Historical Map - Slice A



Order Details

Order Number: 254692374_1_1
Customer Ref: 6114
National Grid Reference: 438140, 244630
Slice: A
Site Area (Ha): 1.
Search Buffer (m): 1000

Site Details

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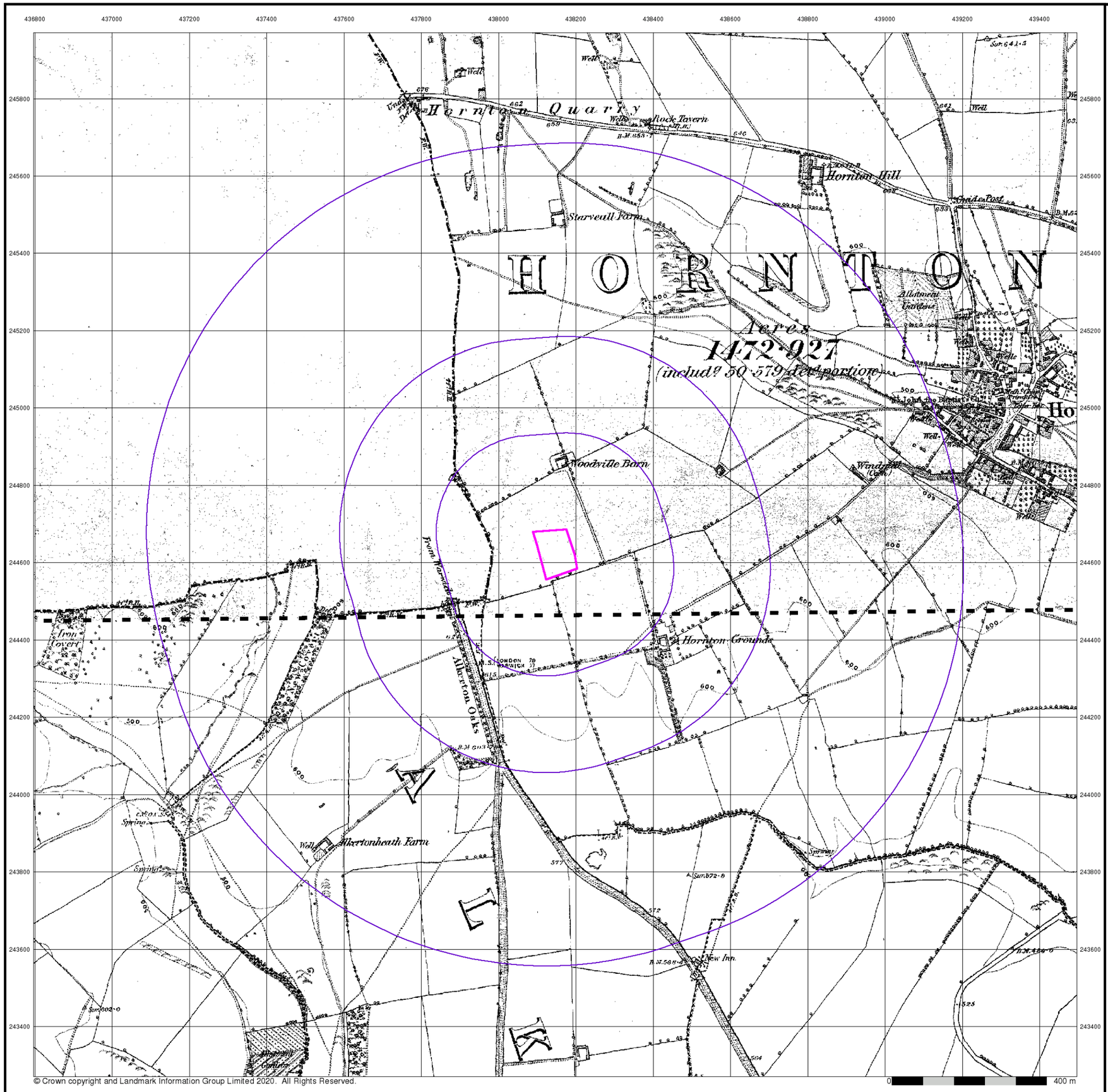

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Oxfordshire

Published 1885 - 1887

Source map scale - 1:10,560

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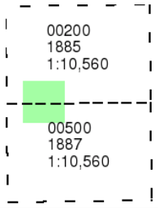
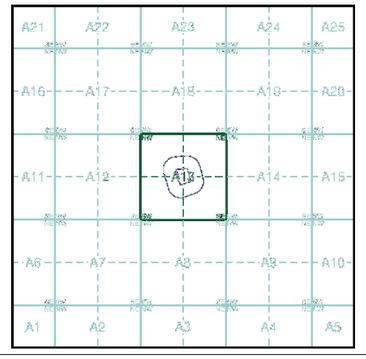
Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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National Grid Reference:	438140, 244630
Slice:	A
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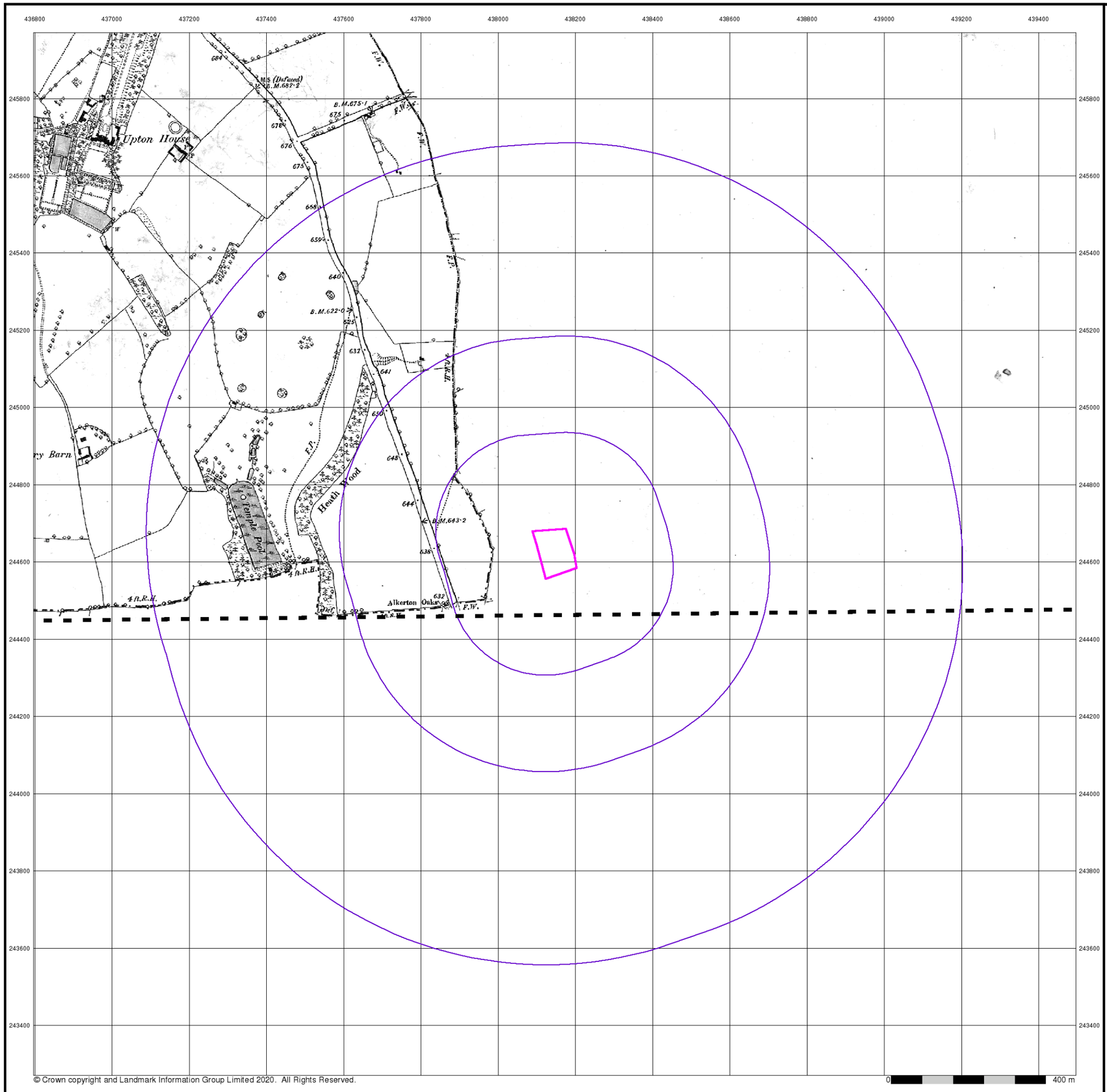

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Warwickshire

Published 1886

Source map scale - 1:10,560

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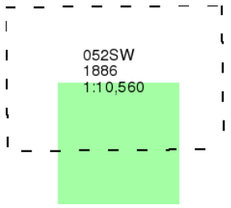
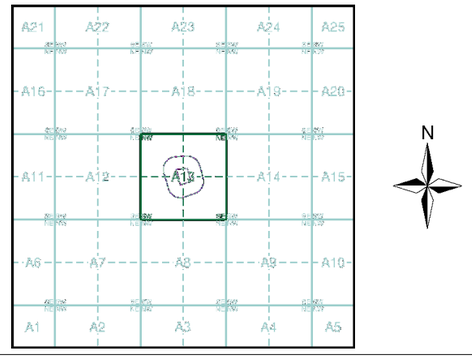
Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
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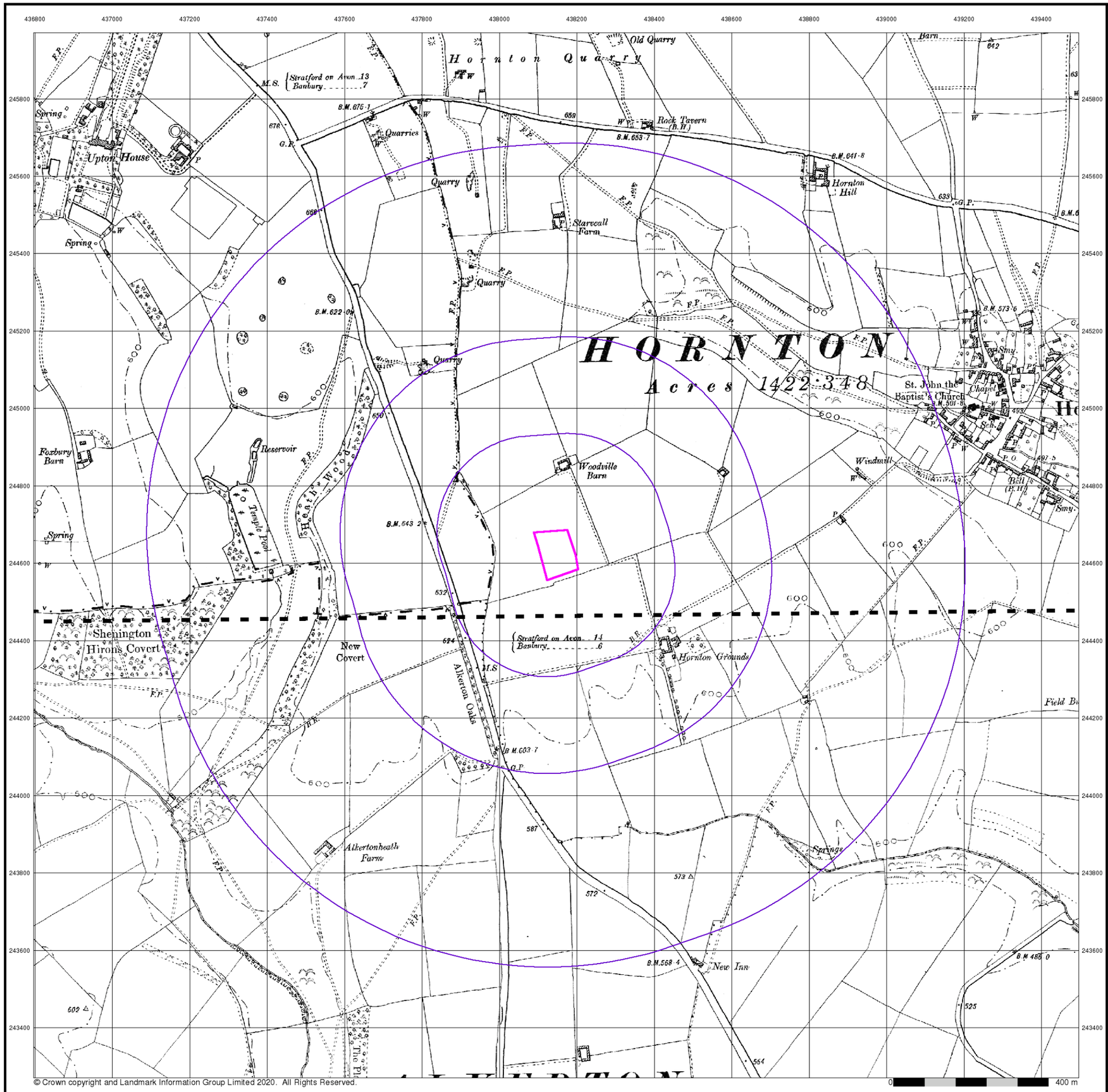

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Oxfordshire

Published 1900

Source map scale - 1:10,560

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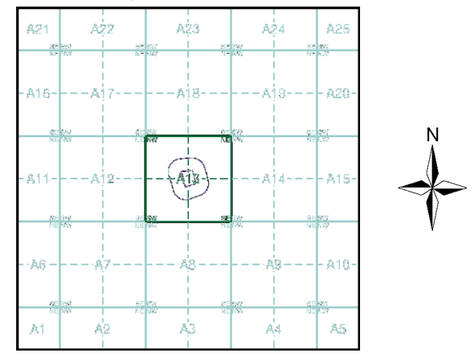
Map Name(s) and Date(s)

002SW
1900
1:10,560

005NW
1900
1:10,560

Historical Map - Slice A



Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	1000

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

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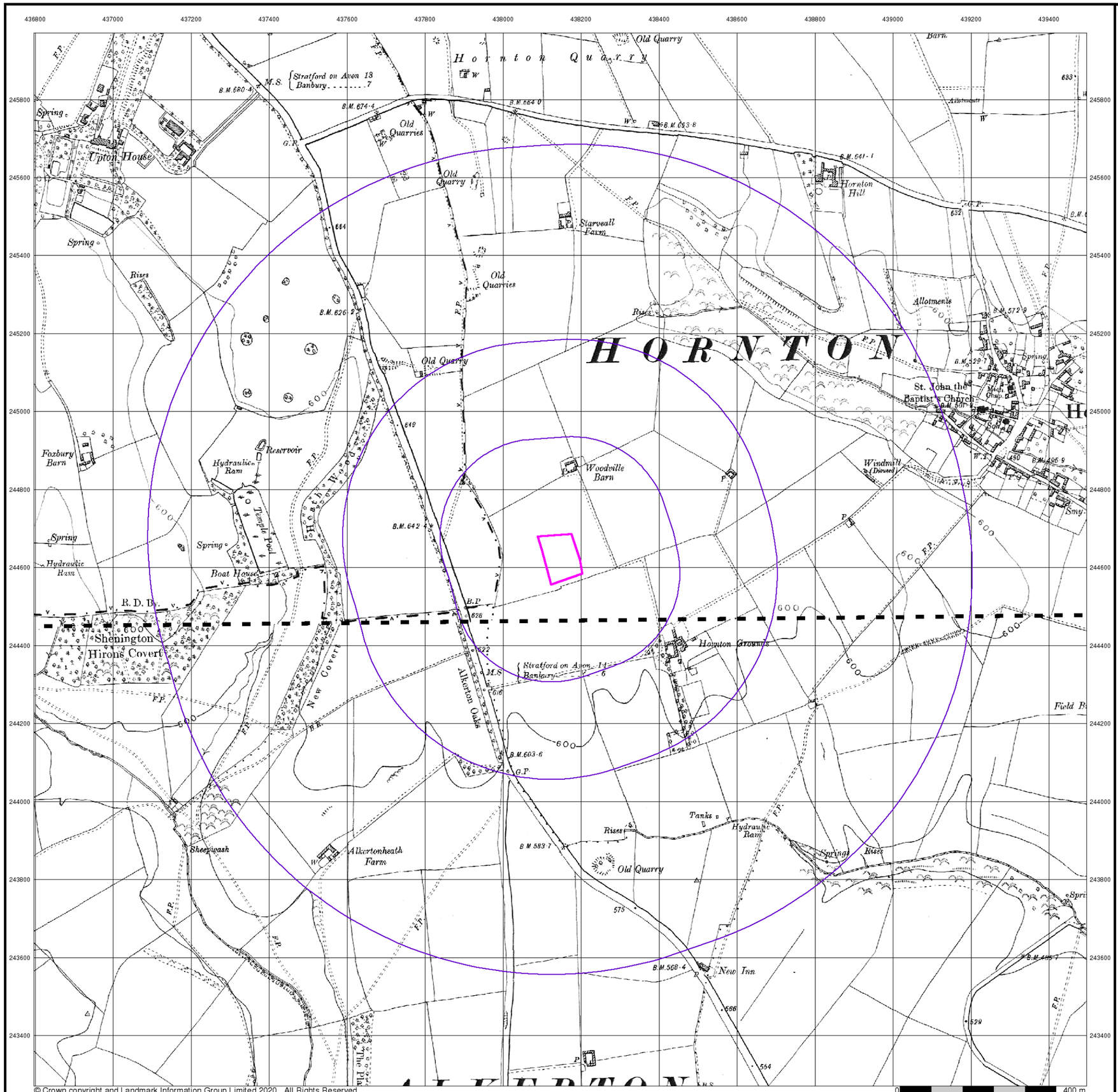

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Oxfordshire

Published 1923

Source map scale - 1:10,560

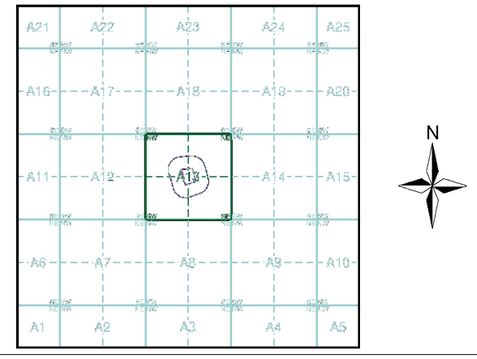
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

002SW
1923
1:10,560

005NW
1923
1:10,560

Historical Map - Slice A



Order Details

Order Number:	254692374_1_1
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Slice:	A
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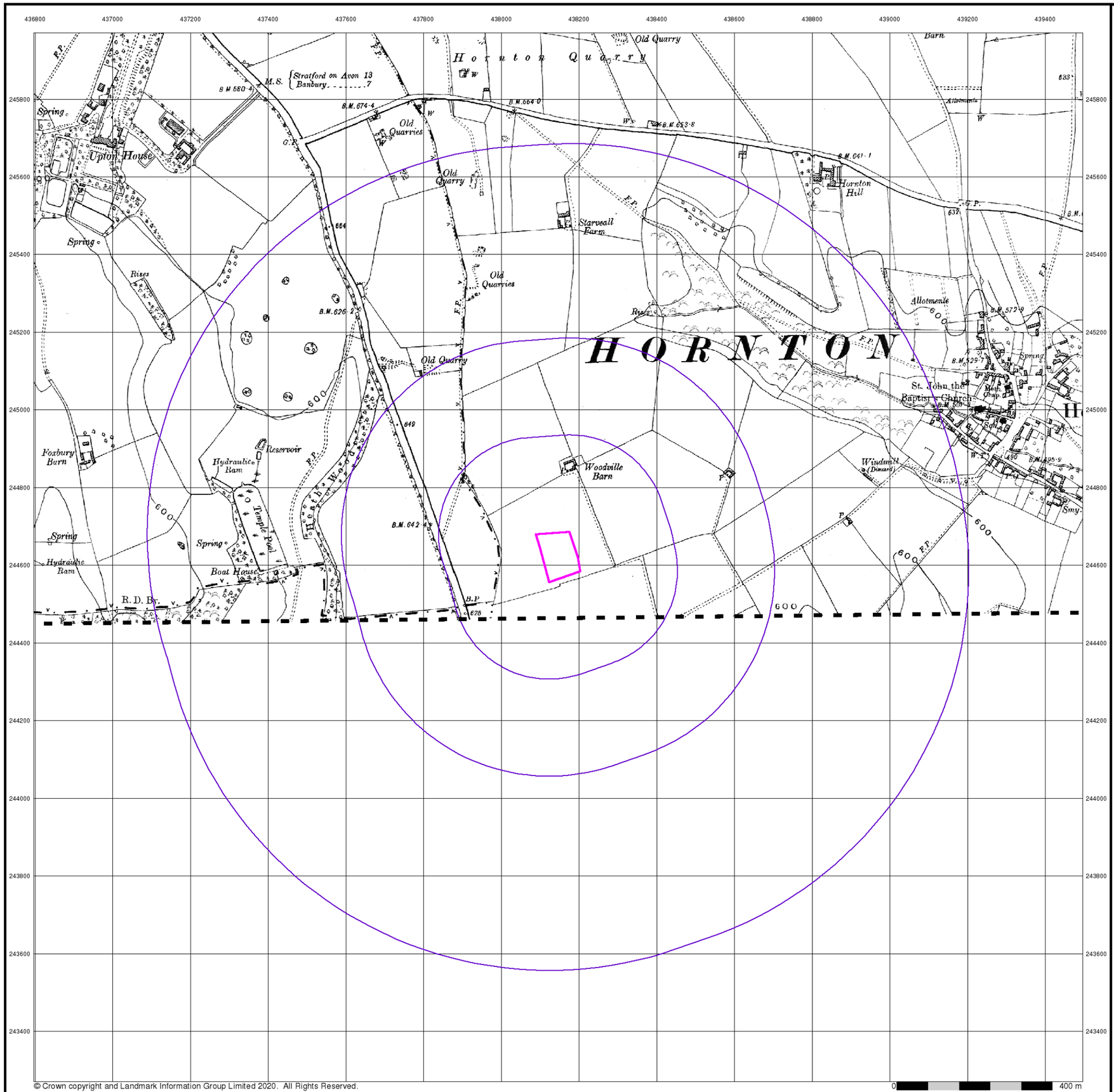

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Oxfordshire

Published 1928

Source map scale - 1:10,560

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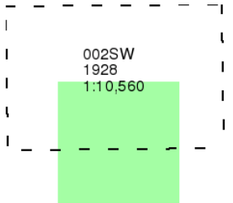
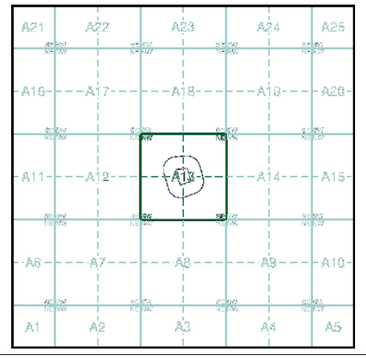
Map Name(s) and Date(s)



Historical Map - Slice A



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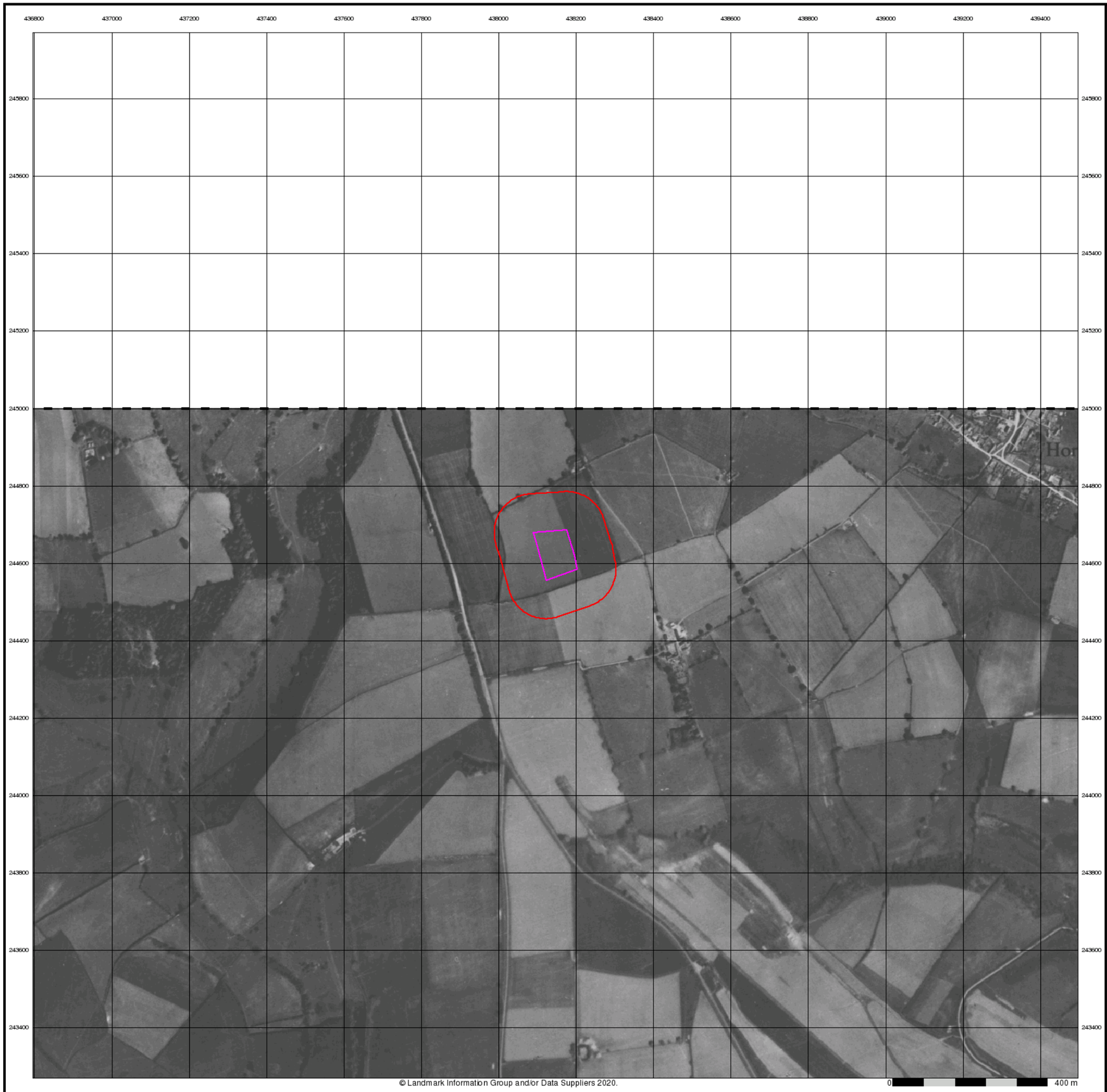

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LANDMARK INFORMATION GROUP®

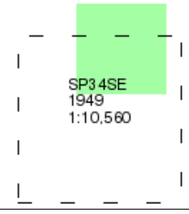
Historical Aerial Photography

Published 1949

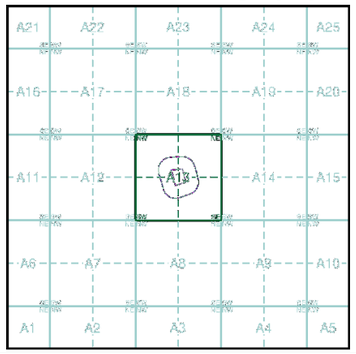
Source map scale - 1:10,560

The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



Order Details

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Slice:	A
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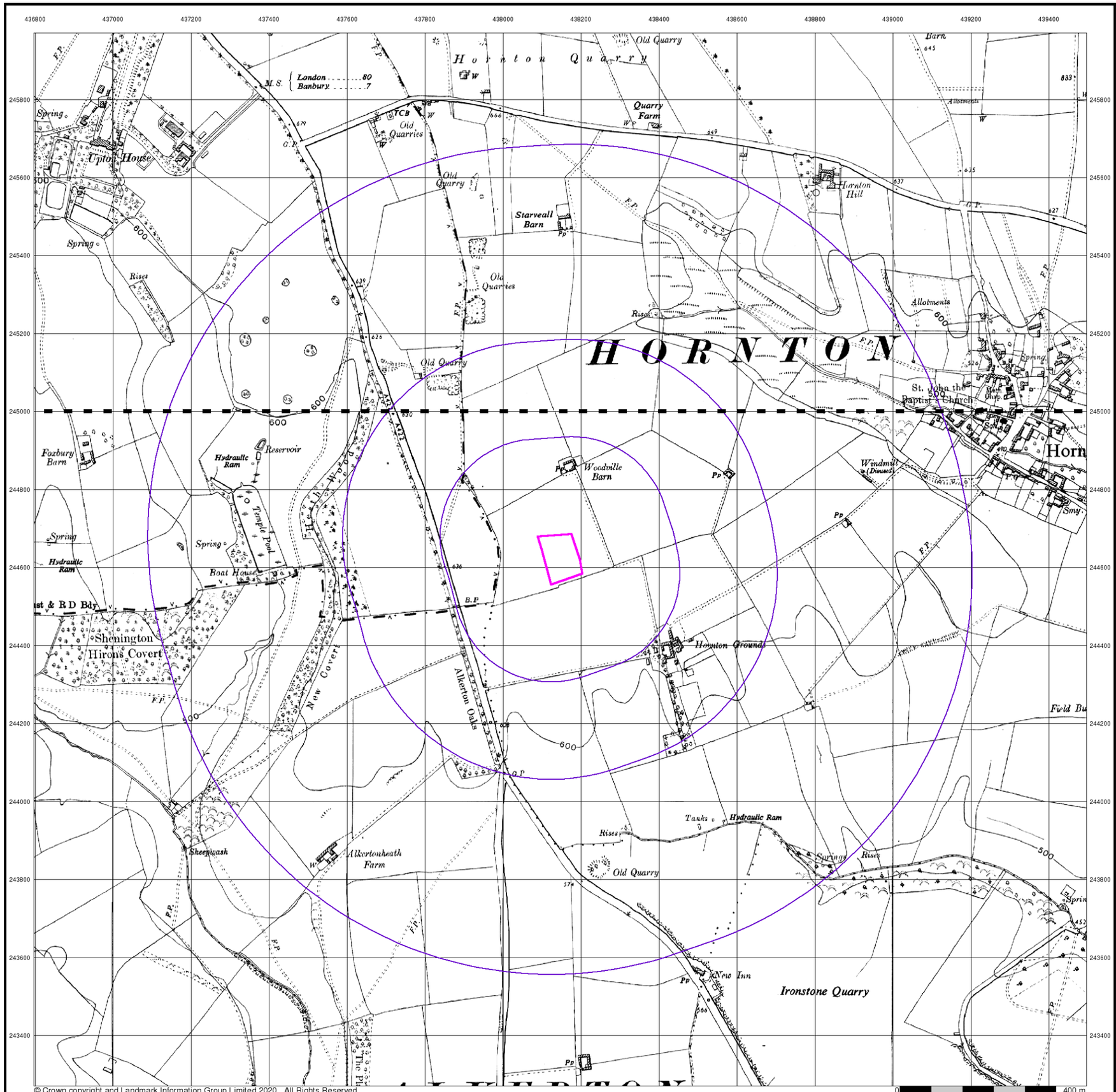

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Ordnance Survey Plan

Published 1955

Source map scale - 1:10,000

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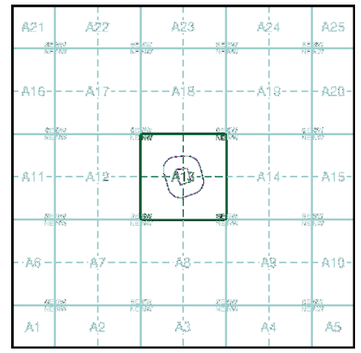
Map Name(s) and Date(s)

SP34NE
1955
1:10,560

SP34SE
1955
1:10,560

Historical Map - Slice A



Order Details

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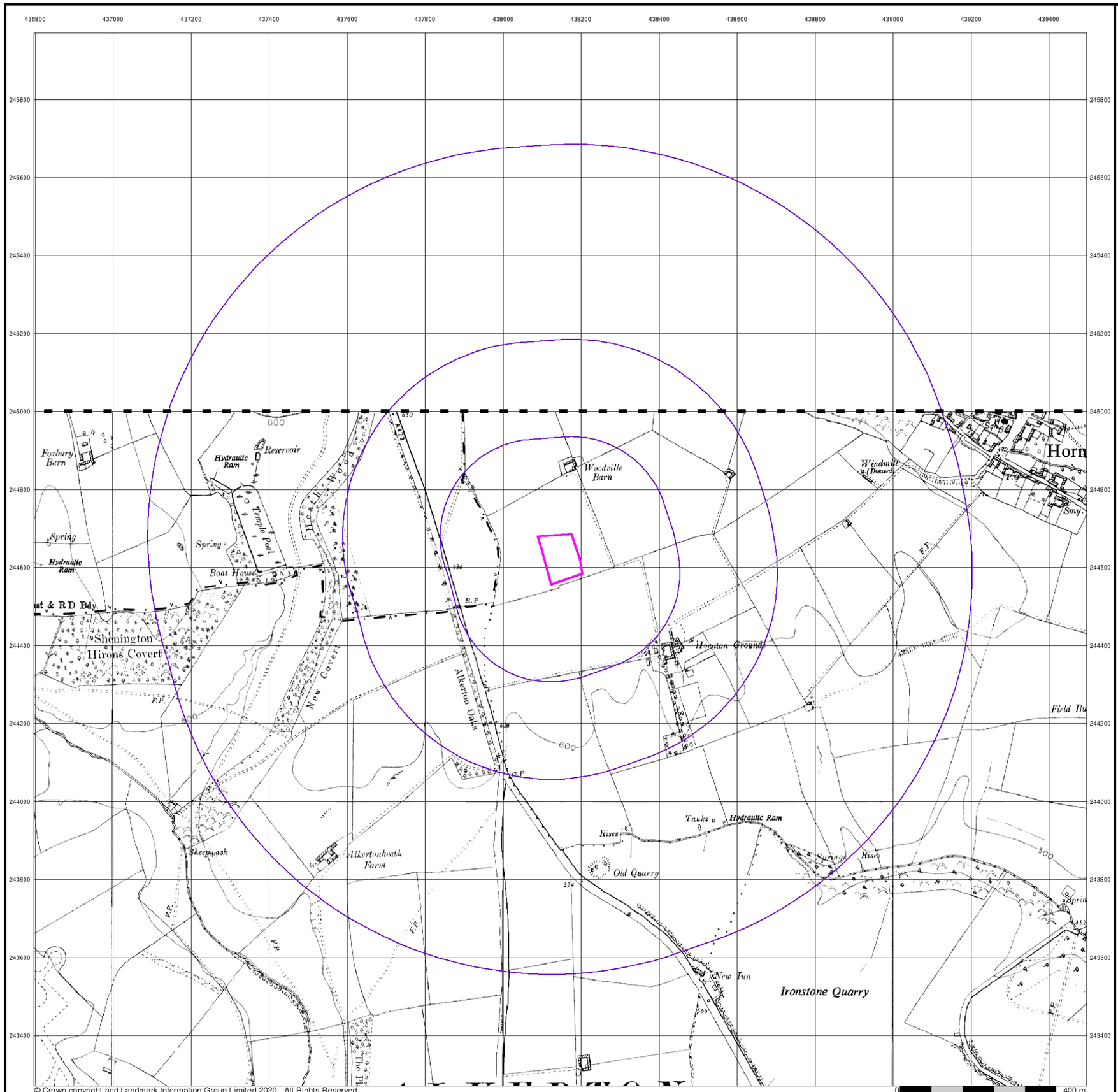

Envirocheck®

LANDMARK INFORMATION GROUP®

Ordnance Survey Plan

Published 1965

Source map scale - 1:10,000

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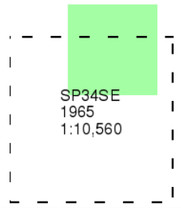
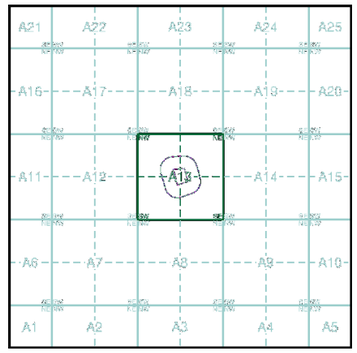
Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

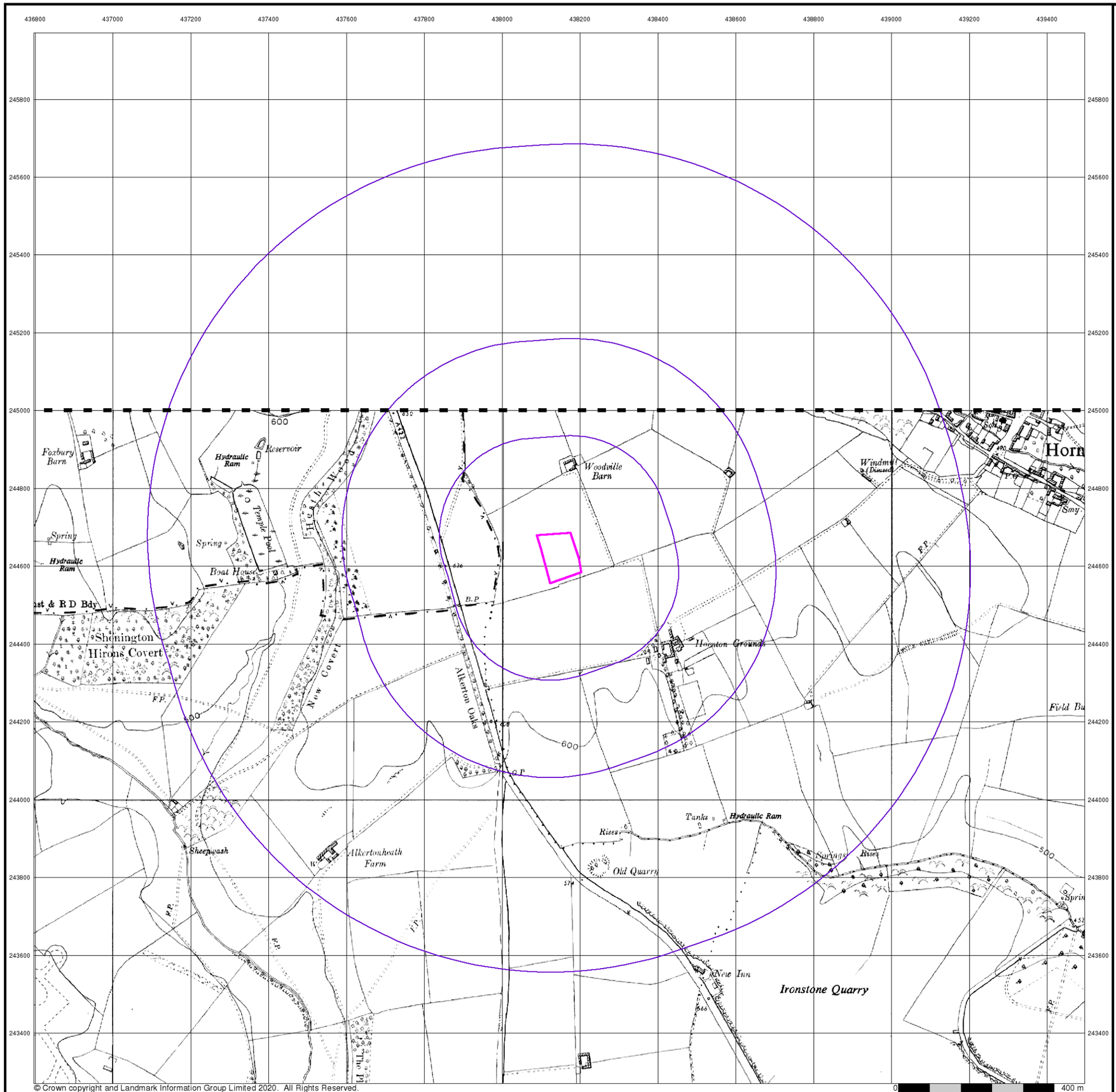
Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	1000

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Ordnance Survey Plan

Published 1971

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

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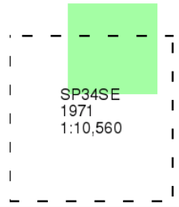
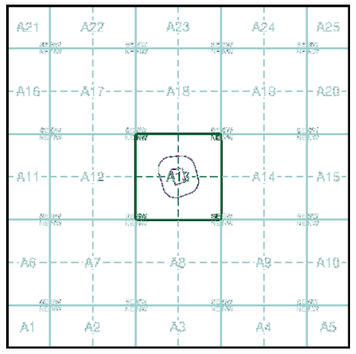


Historical Map - Slice A



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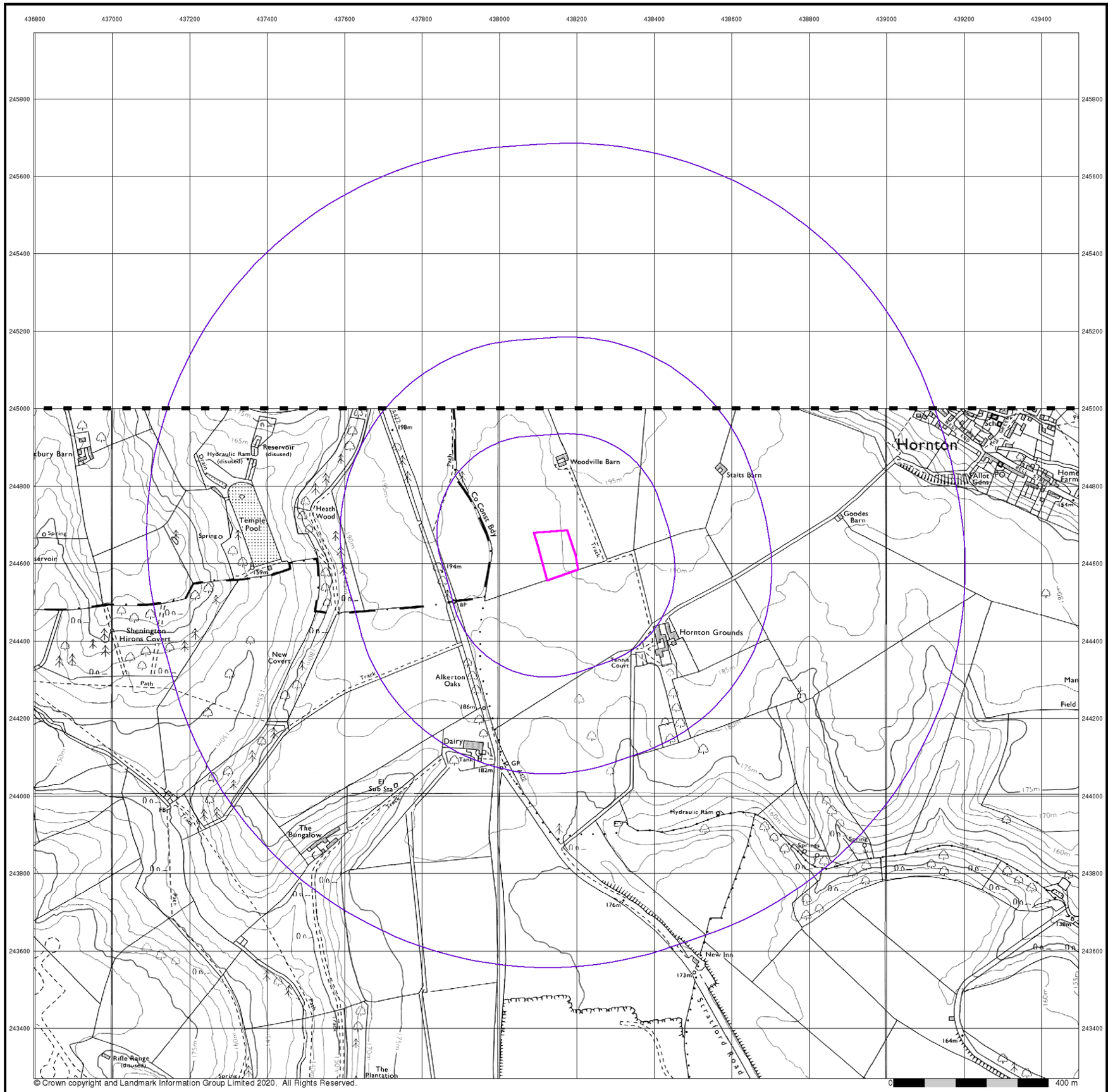

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Ordnance Survey Plan

Published 1978

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

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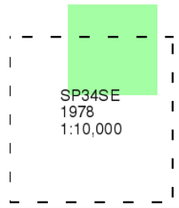
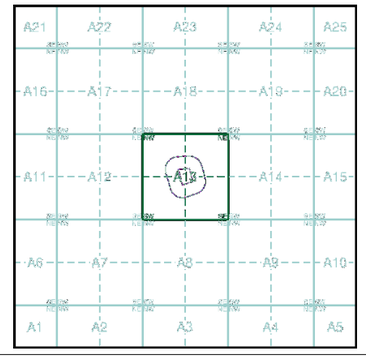


Historical Map - Slice A



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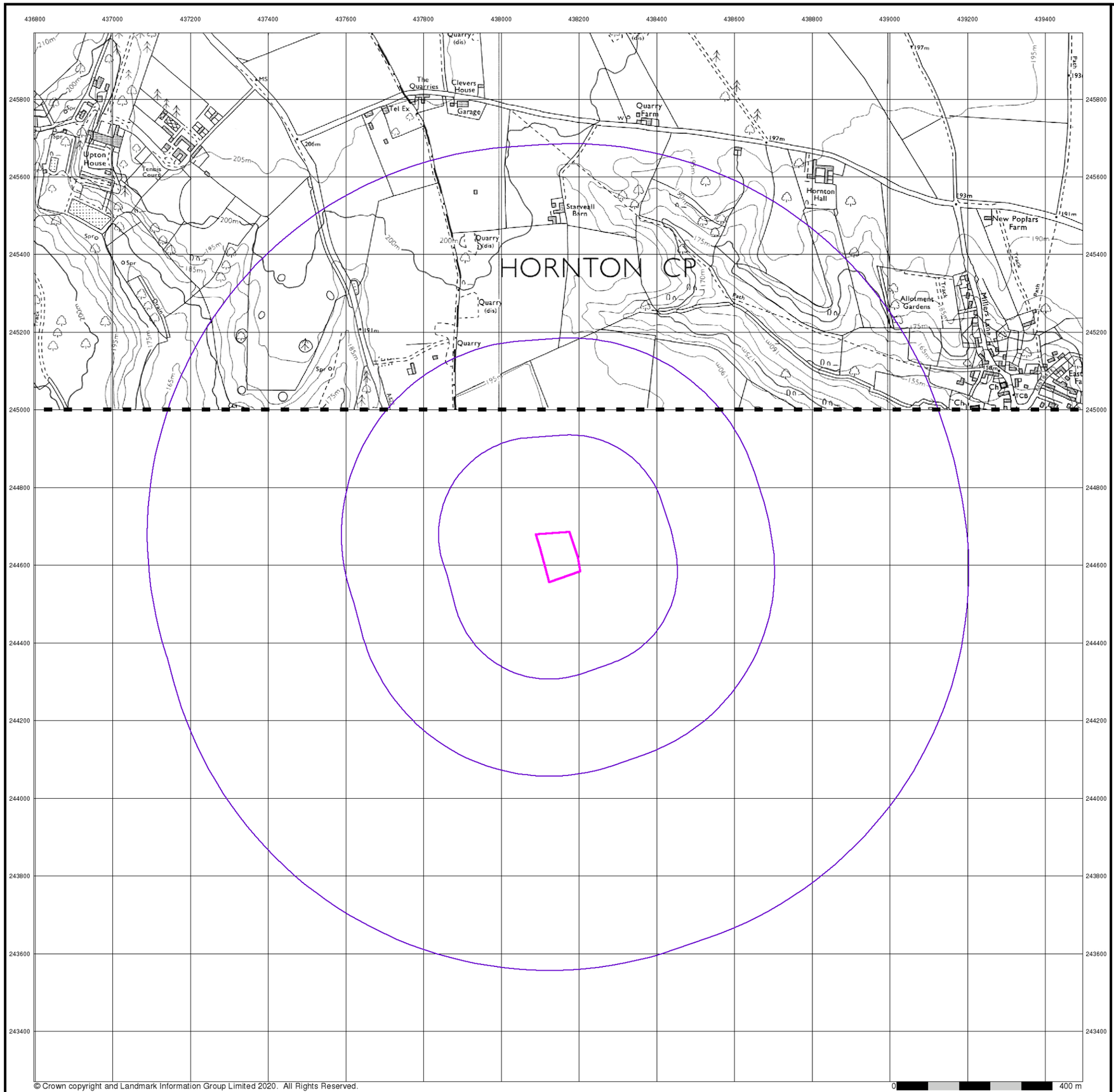

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Ordnance Survey Plan

Published 1982

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

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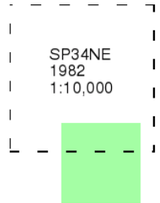
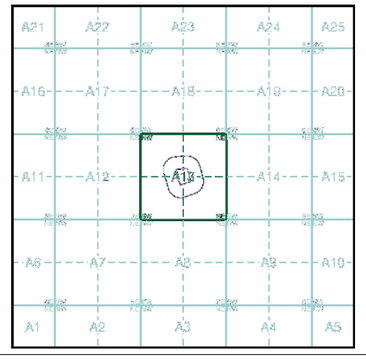


Historical Map - Slice A



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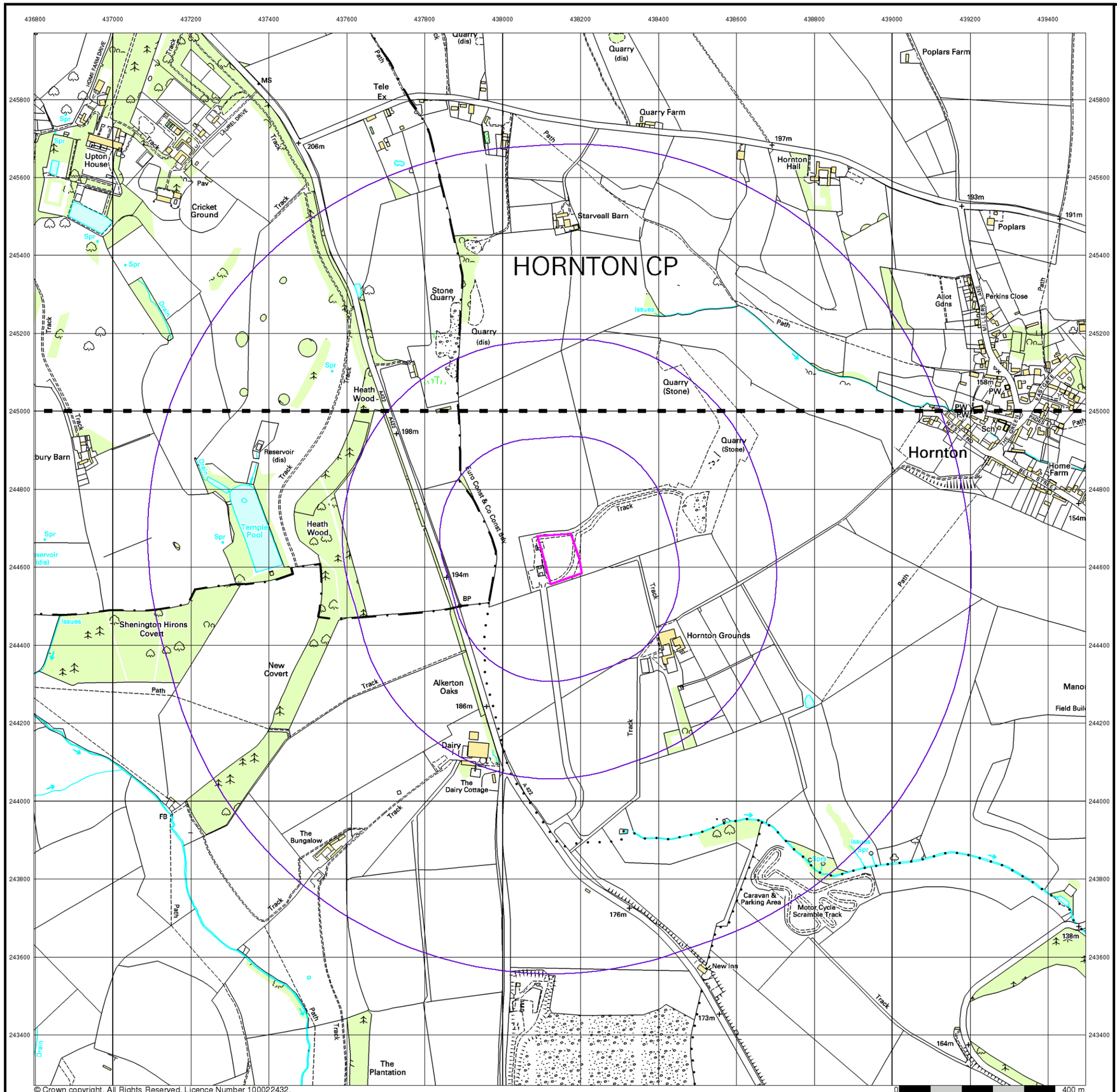

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10k Raster Mapping

Published 1999

Source map scale - 1:10,000

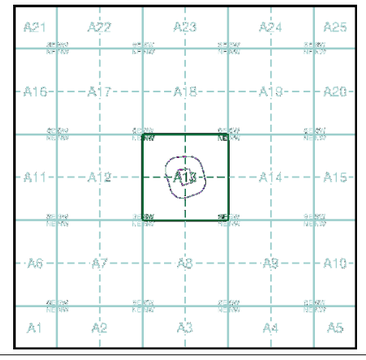
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SP34NE 1999 1:10,000

SP34SE 1999 1:10,000

Historical Map - Slice A



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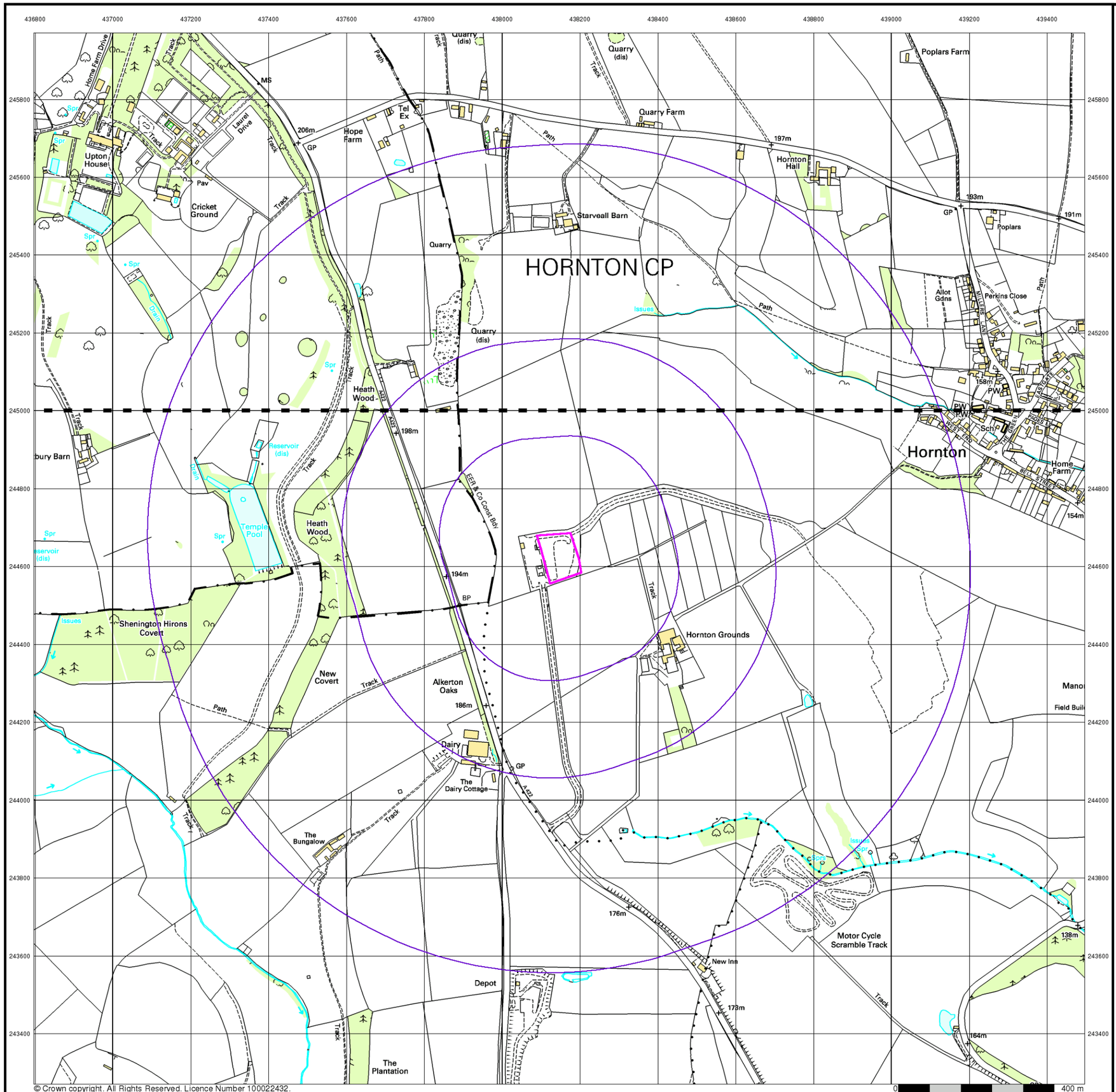

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10k Raster Mapping

Published 2006

Source map scale - 1:10,000

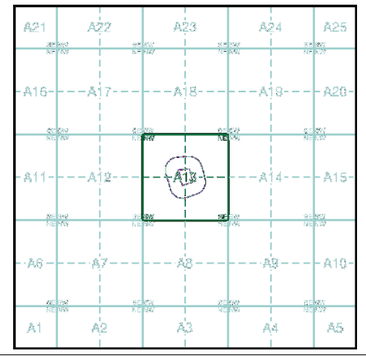
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SP34NE
2006
1:10,000

SP34SE
2006
1:10,000

Historical Map - Slice A



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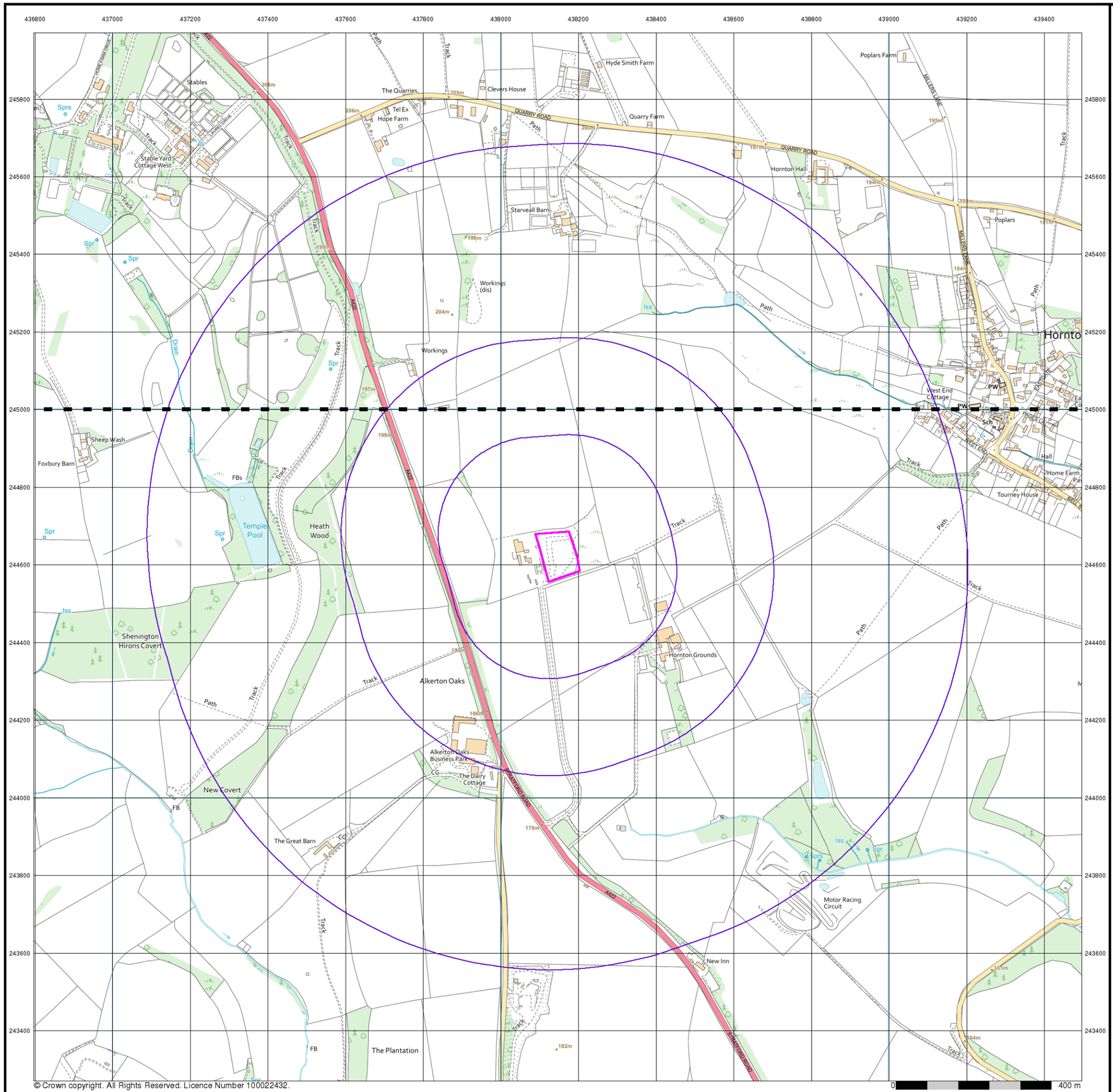

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VectorMap Local

Published 2020

Source map scale - 1:10,000

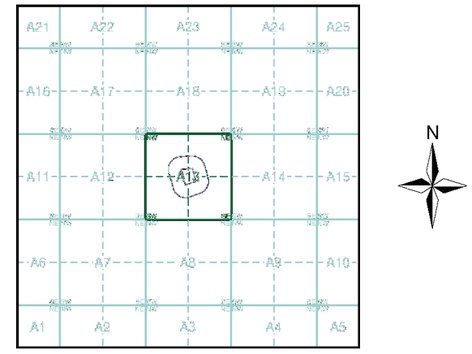
VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

SP34NE
2020
Variable

SP34SE
2020
Variable

Historical Map - Slice A



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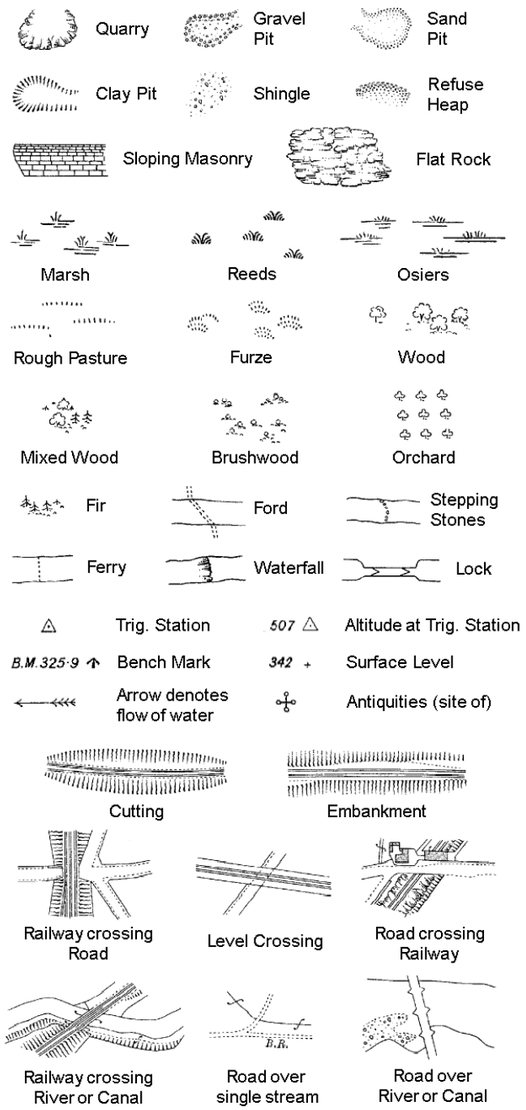
Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)

County & Civil Parish Boundary

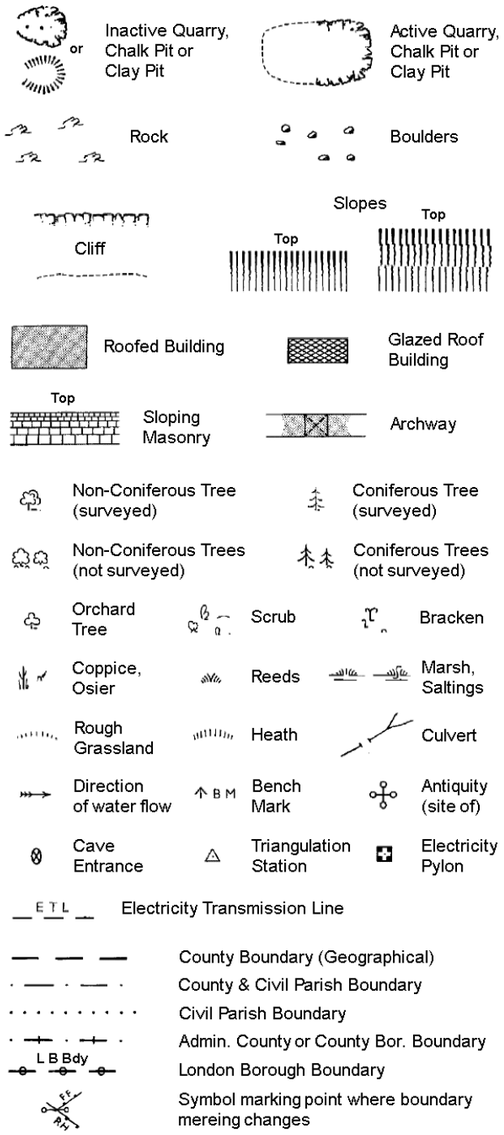
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

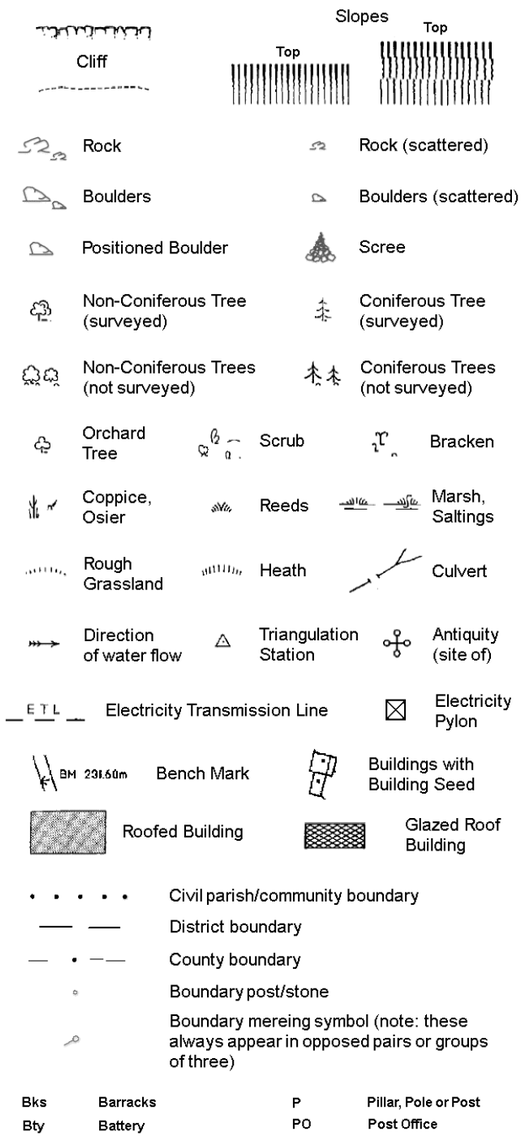
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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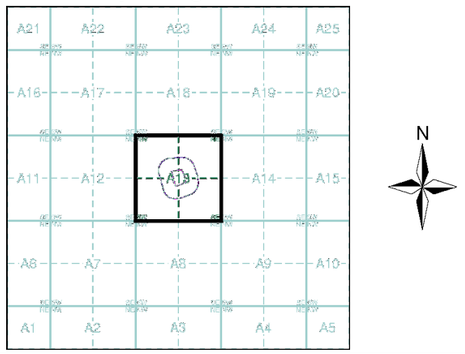
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Oxfordshire	1:2,500	1882	2
Warwickshire	1:2,500	1886	3
Oxfordshire	1:2,500	1900 - 1905	4
Oxfordshire	1:2,500	1922	5
Ordnance Survey Plan	1:2,500	1972	6
Large-Scale National Grid Data	1:2,500	1993	7
Large-Scale National Grid Data	1:2,500	1996	8
Historical Aerial Photography	1:2,500	1999	9

Historical Map - Segment A13



Order Details

Order Number: 254692374_1_1
Customer Ref: 6114
National Grid Reference: 438140, 244630
Slice: A
Site Area (Ha): 1.
Search Buffer (m): 100

Site Details

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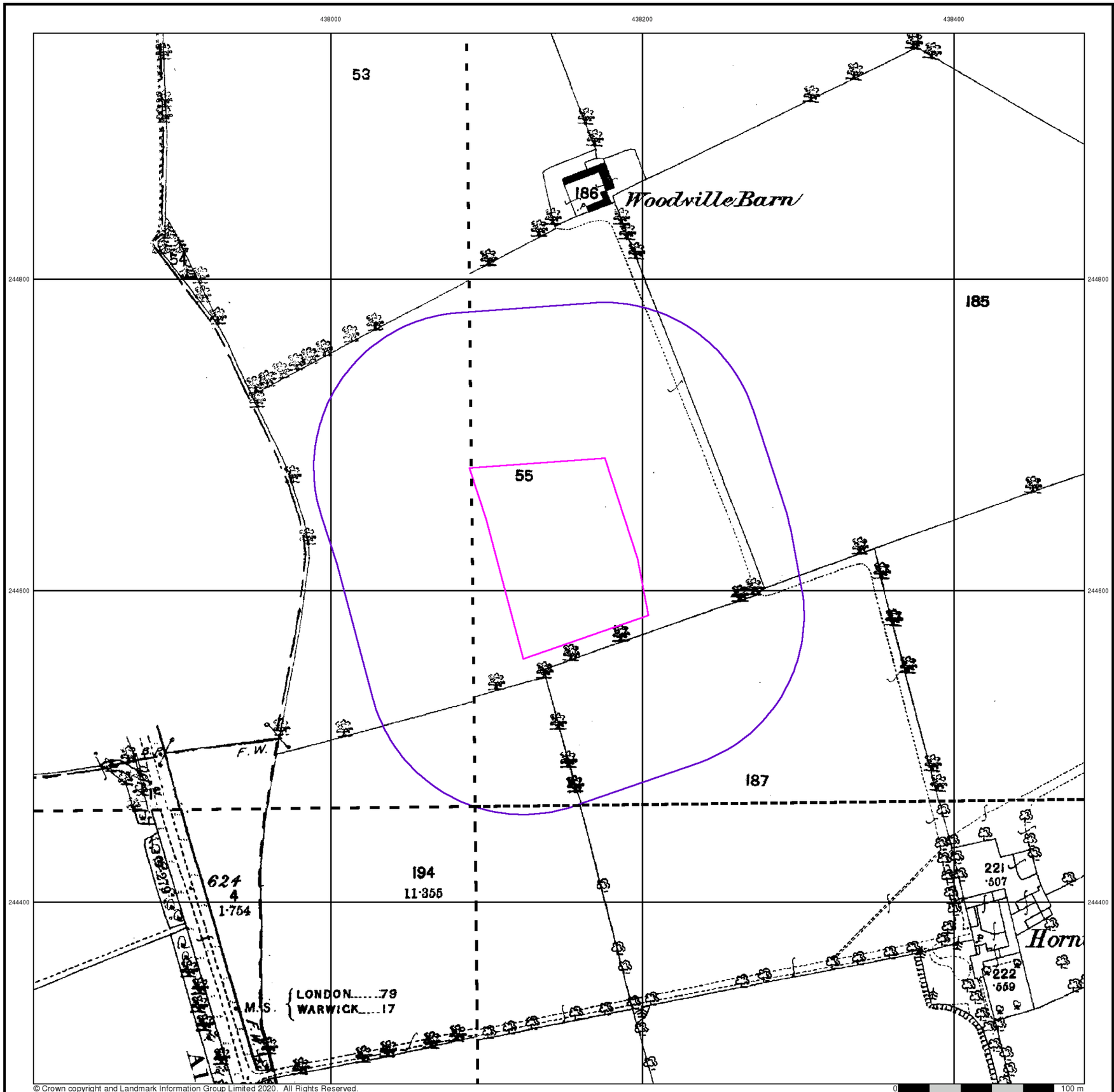

0 100 m

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Oxfordshire

Published 1882

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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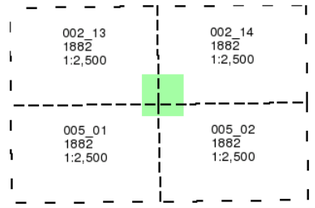
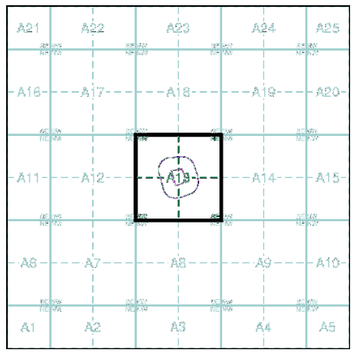


Historical Map - Segment A13



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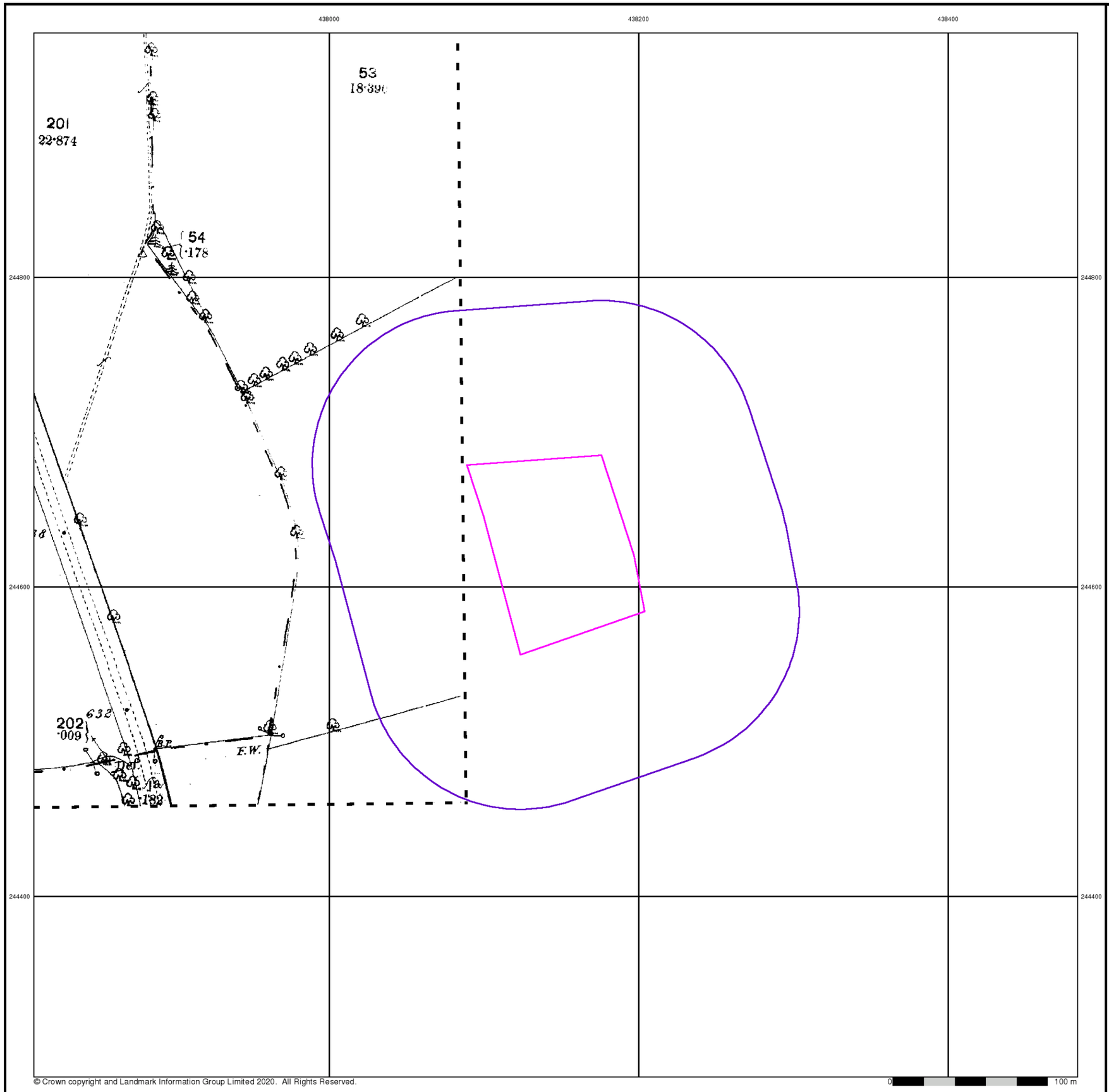

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Warwickshire

Published 1886

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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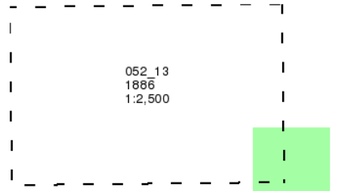
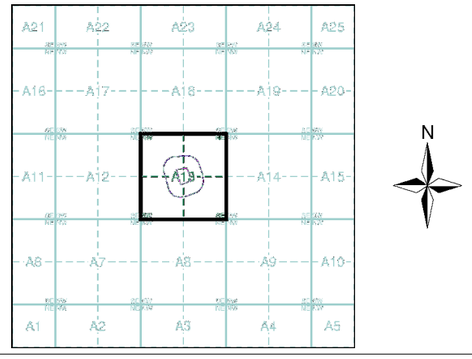


Historical Map - Segment A13



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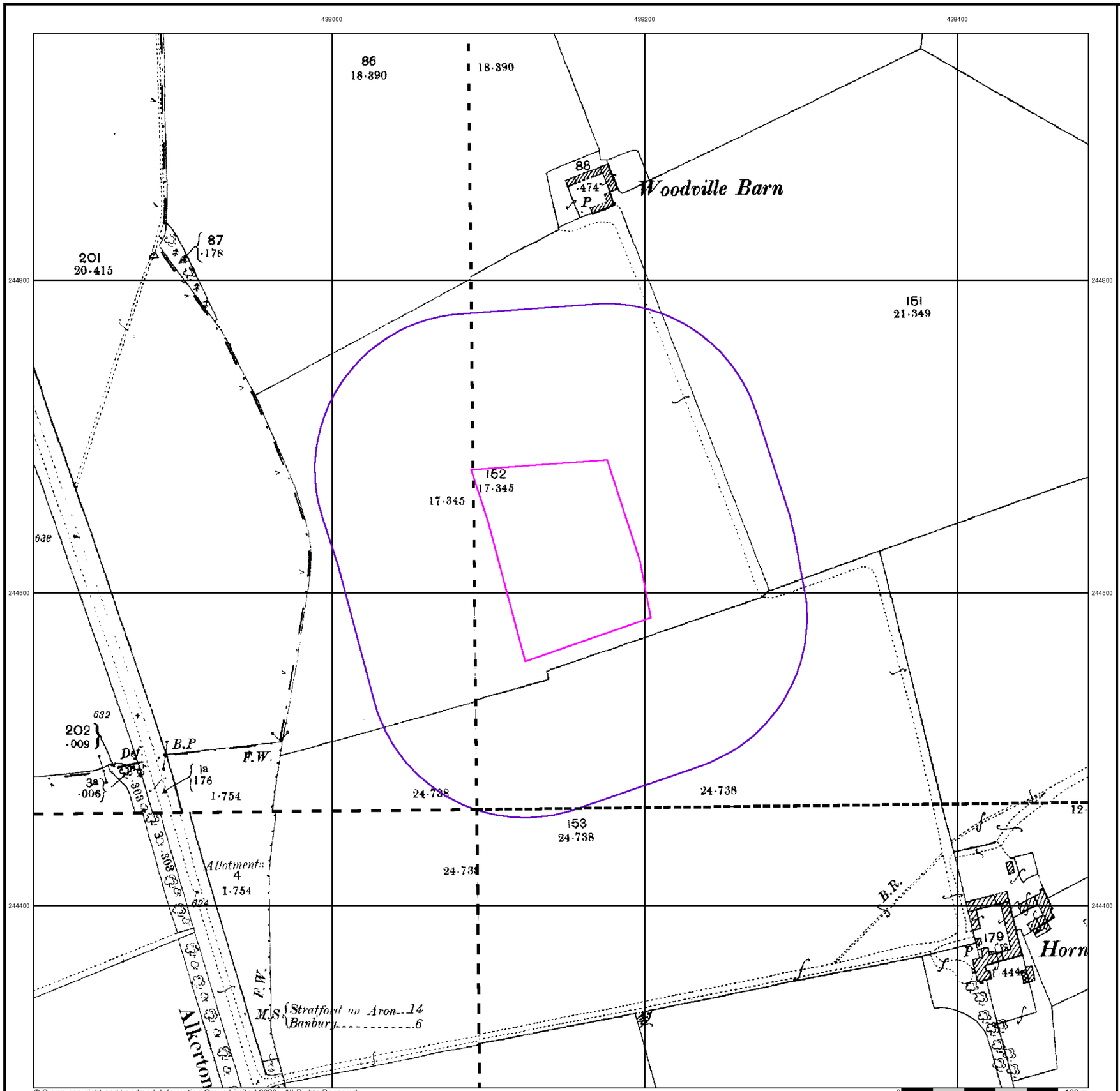

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Oxfordshire

Published 1900 - 1905

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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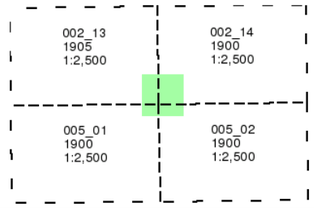
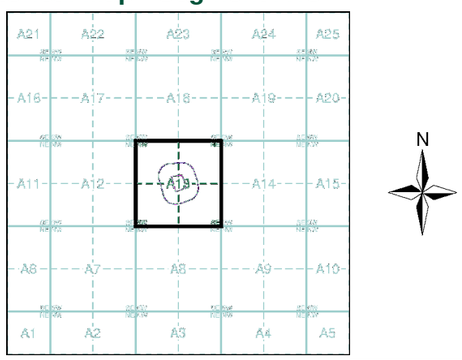


Historical Map - Segment A13



Order Details

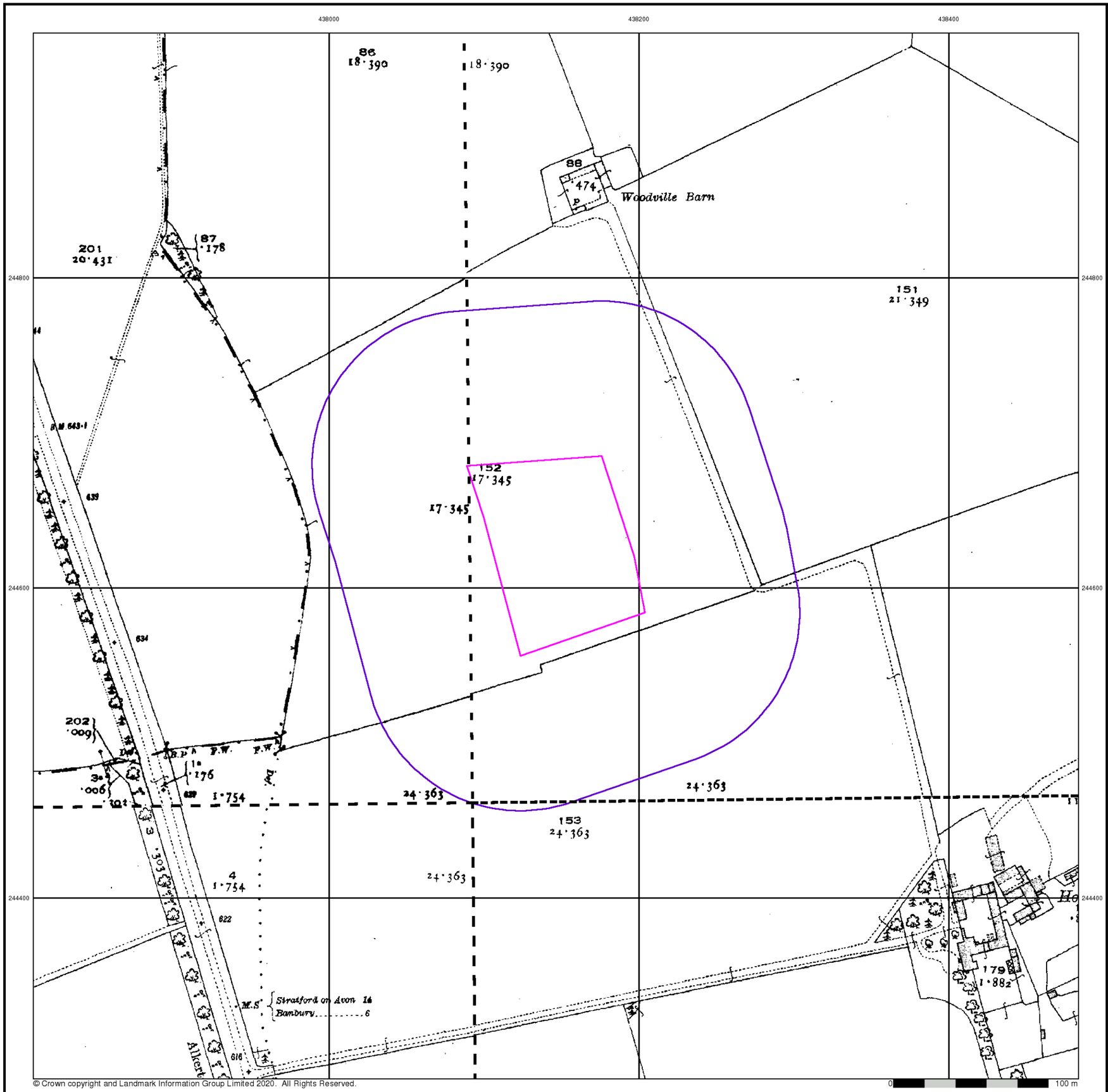
Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	100

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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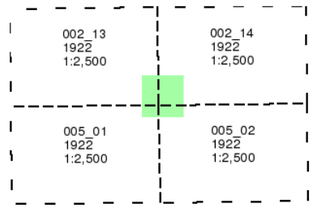
Oxfordshire

Published 1922

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



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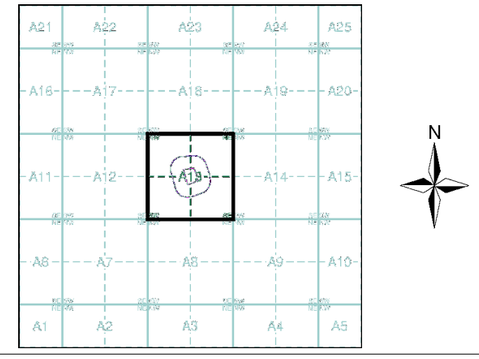

Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	100

Site Details

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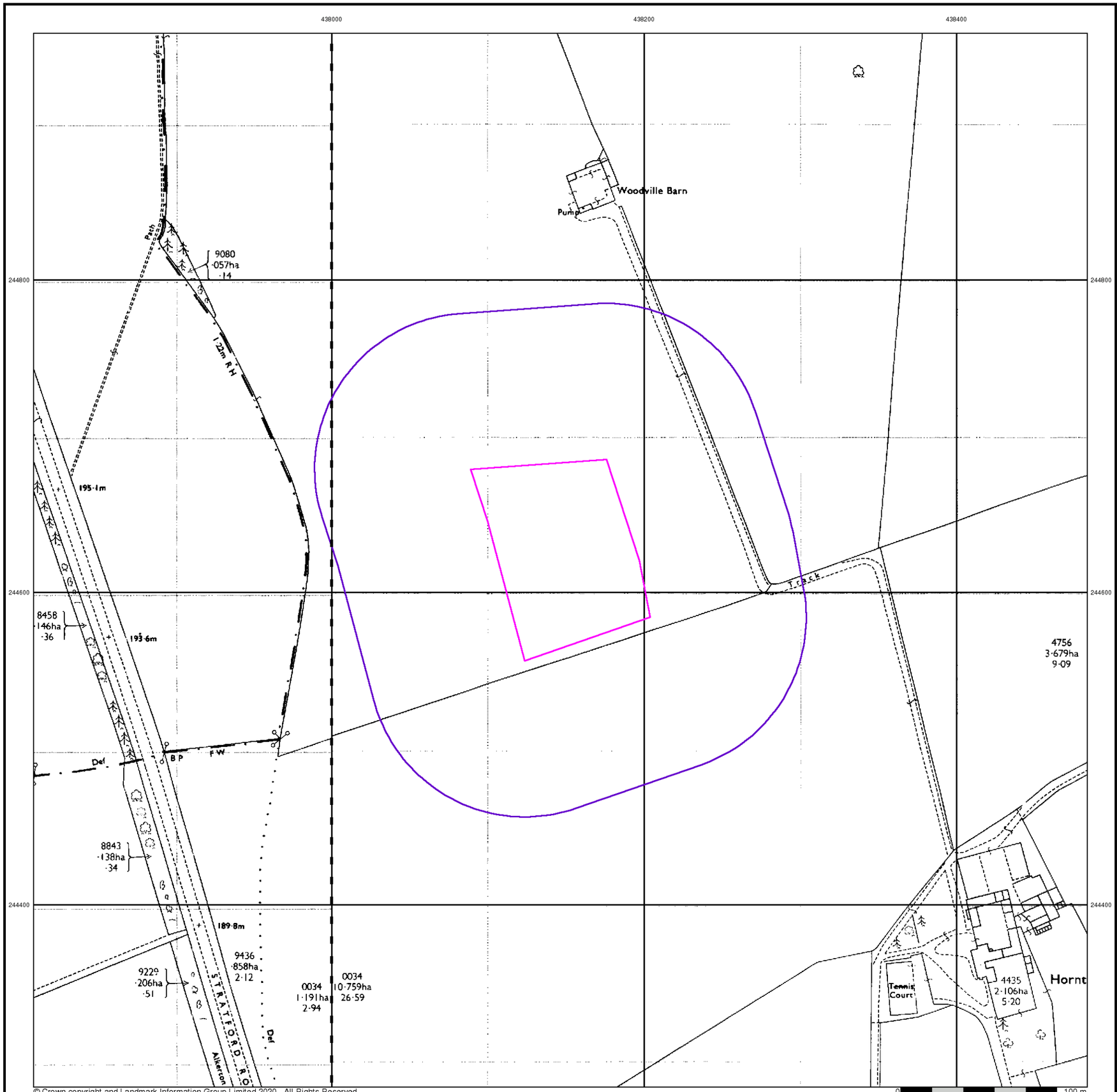

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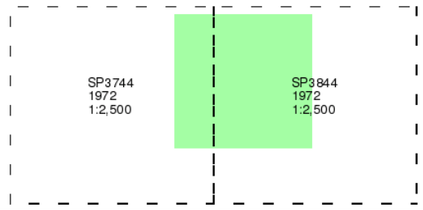
Ordnance Survey Plan

Published 1972

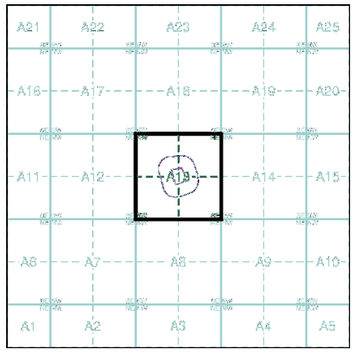
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	100

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

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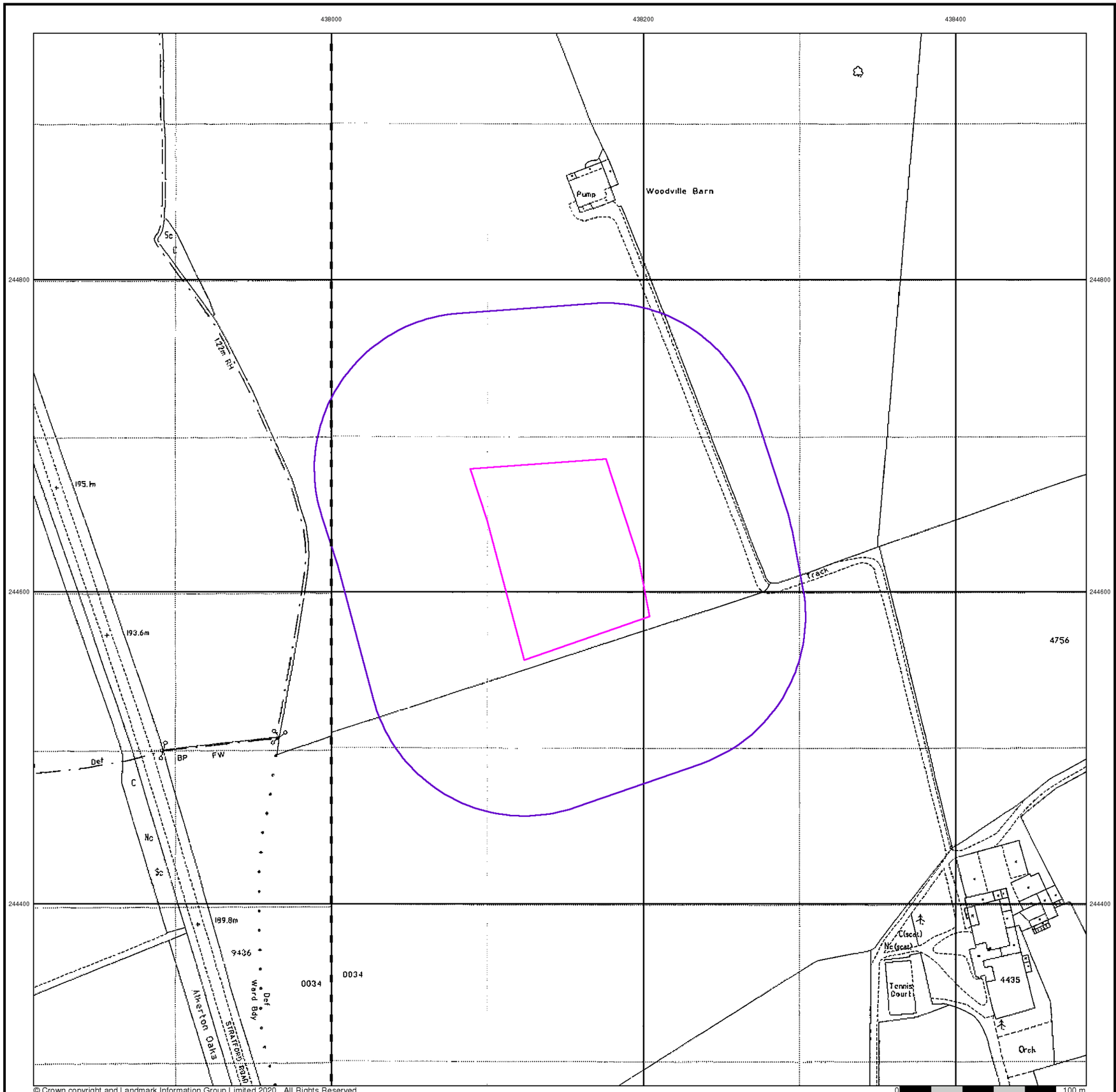

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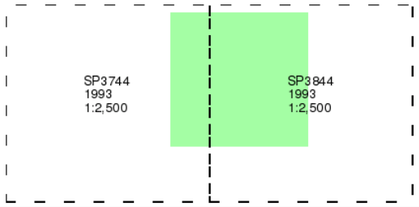
Large-Scale National Grid Data

Published 1993

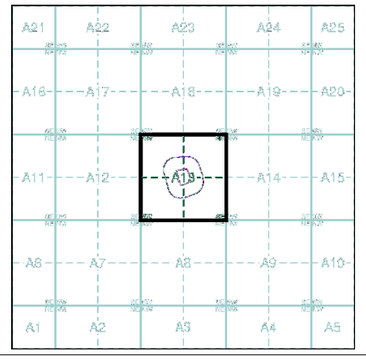
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	100

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

Landmark INFORMATION GROUP

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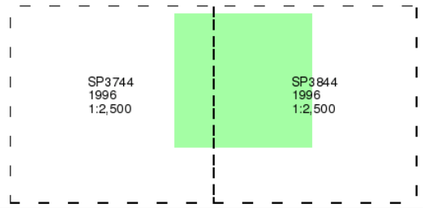
Large-Scale National Grid Data

Published 1996

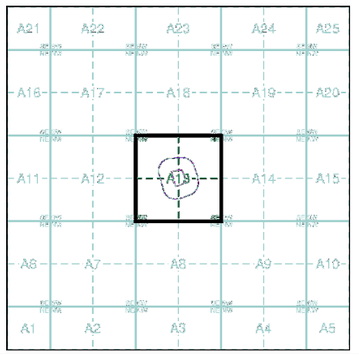
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	100

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

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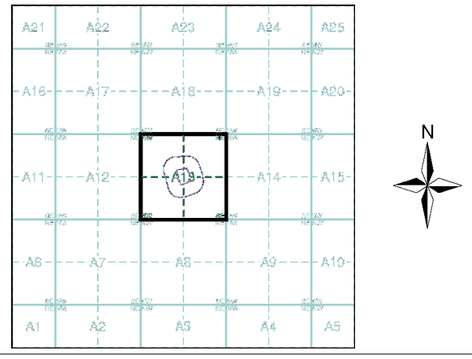
Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number:	254692374_1_1
Customer Ref:	6114
National Grid Reference:	438140, 244630
Slice:	A
Site Area (Ha):	1.
Search Buffer (m):	100

Site Details

Building Stone Ltd, Hornton Grounds Quarry, Hornton, Banbury, OX15 6HH

Landmark® INFORMATION GROUP

Tel: 0844 844 9952
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APPENDIX 6

INTRUSIVE INVESTIGATION LOGS

Borehole Log

Adler & Allan
ENVIRONMENTAL RISK REDUCTION

Borehole No. **BH1**
Sheet 1 of 1

Project Name: Hornton Quarry	Project No. 6114	Co-ords: 438167.72 - 244614.91	Hole Type BH
Location: Hornton Grounds Quarry, Hornton, Banbury		Level: 185.65	Scale 1:35
Client: Finsco		Dates: 26/08/2020 - 26/08/2020	Logged By Stacey Higgs

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
				PID=0				
					0.20	185.45		Brown slightly gravelly CLAY, gravel is sub angular to sub rounded, fine to coarse of limestone.
		0.50	ES		0.50	185.15		Strong Blue/grey LIMESTONE with occasional iron banding. Contains fossils of belemnites and brachiopods (Lobothyris and Tetrarhynchia). (Marlstone Rock Formation).
				PID=0				
				PID=0				Thinly laminated Orangey yellowish grey MUDSTONE. Iron staining at 0.9m. (Marlstone Rock Formation).
	▼							
					1.50	184.15		NO RECOVERY.
				PID=0				
					1.80	183.85		Thinly to thickly laminated Grey to orangey brown MUDSTONE. Iron stained laminations throughout. (Marlstone Rock Formation)
				PID=0				
					2.20	183.45		Thinly to thickly laminated Grey MUDSTONE with iron stained laminations. Grey CLAY band between 2.7-2.8m. (Marlstone Rock Formation).
				PID=0				
					3.00	182.65		Grey to dark grey fine to coarse SANDSTONE. Occasional bivalve fossils. Iron vein at 3.6m. (Marlstone Rock Formation).
				PID=0				
				PID=0	3.75	181.90		Grey clayey SAND fine to coarse.
					3.80	181.85		Grey slightly clayey SANDSTONE fine to coarse. (Marlstone Rock Formation).
				PID=0				
					4.50	181.15		NO RECOVERY.
					4.70	180.95		Grey to dark grey fine to coarse SANDSTONE. (Marlstone Rock Formation possible Dyrham Formation).
				PID=0				
					5.70	179.95		Dark grey LIMESTONE with gravel and shell fragments. (Marlstone Rock Formation possible Dyrham Formation).
				PID=0				
					6.00	179.65		End of borehole at 6.00 m

1 2 3 4 5 6 7

Remarks
1. Logged in general accordance with BS 5930:1999.
2. Groundwater at 1.3m before install.
3. Install was 0.5m Plain 5.5m Slotted.

Borehole Log

Adler & Allan
ENVIRONMENTAL RISK REDUCTION

Borehole No. **BH2**
Sheet 1 of 1

Project Name: Hornton Quarry	Project No. 6114	Co-ords: 438156.17 - 244667.89	Hole Type BH
Location: Hornton Grounds Quarry, Hornton, Banbury		Level: 186.29	Scale 1:35
Client: Finsco		Dates: 26/08/2020 - 26/08/2020	Logged By Stacey Higgs

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
				PID=0	0.30	185.99		Brown yellow slightly gravelly CLAY, gravel is sub angular to sub rounded, fine to coarse of limestone.
				PID=0	0.60	185.69		Strong Blue/grey LIMESTONE with occasional iron banding. Contains fossils of belemnites and brachiopods (Lobothyris and Tetrarhynchia). (Marlstone Rock Formation).
	▼			PID=0	1.60	184.69		Orangey grey thinly to thickly laminated MUDSTONE with iron staining. (Marlstone Rock).
				PID=0	2.60	183.69		Greyish orange laminated MUDSTONE, highly concentrated iron staining in laminations. (Marlstone Rock).
				PID=0	3.00	183.29		Blueish grey CLAY. Some iron staining.
				PID=0	3.20	183.09		Grey LIMESTONE with fine to coarse gravels of shell fragments. (Marlstone Rock).
				PID=0	3.30	182.99		Orange CLAY.
		3.50	ES	PID=0	3.40	182.89		Grey LIMESTONE with fine gravels of shell fragments.
								Grey SANDSTONE with occasional fine to coarse gravel of bivalve fossils. (Marlstone Rock possible Dyrham Formation).
					6.00	180.29		End of borehole at 6.00 m

1 2 3 4 5 6 7

Remarks
1. Logged in general accordance with BS 5930:1999.
2. Groundwater at 1.4m before install.
3. Install was 0.5m Plain 5.5m Slotted.

Trial Pit Log

Trialpit No: **TP1**

Sheet 1 of 1

Project Name: Hornton Quarry	Project No. 6114	Co-ords: 438142.49 - 244613.38 Level: 185.79	Date 26/08/2020
Location: Hornton Grounds Quarry, Hornton, Banbury		Dimensions (m): Depth 1.05	Scale 1:10
Client: Finsco			Logged Stacey Higgs

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
			PID=0				Strong Blue/grey LIMESTONE with occasional iron banding. Contains fossils of belemnites and brachiopods (Lobothyris and Tetrarhynchia). (Marlstone Rock Formation).
			PID=0				
▼	0.55	ES		0.50	185.29		Light brown silty MUDSTONE. (Marlstone Rock Formation).
			PID=0				
				0.80	184.99		Soft to Firm Blue/grey CLAY. (Weathered Marlstone Rock Formation).
			PID=0				
				1.05	184.74		End of pit at 1.05 m

1

2

Remarks:
1. Logged in general accordance with BS 5930:1999.
2. Groundwater seepage at 0.55m bgl.
3. DTW (am) = 1.05m bgl, DTW (pm) = 0.94m bgl

Stability:

Trial Pit Log

Trialpit No **TP2**

Sheet 1 of 1

Project Name: Hornton Quarry	Project No. 6114	Co-ords: 438131.37 - 244630.39 Level: 186.13	Date 26/08/2020
Location: Hornton Grounds Quarry, Hornton, Banbury		Dimensions (m): Depth 1.05	Scale 1:10
Client: Finsco			Logged Stacey Higgs

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
			PID=0				Strong Blue/grey LIMESTONE with occasional iron banding. Contains fossils of belemnites and brachiopods (Lobothyris and Tetrarhynchia). (Marlstone Rock Formation).
			PID=0				
			PID=0	0.55	185.58		Light brown silty MUDSTONE. (Marlstone Rock Formation).
▼	0.65	ES					
			PID=0	0.80	185.33		Soft to Firm Blue/grey CLAY. (Weathered Marlstone Rock Formation).
				1.05	185.08		End of pit at 1.05 m

Remarks:
1. Logged in general accordance with BS 5930:1999.
2. Groundwater seepage at 0.65m bgl.
3. DTW (am) = 1.05m bgl, DTW (pm) = 0.95m bgl

Stability:

Trial Pit Log

Trialpit No **TP3**

Sheet 1 of 1

Project Name: Hornton Quarry	Project No. 6114	Co-ords: 438143.25 - 244635.46 Level: 186.09	Date 26/08/2020
Location: Hornton Grounds Quarry, Hornton, Banbury		Dimensions (m): Depth 1.10	Scale 1:10
Client: Finsco			Logged Stacey Higgs

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
			PID=0				Strong Blue/grey LIMESTONE with occasional iron banding. Contains fossils of belemnites and brachiopods (Lobothyris and Tetrarhynchia). (Marlstone Rock Formation).
			PID=0				
▼							
			PID=0	0.75	185.34		Light brown silty MUDSTONE. (Marlstone Rock Formation).
	0.90	ES		0.85	185.24		Soft to Firm Blue/grey CLAY. (Weathered Marlstone Rock Formation).
			PID=0				
				1.10	184.99		End of pit at 1.10 m

1

2

Remarks:
1. Logged in general accordance with BS 5930:1999.
2. Groundwater seepage at 0.55m bgl.
3. DTW (am) = 1.1m bgl, DTW (pm) = 1m bgl

Stability:

Trial Pit Log

Trialpit No **TP4**

Sheet 1 of 1

Project Name: Hornton Quarry	Project No. 6114	Co-ords: 438172.45 - 244641.23 Level: 185.93	Date 26/08/2020
Location: Hornton Grounds Quarry, Hornton, Banbury		Dimensions (m): Depth 1.03	Scale 1:10
Client: Finsco			Logged Stacey Higgs

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	ES					Brown gravelly CLAY. Gravel is angular to sub angular fine to coarse of limestone. Moderate Limestone cobble and boulder content. (Made Ground).
			PID=0				
			PID=0	0.84	185.09		Soft to Firm Blue/grey CLAY. (Weathered Marlstone Rock Formation).
▼			PID=0	1.03	184.90		End of pit at 1.03 m

Remarks:
1. Logged in general accordance with BS 5930:1999.
2. Groundwater seepage at base.

Stability:

APPENDIX 7

GROUNDWATER MONITORING RESULTS

GROUNDWATER MONITORING RECORD SHEET

PROJECT PARTICULARS				EQUIPMENT	QTY USED	MOBILISATION	TIME / MILES
Project Name:	Hornton Quarry			Interface Probe:	1	Left Base:	
Project Number:	6114			PID:	1	On Site:	
Personnel:	Stacey Higgs			New Bailers:			
Weather Conditions:	Dry and Sunny			Pump:		Back to Base:	
Pressure (mb):	997	Temperature (°C):		Tubing (m):		Mileage:	

Sheet: 1 of 1

Date: 02/09/2020

LOCATION	TIME	BOREHOLE / WELL OBSERVATIONS								Purging and Sampling								BAILER / SAMPLE OBSERVATIONS			
		Well I.D.	Reference Point (+ bgl / - agl)	Borehole Headspace PID	Depth to Product (DTP)	Depth to Water (DTW)	Depth to Base (DTB)	Product Thickness	Height of Water Column	Method	Volume	Bailer I.D.	Bails	500ml Glass	250ml Glass	VOC Vial	Other	Sample Headspace PID	Product Thickness	NOTES	
		mm	*m*	*ppm*	*m*	*m*	*m*	*mm*	*m*									*ppm*	*mm*	*Product / Sheens / Colours / Odours / Water / Sediment*	
BH1		50		0.0	NP	1.050	6.018		4.968	B	30			2		4				Cloudy grey, NO, NS.	*BH1*
BH2		50		0.0	NP	1.020	6.001		4.981	B	30			2		4				Cloudy grey, NO, NS.	*BH2*

PURGING: READY REFERENCE						
Borehole / well I.D. (mm)	19	35	50	50	75	100
Bailer I.D. (mm)	18	19	19	38	38	38
No. bails to purge per m	4	12	23	6	13	23
3 well volumes per m (litres)	1	2	6	6	14	24

NOTES

Ground Level (gl): Use negative values for above (agl), use positive values for below (bgl), use 0.000 for at gl.

Purging requires removing 3 well volumes prior to sampling. Method: B = Bailer, L = Litres via pump / footvalve.

Where r = radius in mm and h = height in m, the volume of a cylinder in litres is calculated by: $\pi r^2 h/1000$.

Assumed bailer length: **0.95** m

Grey shaded columns are calculated automatically.

APPENDIX 8

CHEMICAL ANALYSIS RESULTS

Element Materials Technology
Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

P: +44 (0) 1244 833780
F: +44 (0) 1244 833781
W: www.element.com

OHES Environmental
Unit 3, Forest Court
Off Fishponds Road
Wokingham
Berkshire
RG41 2FD

Attention :	Stacey Higgs
Date :	7th September, 2020
Your reference :	6114
Our reference :	Test Report 20/11605 Batch 1 Schedule A
Location :	Horton Quarry
Date samples received :	29th August, 2020
Status :	Final report
Issue :	1

Six samples were received for analysis on 29th August, 2020 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

[redacted]

Phil Sommerton BSc
Senior Project Manager

Client Name: OHES Environmental
Reference: 6114
Location: Horton Quarry
Contact: Stacey Higgs
EMT Job No: 20/11605

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-2	3-4	5-6	7-8	9-10	11-12					LOD/LOR	Units	Method No.
Sample ID	TP1	TP2	TP3	TP4	BH2	BH1							
Depth	0.55	0.65	0.90	0.20	3.50	0.50							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	26/08/2020	26/08/2020	26/08/2020	26/08/2020	26/08/2020	26/08/2020							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	29/08/2020	29/08/2020	29/08/2020	29/08/2020	29/08/2020	29/08/2020							
Arsenic #	-	-	-	156.2	38.4	-					<0.5	mg/kg	TM30/PM15
Barium #	-	-	-	26	38	-					<1	mg/kg	TM30/PM15
Beryllium	-	-	-	6.8	1.9	-					<0.5	mg/kg	TM30/PM15
Cadmium #	-	-	-	<0.1	<0.1	-					<0.1	mg/kg	TM30/PM15
Chromium #	-	-	-	272.3 AA	70.8	-					<0.5	mg/kg	TM30/PM15
Copper #	-	-	-	<1	22	-					<1	mg/kg	TM30/PM15
Lead #	-	-	-	7	17	-					<5	mg/kg	TM30/PM15
Mercury #	-	-	-	<0.1	<0.1	-					<0.1	mg/kg	TM30/PM15
Nickel #	-	-	-	87.9	49.8	-					<0.7	mg/kg	TM30/PM15
Selenium #	-	-	-	1	<1	-					<1	mg/kg	TM30/PM15
Vanadium	-	-	-	541 AA	85	-					<1	mg/kg	TM30/PM15
Water Soluble Boron #	-	-	-	3.6	0.8	-					<0.1	mg/kg	TM74/PM32
Zinc #	-	-	-	240	113	-					<5	mg/kg	TM30/PM15
Methyl Tertiary Butyl Ether #	-	<2	-	-	-	-					<2	ug/kg	TM15/PM10
Benzene #	-	<3	-	-	-	-					<3	ug/kg	TM15/PM10
Toluene #	-	<3	-	-	-	-					<3	ug/kg	TM15/PM10
Ethylbenzene #	-	<3	-	-	-	-					<3	ug/kg	TM15/PM10
m/p-Xylene #	-	<5	-	-	-	-					<5	ug/kg	TM15/PM10
o-Xylene #	-	<3	-	-	-	-					<3	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	109	-	-	-	-					<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	118	-	-	-	-					<0	%	TM15/PM10
EPH >C8-C10 #	<5	-	<5	<5	-	<5					<5	mg/kg	TM5/PM8
EPH >C10-C12 #	<10	-	<10	<10	-	<10					<10	mg/kg	TM5/PM8
EPH >C12-C16 #	<10	-	<10	<10	-	<10					<10	mg/kg	TM5/PM8
EPH >C16-C21 #	<10	-	<10	<10	-	<10					<10	mg/kg	TM5/PM8
EPH >C21-C40	44	-	<10	78	-	<10					<10	mg/kg	TM5/PM8
EPH >C8-C40	44	-	<30	78	-	<30					<30	mg/kg	TM5/PM8
TPH CWG													
Aliphatics													
>C5-C6 #	-	<0.1	-	-	<0.1	-					<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	<0.1	-	-	<0.1	-					<0.1	mg/kg	TM36/PM12
>C8-C10	-	<0.1	-	-	<0.1	-					<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	<0.2	-	-	<0.2	-					<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	-	<4	-	-	<4	-					<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	-	<7	-	-	<7	-					<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	-	<7	-	-	<7	-					<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35	-	<19	-	-	<19	-					<19	mg/kg	TM5/TM36/PM8/PM12/PM16

Element Materials Technology

Client Name: OHES Environmental
Reference: 6114
Location: Horton Quarry
Contact: Stacey Higgs
EMT Job No: 20/11605

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-2	3-4	5-6	7-8	9-10	11-12					LOD/LOR	Units	Method No.
Sample ID	TP1	TP2	TP3	TP4	BH2	BH1							
Depth	0.55	0.65	0.90	0.20	3.50	0.50							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	26/08/2020	26/08/2020	26/08/2020	26/08/2020	26/08/2020	26/08/2020							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	29/08/2020	29/08/2020	29/08/2020	29/08/2020	29/08/2020	29/08/2020							
TPH CWG													
Aromatics													
>C5-EC7 #	-	<0.1	-	-	<0.1	-					<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	-	<0.1	-	-	<0.1	-					<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	<0.1	-	-	<0.1	-					<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	<0.2	-	-	<0.2	-					<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	-	<4	-	-	<4	-					<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	-	<7	-	-	<7	-					<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	-	<7	-	-	<7	-					<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	-	<19	-	-	<19	-					<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35)	-	<38	-	-	<38	-					<38	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE #	-	-	-	-	<5	-					<5	ug/kg	TM36/PM12
Benzene #	-	-	-	-	<5	-					<5	ug/kg	TM36/PM12
Toluene #	-	-	-	-	<5	-					<5	ug/kg	TM36/PM12
Ethylbenzene #	-	-	-	-	<5	-					<5	ug/kg	TM36/PM12
m/p-Xylene #	-	-	-	-	<5	-					<5	ug/kg	TM36/PM12
o-Xylene #	-	-	-	-	<5	-					<5	ug/kg	TM36/PM12
Natural Moisture Content	21.4	34.4	21.4	17.7	17.3	14.1					<0.1	%	PM4/PM0
Hexavalent Chromium #	-	-	-	<0.3	<0.3	-					<0.3	mg/kg	TM38/PM20
Chromium III	-	-	-	272.3	70.8	-					<0.5	mg/kg	NONE/NONE
pH #	-	-	-	8.25	7.38	-					<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Client Name: OHES Environmental
Reference: 6114
Location: Horton Quarry
Contact: Stacey Higgs
EMT Job No: 20/11605

SVOC Report : **Solid**

EMT Sample No.	3-4	7-8										
Sample ID	TP2	TP4										
Depth	0.65	0.20										
COC No / misc												
Containers	V J	V J										
Sample Date	26/08/2020	26/08/2020										
Sample Type	Soil	Soil										
Batch Number	1	1										
Date of Receipt	29/08/2020	29/08/2020										
SVOC MS												
Phenols												
2-Chlorophenol #	<10	<10									<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10									<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10									<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #	<10	<10									<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<10									<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10									<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10									<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<10									<10	ug/kg	TM16/PM8
4-Methylphenol	<10	<10									<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<10									<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<10									<10	ug/kg	TM16/PM8
Phenol #	<10	<10									<10	ug/kg	TM16/PM8
PAHs												
2-Chloronaphthalene #	<10	<10									<10	ug/kg	TM16/PM8
2-Methylnaphthalene #	<10	<10									<10	ug/kg	TM16/PM8
Naphthalene	<10	<10									<10	ug/kg	TM16/PM8
Acenaphthylene	<10	<10									<10	ug/kg	TM16/PM8
Acenaphthene	<10	<10									<10	ug/kg	TM16/PM8
Fluorene	<10	<10									<10	ug/kg	TM16/PM8
Phenanthrene #	<10	<10									<10	ug/kg	TM16/PM8
Anthracene	<10	<10									<10	ug/kg	TM16/PM8
Fluoranthene #	<10	24									<10	ug/kg	TM16/PM8
Pyrene #	<10	22									<10	ug/kg	TM16/PM8
Benzo(a)anthracene	<10	41									<10	ug/kg	TM16/PM8
Chrysene	<10	18									<10	ug/kg	TM16/PM8
Benzo(bk)fluoranthene	<10	29									<10	ug/kg	TM16/PM8
Benzo(a)pyrene	<10	16									<10	ug/kg	TM16/PM8
Indeno(123cd)pyrene	<10	<10									<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene	<10	<10									<10	ug/kg	TM16/PM8
Benzo(ghi)perylene	<10	16									<10	ug/kg	TM16/PM8
Benzo(b)fluoranthene	<10	21									<10	ug/kg	TM16/PM8
Benzo(k)fluoranthene	<10	<10									<10	ug/kg	TM16/PM8
Phthalates												
Bis(2-ethylhexyl) phthalate	<100	<100									<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100	<100									<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100	<100									<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<100									<100	ug/kg	TM16/PM8
Diethyl phthalate	<100	<100									<100	ug/kg	TM16/PM8
Dimethyl phthalate #	<100	<100									<100	ug/kg	TM16/PM8

Please see attached notes for all abbreviations and acronyms

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: OHES Environmental
Reference: 6114
Location: Horton Quarry
Contact: Stacey Higgs
EMT Job No: 20/11605

SVOC Report : **Solid**

EMT Sample No.	3-4	7-8											
Sample ID	TP2	TP4											
Depth	0.65	0.20									Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J	V J											
Sample Date	26/08/2020	26/08/2020											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	29/08/2020	29/08/2020									LOD/LOR	Units	Method No.
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene	<10	<10									<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #	<10	<10									<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	<10									<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	<10									<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<10									<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	<10									<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<10									<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<10									<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #	<10	<10									<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<10									<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	<10									<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<10									<10	ug/kg	TM16/PM8
Azobenzene	<10	<10									<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<10									<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<10									<10	ug/kg	TM16/PM8
Carbazole	<10	<10									<10	ug/kg	TM16/PM8
Dibenzofuran #	<10	<10									<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<10									<10	ug/kg	TM16/PM8
Hexachlorobutadiene #	<10	<10									<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<10									<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<10									<10	ug/kg	TM16/PM8
Isophorone #	<10	<10									<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #	<10	<10									<10	ug/kg	TM16/PM8
Nitrobenzene #	<10	<10									<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	119	115									<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	106	106									<0	%	TM16/PM8

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: OHES Environmental
Reference: 6114
Location: Horton Quarry
Contact: Stacey Higgs
EMT Job No: 20/11605

VOC Report : **Solid**

EMT Sample No.	3-4	7-8										
Sample ID	TP2	TP4										
Depth	0.65	0.20										
COC No / misc												
Containers	V J	V J										
Sample Date	26/08/2020	26/08/2020										
Sample Type	Soil	Soil										
Batch Number	1	1										
Date of Receipt	29/08/2020	29/08/2020										
VOC MS												
Dichlorodifluoromethane	<2	<2									<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #	<2	<2									<2	ug/kg	TM15/PM10
Chloromethane #	<3	<3									<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2									<2	ug/kg	TM15_A/PM10
Bromomethane	<1	<1									<1	ug/kg	TM15/PM10
Chloroethane #	<2	<2									<2	ug/kg	TM15/PM10
Trichlorofluoromethane #	<2	<2									<2	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<6	<6									<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	<30	<30									<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3									<3	ug/kg	TM15/PM10
1,1-Dichloroethane #	<3	<3									<3	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3									<3	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4									<4	ug/kg	TM15/PM10
Bromochloromethane #	<3	<3									<3	ug/kg	TM15/PM10
Chloroform #	<3	<3									<3	ug/kg	TM15/PM10
1,1,1-Trichloroethane #	<3	<3									<3	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3									<3	ug/kg	TM15/PM10
Carbon tetrachloride #	<4	<4									<4	ug/kg	TM15/PM10
1,2-Dichloroethane #	<4	<4									<4	ug/kg	TM15/PM10
Benzene #	<3	<3									<3	ug/kg	TM15/PM10
Trichloroethene (TCE) #	<3	<3									<3	ug/kg	TM15/PM10
1,2-Dichloropropane #	<6	<6									<6	ug/kg	TM15/PM10
Dibromomethane #	<3	<3									<3	ug/kg	TM15/PM10
Bromodichloromethane #	<3	<3									<3	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4									<4	ug/kg	TM15/PM10
Toluene #	<3	<3									<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3									<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #	<3	<3									<3	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3									<3	ug/kg	TM15/PM10
1,3-Dichloropropane #	<3	<3									<3	ug/kg	TM15/PM10
Dibromochloromethane #	<3	<3									<3	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3									<3	ug/kg	TM15/PM10
Chlorobenzene #	<3	<3									<3	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #	<3	<3									<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3									<3	ug/kg	TM15/PM10
m/p-Xylene #	<5	<5									<5	ug/kg	TM15/PM10
o-Xylene #	<3	<3									<3	ug/kg	TM15/PM10
Styrene	<3	<3									<3	ug/kg	TM15_A/PM10
Bromoform	<3	<3									<3	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3									<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #	<3	<3									<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2									<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #	<4	<4									<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4									<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3									<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3									<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3									<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5									<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6	<6									<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4	<4									<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	<4									<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #	<4	<4									<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4									<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4									<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #	<4	<4									<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4									<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7									<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4	<4									<4	ug/kg	TM15/PM10
Naphthalene	<27	<27									<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7									<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	109	107									<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	118	112									<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: OHES Environmental

Reference: 6114

Location: Horton Quarry

Contact: Stacey Higgs

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	EPH Interpretation
20/11605	1	TP1	0.55	1-2	No interpretation possible
20/11605	1	TP2	0.65	3-4	No interpretation possible
20/11605	1	TP3	0.90	5-6	No interpretation possible
20/11605	1	TP4	0.20	7-8	No interpretation possible
20/11605	1	BH2	3.50	9-10	No interpretation possible
20/11605	1	BH1	0.50	11-12	No interpretation possible

Client Name: OHES Environmental
Reference: 6114
Location: Horton Quarry
Contact: Stacey Higgs

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
20/11605	1	TP4	0.20	8	02/09/2020	**General Description (Bulk Analysis)**	Soil/Stones
					02/09/2020	**Asbestos Fibres**	NAD
					02/09/2020	**Asbestos ACM**	NAD
					02/09/2020	**Asbestos Type**	NAD
					02/09/2020	**Asbestos Level Screen**	NAD

Client Name: OHES Environmental
Reference: 6114
Location: Horton Quarry
Contact: Stacey Higgs

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 20/11605						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 20/11605

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 20/11605

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM16	Modified USEPA 8270D v5:2014. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes

EMT Job No: 20/11605

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM16	Modified USEPA 8270D v5:2014. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993 (comparabl	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 First edition (2006)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
NONE	No Method Code	NONE	No Method Code			AD	Yes
TM15_A	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

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OHES Environmental
Unit 3, Forest Court
Off Fishponds Road
Wokingham
Berkshire
RG41 2FD

Attention :	Stacey Higgs
Date :	9th September, 2020
Your reference :	6114
Our reference :	Test Report 20/11862 Batch 1 Schedule A
Location :	Manor Farm
Date samples received :	4th September, 2020
Status :	Final report
Issue :	1

Two samples were received for analysis on 4th September, 2020 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

[redacted]

Bruce Leslie
Project Manager

Client Name: OHES Environmental
Reference: 6114
Location: Manor Farm
Contact: Stacey Higgs
EMT Job No: 20/11862

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-6	7-12									LOD/LOR	Units	Method No.
Sample ID	BH1	BH2											
Depth													
COC No / misc													
Containers	V G	V G											
Sample Date	02/09/2020	02/09/2020											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	04/09/2020	04/09/2020											
MTBE #	<5	<5									<5	ug/l	TM36/PM12
Benzene #	<5	<5									<5	ug/l	TM36/PM12
Toluene #	<5	<5									<5	ug/l	TM36/PM12
Ethylbenzene #	<5	<5									<5	ug/l	TM36/PM12
m/p-Xylene #	<5	<5									<5	ug/l	TM36/PM12
o-Xylene #	<5	<5									<5	ug/l	TM36/PM12
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10									<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10									<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10									<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5									<5	ug/l	TM5/PM16/PM30
>C12-C16 #	<10	<10									<10	ug/l	TM5/PM16/PM30
>C16-C21 #	<10	<10									<10	ug/l	TM5/PM16/PM30
>C21-C35 #	<10	<10									<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35 #	<10	<10									<10	ug/l	TM5/TM36/PM12/PM16/PM30
Aromatics													
>C5-EC7 #	<10	<10									<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10									<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10									<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5									<5	ug/l	TM5/PM16/PM30
>EC12-EC16 #	<10	<10									<10	ug/l	TM5/PM16/PM30
>EC16-EC21 #	<10	<10									<10	ug/l	TM5/PM16/PM30
>EC21-EC35 #	<10	<10									<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35 #	<10	<10									<10	ug/l	TM5/TM36/PM12/PM16/PM30
Total aliphatics and aromatics(C5-35) #	<10	<10									<10	ug/l	TM5/TM36/PM12/PM16/PM30

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: OHES Environmental

Reference: 6114

Location: Manor Farm

Contact: Stacey Higgs

Matrix : Liquid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	EPH Interpretation
20/11862	1	BH1		1-6	No interpretation possible
20/11862	1	BH2		7-12	No interpretation possible

Client Name: OHES Environmental
Reference: 6114
Location: Manor Farm
Contact: Stacey Higgs

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 20/11862						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 20/11862

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 20/11862

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE re	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

EMT Job reference 20/11605 Batch 1 Schedule A - Horton Quarry 6114 (Asbestos Screen Results) **Please supply a PO before the due date** [Scanned]

Reply | Reply All | Forward

Wed 02/09/2020

Asbestos_Notification.Deeside@element.com
To Stacey Higgs; Asbestos_Notification.Deeside@element.com

Dear Stacey,

Some samples recently received from Horton Quarry, our reference 20/11605, have undergone analysis for asbestos.

The samples in question are as follows :

Sample ID	Depth	Sample Numbers	Dry Sample Testing	Analyte	Result
TP4	0.20	7-8		General Description (Bulk Analysis)	Soil/Stones
				Asbestos Fibres	No Asbestos Detected
				Asbestos ACM	No Asbestos Detected
				Asbestos Type	No Asbestos Detected
				Asbestos Level Screen	No Asbestos Detected

If you have any queries please don't hesitate to contact your Project Manager, Phil Sommerton or Bruce Leslie.

Kind regards

APPENDIX 9

TIER 1 SCREENING SHEETS

Client:	Finsco Property Company
Location:	Hornton Quarry
Job Number:	6114
Risk Assessment:	H Health (Commercial)

Determinant	Tier 1 Screening Level (Human Health Commercial) Based on 2.5% SOM.	Location, Depth and Concentration (mg/kg)					
		TP1	TP2	TP3	TP4	BH2	BH1
		0.55	0.65	0.90	0.20	3.5	0.50
Heavy Metals / Metalloids							
Arsenic	640*	-	-	-	156.2	38.4	-
Barium	22000	-	-	-	26	38	-
Beryllium	12*	-	-	-	6.8	1.9	-
Cadmium	190*	-	-	-	<0.1	<0.1	-
Chromium	8600*	-	-	-	272.3	70.8	-
Hexavalent Chromium	33*	-	-	-	<0.3	<0.3	-
Copper	68000*	-	-	-	<1	22	-
Lead	2330	-	-	-	7	17	-
Mercury	1100*	-	-	-	<0.1	<0.1	-
Nickel	980*	-	-	-	87.9	49.8	-
Selenium	12000*	-	-	-	1	<1	-
Vanadium	9000*	-	-	-	541	85	-
Zinc	730000*	-	-	-	240	113	-
TPH CWG							
TPH-CWG - Aliphatic >EC5 - EC6	5900	-	<0.1	-	-	<0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	17000	-	<0.1	-	-	<0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	4800	-	<0.1	-	-	<0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	23000	-	<0.2	-	-	<0.2	-
TPH-CWG - Aliphatic >EC12 - EC16	82000	-	<4	-	-	<4	-
TPH-CWG - Aliphatic >EC16 - EC21	1700000*	-	<7	-	-	<7	-
TPH-CWG - Aliphatic >EC21 - EC35	1700000*	-	<7	-	-	<7	-
TPH-CWG - Aromatic >EC8 - EC10	8100	-	<0.1	-	-	<0.1	-
TPH-CWG - Aromatic >EC10 - EC12	28000	-	<0.2	-	-	<0.2	-
TPH-CWG - Aromatic >EC12 - EC16	37000	-	<4	-	-	<4	-
TPH-CWG - Aromatic >EC16 - EC21	28000*	-	<7	-	-	<7	-
TPH-CWG - Aromatic >EC21 - EC35	28000*	-	<7	-	-	<7	-
BTEX/MTBE							
MTBE	13000**	-	<0.002	-	-	<0.005	-
Benzene	47*	-	<0.003	-	-	<0.005	-
Toluene	110000*	-	<0.003	-	-	<0.005	-
Ethylbenzene	13000*	-	<0.003	-	-	<0.005	-
m/p xylene	14000*	-	<0.005	-	-	<0.005	-
o-xylene	15000*	-	<0.003	-	-	<0.005	-
Banded EPH							
EPH >(C8 - C10)	4800	<5	-	<5	<5	-	<5
EPH >(C10 - C12)	23000	<10	-	<10	<10	-	<10
EPH >(C12 - C16)	37000	<10	-	<10	<10	-	<10
EPH >(C16 - C21)	28000*	<10	-	<10	<10	-	<10
EPH >(C21 - C40)	28000*	44	-	<10	78	-	<10
PAH's							
Fluoranthene#	23000	-	<0.01	-	0.024	-	-
Pyrene#	54000	-	<0.01	-	0.022	-	-
Benzo(a)anthracene	170	-	<0.01	-	0.041	-	-
Chrysene	350	-	<0.01	-	0.018	-	-
Benzo(bk)fluoranthene	NV	-	<0.01	-	0.029	-	-
Benzo(a)pyrene	35	-	<0.01	-	0.016	-	-
Benzo(ghi)perylene	4,000	-	<0.01	-	0.016	-	-
Benzo(b)fluoranthene	44	-	<0.01	-	0.021	-	-

***LQM/CIEH S4ULs**
****CL:AIRE/AGS Soil GAC**
*****DEFRA C4SL**
Exceedance of soil saturation level (Potential NAPL Present)
Exceedance of Tier 1 GAC (Commercial)

OHES ENVIRONMENTAL 0870 240 3329 www.ohes.co.uk	**Client:**	**Finsco Property Company**
	Site:	**Hornton Quarry**
	Job Number:	**6114**
	Risk Assessment:	**Groundwater Criteria**

Determinant	Tier 1 GAC groundwater (µg/l)	Location and Concentration (µg/l)	
		BH1	BH2
BTEX/MTBE			
Benzene	1***	<5	<5
Toluene	700**	<5	<5
Ethylbenzene	300**	<5	<5
p & m-xylene	500**	<5	<5
o-xylene	500**	<5	<5
MTBE (Methyl Tertiary Butyl Ether)	15*	<5	<5
TPH CWG			
TPH-CWG - Aliphatic >C5 - C6	1500**	<10	<10
TPH-CWG - Aliphatic >C6 - C8	1500**	<10	<10
TPH-CWG - Aliphatic >C8 - C10	300**	<10	<10
TPH-CWG - Aliphatic >C10 - C12	300**	<5	<5
TPH-CWG - Aliphatic >C12 - C16	300**	<10	<10
TPH-CWG - Aliphatic >C16 - C21	10***	<10	<10
TPH-CWG - Aliphatic >C21 - C35	10***	<10	<10
TPH-CWG - Aromatic >C5 - C7	1***	<10	<10
TPH-CWG - Aromatic >C7 - C8	700**	<10	<10
TPH-CWG - Aromatic >C8 - C10	300**	<10	<10
TPH-CWG - Aromatic >C10 - C12	90**	<5	<5
TPH-CWG - Aromatic >C12 - C16	90**	<10	<10
TPH-CWG - Aromatic >C16 - C21	90**	<10	<10
TPH-CWG - Aromatic >C21 - C35	90**	<10	<10
Total TPH	10***	<10	<10

*WHO taste and odour threshold

**WHO Drinking Water Guideline (2011)

***UK Drinking Water Standards

APPENDIX 10

GEOTECHNICAL LABORATORY RESULTS

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W: www.element.com

OHES Environmental
Unit 3, Forest Court
Off Fishponds Road
Wokingham
Berkshire
RG41 2FD

Attention :	Stacey Higgs
Date :	7th September, 2020
Your reference :	6114
Our reference :	Test Report 20/11605 Batch 1 Schedule B
Location :	Horton Quarry
Date samples received :	29th August, 2020
Status :	Final report
Issue :	1

Six samples were received for analysis on 29th August, 2020 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

[redacted]

Phil Sommerton BSc
Senior Project Manager

Element Materials Technology

Client Name: OHES Environmental
Reference: 6114
Location: Horton Quarry
Contact: Stacey Higgs
EMT Job No: 20/11605

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-2	5-6											
Sample ID	TP1	TP3											
Depth	0.55	0.90											
COC No / misc													
Containers	V J	V J											
Sample Date	26/08/2020	26/08/2020											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	29/08/2020	29/08/2020											

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Sulphur as S	0.02	0.01									<0.01	%	TM30/PM15
Total Sulphate as SO4 BRE	0.03	0.03									<0.01	%	TM50/PM29
Magnesium	0.0015	0.0008									<0.0001	g/l	TM30/PM20
Sulphate as SO4 (2:1 Ext) #	0.0298	0.0251									<0.0015	g/l	TM38/PM20
pH #	8.17	8.29									<0.01	pH units	TM73/PM11

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: OHES Environmental
Reference: 6114
Location: Horton Quarry
Contact: Stacey Higgs

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 20/11605						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 20/11605

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

EMT Job No: 20/11605

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993 (comparabl	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.			AD	Yes
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No

Element Materials Technology
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OHES Environmental
Unit 3, Forest Court
Off Fishponds Road
Wokingham
Berkshire
RG41 2FD

Attention :	Stacey Higgs
Date :	9th September, 2020
Your reference :	6114
Our reference :	Test Report 20/11862 Batch 1 Schedule B
Location :	Manor Farm
Date samples received :	4th September, 2020
Status :	Final report
Issue :	1

Two samples were received for analysis on 4th September, 2020 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

[redacted]

Phil Sommerton BSc
Senior Project Manager

Element Materials Technology

Client Name: OHES Environmental
Reference: 6114
Location: Manor Farm
Contact: Stacey Higgs
EMT Job No: 20/11862

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

EMT Sample No.	1-6	7-12											
Sample ID	BH1	BH2											
Depth													
COC No / misc													
Containers	V G	V G											
Sample Date	02/09/2020	02/09/2020											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	04/09/2020	04/09/2020											

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Dissolved Magnesium #	5.1	5.5									<0.1	mg/l	TM30/PM14
Total Dissolved Sulphur as S	16350	12600									<10	ug/l	TM30/PM14
Sulphate as SO4 #	54.4	43.4									<0.5	mg/l	TM38/PM0
pH #	7.50	7.53									<0.01	pH units	TM73/PM0

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: OHES Environmental
Reference: 6114
Location: Manor Farm
Contact: Stacey Higgs

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 20/11862						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 20/11862

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 20/11862

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified				
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993 (comparabl	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	OHES (Oil & Hazardous Environmental Services)	Client Reference:	6114
Client Address:	Adler And Allan Ltd, Wassage Way, Hampton Lovett Estate, Droitwich, WR9 0NX	Job Number:	20-28125
		Date Sampled:	Not Given
		Date Received:	02/09/2020
Contact:	Stacey Higgs	Date Tested:	11/09/2020
Site Address:	Hornton Quarry	Sampled By:	Not Given

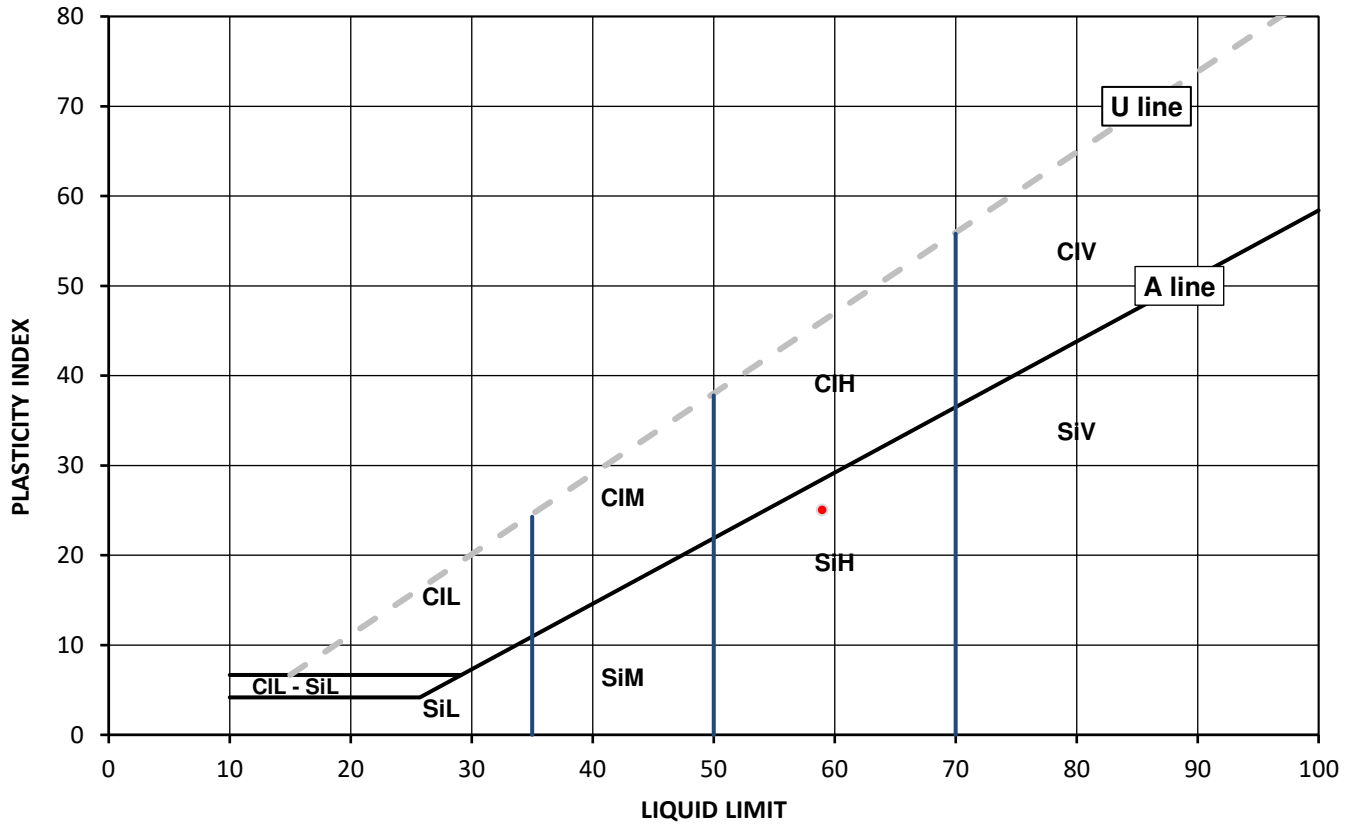
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1610963	Depth Top [m]:	0.50
Hole No.:	SA2	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Soil Description:	Yellowish brown very clayey SANDSTONE		

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
28	59	34	25	57



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Test carried out on clod of clay as per client request

[redacted]

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

Date Reported: 18/09/2020

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	OHES (Oil & Hazardous Environmental Services)	Client Reference:	6114
Client Address:	Adler And Allan Ltd, Wassage Way, Hampton Lovett Estate, Droitwich, WR9 0NX	Job Number:	20-28125
		Date Sampled:	Not Given
		Date Received:	04/09/2020
Contact:	Stacey Higgs	Date Tested:	14/09/2020
Site Address:	Hornton Quarry	Sampled By:	Not Given

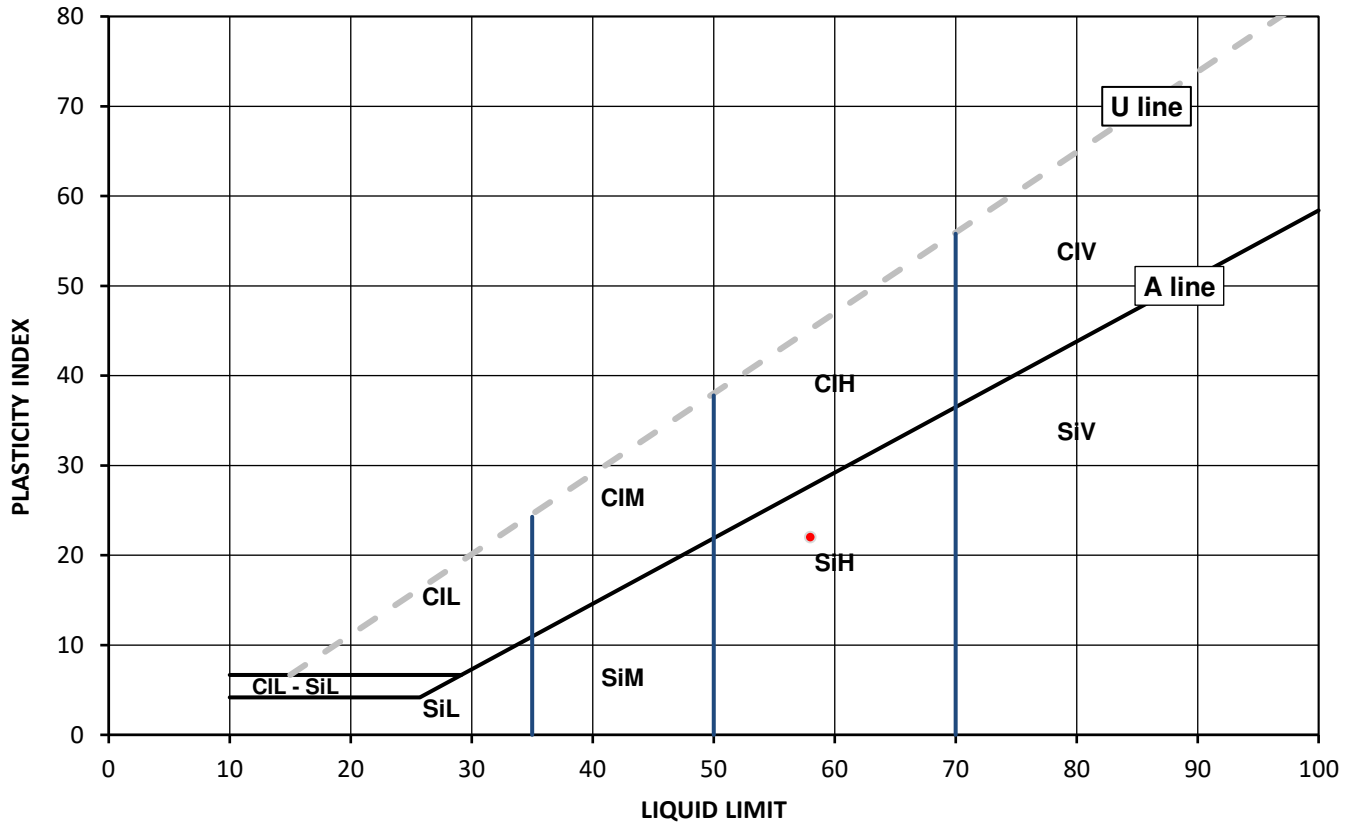
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1616585	Depth Top [m]:	0.50
Hole No.:	SA2	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Soil Description:	Brown gravelly slightly sandy silty CLAY		

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
24	58	36	22	62



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Test carried out on clod of clay as per client request

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

Date Reported: 18/09/2020

GF 232.10

SUMMARY REPORT

Summary of Classification Test Results

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with:

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: OHES (Oil & Hazardous Environmental Services)

Client Address: Adler And Allan Ltd, Wassage Way, Hampton Lovett Estate, Droitwich, WR9 0NX

Contact: Stacey Higgs

Site Address: Hornton Quarry

Client Reference: 6114
Job Number: 20-28125
Date Sampled: Not Given
Date Received: 02/09/2020
Date Tested: 11/09 - 14/09/2020
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top m	Depth Base m	Type			%	%	% Passing 425um %	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3	%		
1610963	SA2	Not Given	0.50	Not Given	B	Yellowish brown very clayey SANDSTONE	Atterberg 1 Point	28		57	59	34	25						
1616585	SA2	Not Given	0.50	Not Given	B	Brown gravelly slightly sandy silty CLAY	Atterberg 1 Point	24		62	58	36	22						

Note: # Non accredited; NP - Non plastic

Comments: Test carried out on clod of clay as per client request

Signed: [redacted]

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

Date Reported: 18/09/2020

GF 234.12

SUMMARY REPORT

Summary of Point Load Strength Index Tests Results

Tested in Accordance with: ISRM: 2007, pages 125-132

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Client: OHES (Oil & Hazardous Environmental Services)

Client Address: Adler And Allan Ltd, Wassage Way, Hampton Lovett Estate, Droitwich, WR9 0NX

Contact: Stacey Higgs

Site Address: Hornton Quarry

Client Reference: 6114
Job Number: 20-28125
Date Sampled: Not Given
Date Received: 02/09/2020
Date Tested: 17/09/2020
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks # (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter, De	Point Load Strength Index	
		Reference	Depth Top	Depth Base	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne	W	Dps	Dps'			Is	Is(50)
			m	m								mm	mm	mm	mm	kN	mm	MPa	MPa
1610963	SA2	Not Given	0.50	Not Given	B	Yellowish brown very clayey SANDSTONE	WC = 12.9%, Test carried out on SANDSTONE as per client request.	1	I	U	YES	46.1	72.7	45.0	38.0	4.1	59.3	1.17	1.27
1610963	SA2	Not Given	0.50	Not Given	B	Yellowish brown very clayey SANDSTONE	WC = 12.9%, Test carried out on SANDSTONE as per client request.	2	I	U	YES	35.2	58.4	31.0	28.0	1.9	45.6	0.93	0.89
1610963	SA2	Not Given	0.50	Not Given	B	Yellowish brown very clayey SANDSTONE	WC = 12.9%, Test carried out on SANDSTONE as per client request.	3	I	U	YES	40.5	54.2	39.0	35.0	4.3	49.1	1.77	1.76

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random;
Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P;
Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Comments:

Signed: [redacted]

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

Date Reported: 18/09/2020

GF 134.12

SUMMARY REPORT

Summary of Point Load Strength Index Tests Results

Tested in Accordance with: ISRM: 2007, pages 125-132

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Client: OHES (Oil & Hazardous Environmental Services)

Client Address: Adler And Allan Ltd, Wassage Way,
Hampton Lovett Estate, Droitwich,
WR9 0NX

Contact: Stacey Higgs

Site Address: Hornton Quarry

Client Reference: 6115
Job Number: 20-28127
Date Sampled: Not Given
Date Received: 02/09/2020
Date Tested: 17/09/2020
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks # (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter, De	Point Load Strength Index	
		Reference	Depth Top	Depth Base	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne	W	Dps	Dps'			Is	Is(50)
			m	m								mm	mm	mm	mm	kN	mm	MPa	MPa
1610965	TP 3	Not Given	0.00	Not Given	B	Yellowish brown LIMESTONE	WC = 4.0%	1	I	U	YES	67.8	87.9	55.0	46.0	16.1	71.8	3.12	3.67
1610965	TP 3	Not Given	0.00	Not Given	B	Yellowish brown LIMESTONE	WC = 4.0%	2	I	U	YES	52.6	66.8	50.0	35.0	8.6	54.6	2.90	3.01
1610965	TP 3	Not Given	0.00	Not Given	B	Yellowish brown LIMESTONE	WC = 4.0%	3	I	U	YES	65.1	93.7	55.0	41.0	16.5	69.9	3.37	3.92
1610965	TP 3	Not Given	0.00	Not Given	B	Yellowish brown LIMESTONE	WC = 4.0%	4	I	U	YES	57.4	69.4	48.0	40.0	10.2	59.5	2.89	3.13
1610965	TP 3	Not Given	0.00	Not Given	B	Yellowish brown LIMESTONE	WC = 4.0%	5	I	U	YES	41.3	58.2	38.0	28.0	6.2	45.6	2.99	2.87
1610965	TP 3	Not Given	0.00	Not Given	B	Yellowish brown LIMESTONE	WC = 4.0%	6	I	U	YES	55.6	84.8	66.0	41.0	13.2	66.5	2.98	3.38

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random;
Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P;
Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Comments:

Signed:

[redacted]

Szczepan Bielatowicz
PL Deputy of Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 18/09/2020

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