

SCIENCE MUSEUM GROUP

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Phase 1 Geotechnical and
Geoenvironmental Desk Study

SMG One Collection Facility, Wroughton

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Geoenvironmental Desk Study
Science Museum Group

November 2017



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Executive summary

Location	RAF Wroughton, located 1km south of the village of Wroughton and 5km south of Swindon, the site's postcode is SN4 9NU.
Previous & Current Site Use	The site was agricultural land until 1940 when a military airfield was built, this was decommissioned and the site was bought by the Science Museum Group (SMG) in 2000. The site's hangers are used as storage for the SMG and the runways are currently being used as temporary storage for construction materials as part of the Great Western Electrification Programme.
Proposed Development	The SMG are looking to expand their storage capacity through the building of a large new warehouse, the "One Collection Facility". This will be built on the unused green fields between the old runways. It will require foundations, new hardstanding and a soakaway.
Background Information	Only used as agricultural land and as an airfield. Landfill – None locally but one within 1km of the site boundary. Flood – Not considered to be at risk of flooding from the rivers or the sea. No infilled non-water or water infilled land points within 1km of the site.
Ground Conditions and Geology	Historic borehole data suggests a thin layer (0.15m) of topsoil across the site, with some made ground expected near the runways. This is underlain by the Zig Zag Chalk Formation to a depth of up to 55m bgl. Weathering of the chalk is unknown and shall be investigated by a geophysics survey. Standing groundwater has been historically found between 39 and 43m bgl, although as the records are very old this will need to be confirmed as part of the proposed GI.
Foundations, Floor Slabs	Traditional strip/ pad foundations are considered to be potentially suitable. Foundations may need to be deepened so that they are founded on non-weathered chalk. The superstructure should be designed to accommodate any differential settlements in the chalk. Reinforced ground bearing slabs are likely to be suitable for proposed construction following the removal of any topsoil. Such slabs should be constructed with appropriate reinforcement and induced joints to accommodate potential differential settlement.
Earthworks	No significant earthworks are expected on site.
Drainage	Soakaways are expected to be suitable for the proposed development. Care should be taken due to the chalk being an aquifer and due to the risk of dissolution features. It is proposed that the soakaway is situated in a separate field to the building.
Pavements	Hardstanding will be cut into the chalk, a CBR value of greater than 15% is recommended. If the chalk is reworked the CBR value should be reduced to 8%. A 450mm pavement thickness should be adopted to avoid frost damage.
Contamination	The preliminary CSM has identified potential contamination risks relating to the site related to potential contamination from historical and current land activities which may be present within Made Ground, if present and shallow natural soils underlying the site. Further consideration of these potential risks is required as part of the proposed intrusive investigation. The proposed investigation should include soil sampling and analysis to classify the environmental characteristics of the soils, inform a site specific generic quantitative risk assessment (GQRA) and to aid preliminary waste characterisation for disposal / reuse of the proposed works arising.
Recommendations and Conclusions	Based on the information available, the site is generally suitable for the intended development, without significant problems anticipated. Additional investigation is advised: <ul style="list-style-type: none"> • A geophysical survey determining the extent of the chalk weathering, backed up by a ground investigation • Determining that groundwater is at an acceptable depth for soakaways and performing soakaway testing • Performing in-situ and laboratory testing to determine material properties

1. Introduction

1.1. General

RAF Wroughton is a decommissioned airfield located to the southwest of Swindon, the site and its location is shown in Appendix A. Since its decommission it has been bought by the Science Museum Group (SMG) who use the hangers for storage. The SMG are looking to expand their storage capacity through the building of a large new warehouse, which will be known as the “One Collection Facility”. This will be built on the unused green fields between the old runways. Atkins have been commissioned by the SMG to undertake a Phase 1 Geotechnical and Geoenvironmental Desk Study for the site.

The purpose of this report is to research and make an assessment of (without intrusive investigation) the environmental, geological, hydrogeological and hydrological conditions likely to be present at the site, and together with knowledge of the historic land use, develop an understanding of potential contamination risks that might exist or arise due to the potential future use of the site.

1.2. Structure of the Report

The Phase 1 Geotechnical and Geoenvironmental Desk Study has been structured as follows:

- Section 2 sets out the desk study findings and review of existing reports to establish the historical and current environmental setting of the site;
- Section 3 identifies the potential sources of contamination based on historical and current land uses both on the site and in the vicinity, the receptors to that contamination and the pathways between the two. These relationships are referred to as Potential Contaminant Linkages (PCL) and they form the preliminary Conceptual Site Model (CSM) for the site. A qualitative and quantitative risk assessment has also been carried out for the identified PCLs and is presented in this section;
- Section 4 summarises the ground conditions at the site based on review of existing information;
- Section 5 presents the preliminary engineering assessment for the site;
- Section 6 draws conclusions from the desk study and summarises the current gaps in the data;
- Section 7 comprises the preliminary Geotechnical Risk Register, to be updated as the scheme progresses;
- Section 8 provides recommendations for further work to be undertaken based on the report's findings
- Section 9 lists the references used in preparation of the report;

1.3. Limitations

This report is based on desk study information and third party intrusive ground investigation data. Atkins takes no responsibility over the accuracy of the third-party information

2. Desk Study

2.1. Sources of Information

The following sources of information have been used in preparation of this report

- Envirocheck report has been obtained which provides data on geology, hydrogeology, hydrology, flood risk, authorised and historical landfills, waste facilities, pollution incidents, environmental permits; water abstractions, discharge consents (1)
- British Geological Survey 1:63,360/ 1:50,000 geological map series, New Series, sheet no. 266 “Marlborough”, 1974, <http://www.largeimages.bgs.ac.uk/iip/mapsportal.html?id=1001761> (2)
- British Geological Survey Geoindex <http://mapapps2.bgs.ac.uk/geoindex/home.html>; (3)
- British Geological Survey Lexicon <http://www.bgs.ac.uk/lexicon/> (4)
- The Zetica Regional Unexploded Bomb (UXB) Risk Map for Wiltshire (5)
- CIRIA C574 - Engineering in Chalk, CIRIA 2002 (6)
- BRE Digest 365 Soakaway Design. (7)

2.2. Site Location

The site is located approximately 1km south of the village of Wroughton and 5km south of Swindon, see Figure A-1. The site is located on an old RAF military airfield which was built in 1940 and acquired by SMG in 2000. The development plot is predominately flat agricultural grassland, bordered by disused concrete runways. The concrete runways stretch to the edges of the plot and are connected by smaller perimeter roadways. A recent development of 73 hectares of solar panels now covers the western and southern parts of the main site.

The site address is Swindon, SN4 9NU and the Ordnance Survey national grid reference for the centre of the site is 413982, 179154.

An approximate site location plan is included in Appendix A.

2.3. Site Description

The site consists of a decommissioned military airfield built in 1940. The site is around 220 hectares in area, with the majority consisting of six large fields intersected by concrete runways. The southern three of these fields have been converted to solar farms, while the northern three are flat agricultural grassland. The northern part of the site is surrounded by recently planted trees. Parts of the site are bounded by electric fences due to the neighbouring pastoral fields. Photos of the site were taken during the site walkover; a photo of the prospective soakaway field is shown in Figure A-3 and a photo of the field where the One Collection Facility will be built is shown in Figure A-4.

The development plot for the One Collection Facility is in the northern section of the site, see Figure A-2. A feasibility study has determined that this location takes best advantage of level ground, proximity to services, existing road network and good likelihood of planning consent. The facility shall have a 20,000m² footprint and there is still freedom to optimise its exact position in the development plot. It is currently envisaged that the sites shall be drained by soakaways.

2.4. Surrounding Area

The surrounding area comprises the land uses summarised in Table 2-1.

Table 2-1 Summary of Surrounding Land Use

Direction	North	East	South	West
Surrounding Land Use	To the northwest of the plot are some disused hangers and a small wood. Wroughton is located 1km to the north.	To the east of the plot is the Swindon Karting Arena and two large buildings. Further east is the village of Overtown including a number of residential properties.	Beyond the solar farm there are hangers to the southwest and to the southeast there are more old RAF buildings and a racing company.	To the west of the site there is the SMG's Wroughton branch and two hangers. Beyond this is the A4361.

2.5. Site History

Historical development of the site and surrounding area has been determined using historical mapping provided in the Landmark Envirocheck Report which is included as Appendix C. A summary is provided below in Table 2-2.

Table 2-2 Historical Development

Year	Map	On-site	Off-site Development
1888-1889	OS County Series, Wiltshire 1:10,560	The site is located in undeveloped agricultural land. A residential property 'Rectory Cottage' is located in the far west of the site.	Wroughton Down farm is located approximately 200 m to the south of the site. A small area of woodland 'Clouts Woods' are located approximately 100 m north west. The site is shown to be surrounded by agricultural fields. 400 m west of the site is an unnamed road, with another small road located 900 m to the west. Where these two small roads meet there is a farm called Red Barn. A small unnamed road is located 550 m to the east of the site. Along this road, approximately 1 km to the south-east of the site, are the Hackpen Cottages and Hackpen Farm. A building called Lodge is located 750 m away to the north-east, just off Coombe Bottom. Wroughton is located just over 1km away from the site to the north-east.
1901	OS County Series, Wiltshire 1:10,560	No significant changes	Wroughton Down farm, 200 m south of the site, is renamed to Rectory Farm
1925	OS County Series, Wiltshire 1:10,560	No significant changes	Two springs are marked on the north-western edge of Clouts Wood 350 m north-west of the site. A watercourse flows north-west from the springs towards Wroughton.
1938	OS County Series, Wiltshire 1:10,560	Site not shown	No significant changes
1947 - 1950	Historical Aerial Photography, 1:10,560	From alternative sources, RAF Wroughton had been built by this date; however, from this photograph, it is not visible. The site appears to consist of fields. The Rectory Cottage has been demolished	600 m to the east of the site, new buildings have been built to the south of the 'Lodge' with dirt tracks or small roads surrounding them.

Year	Map	On-site	Off-site Development
1960	OS County Series, Wiltshire 1:10,000	Wroughton Airfield is named on map but not detailed.	Clouts Wood is smaller than in previous maps.
1973 - 1977	OS County Series, Wiltshire 1:10,000	Site not shown	Some new houses built in Wroughton as well as the construction of a reservoir, which is 1.5km to the northeast of the site.
1981 - 1987	OS County Series, Wiltshire 1:10,000	The north-western edge of the site is bounded by an access road. A runway splits two parts of site. Rest of site comprises some of the fields of Wroughton airfield.	Two large hangers are located 50 m to the north of the site. Two further hangers are located 500 m to the east of the site. Three large unnamed buildings and a cluster of smaller unnamed buildings are located to the southeast of the site at an approximate distance of 700 m to 1 km from the site. Two large unnamed joined buildings are located 1.1 km to the south of the site. Two hangers are located 700 m to the south-west of the site. To the west of the site, there are two hangers at a distance of 400 m and 500 m, adjacent to Red Barn Farm. There are more buildings to the south of the 'Lodge', 600 m east of the site, which is renamed as Thorney Park.
1988	OS County Series, Wiltshire 1:10,000	Site not shown	No significant changes
1999	OS County Series, Wiltshire 1:10,000	No significant changes	Approximately 40m north of the site, a new large unnamed building is located next to the hangers, which is named as a Science Museum
2006	OS County Series, Wiltshire 1:10,000	No significant changes	Further houses have been built in Wroughton, 1 km to the north of the site.
2017	OS County Series, Wiltshire 1:10,000	No significant changes	The bottom three fields of the airfield have been converted to solar farms; small access roads have been built around the field perimeters.

Source: Envirocheck Report 143521870_1_1

2.6. Historical Exploratory Hole Records

The BGS has records of some historical boreholes located near the site. These historical boreholes are summarised in the table below, and copies are included in Appendix B.

Table 2-3 Summary of Historical Boreholes

Reference	Year Drilled	Groundwater Level (m bgl)	Depth (m bgl)	Description
BGS ID: 401937 BGS Reference: SU17NW12 British National Grid (27799): 414600, 178800 Project: Regional Observation Borehole at Wroughton Airfield Distance from site: 700m SE	1972	43	76.9	00.0 – 55.0m Lower Chalk (all buff) 55.0 – 73.2m Upper Greensand Formation 73.2 – 76.9m Gault Formation
BGS ID: 402933 BGS Reference: SU17NW8 British National Grid (27700): 413360, 179620 Project: Well Boring at Markham Hill Distance from site: 750m NW	1927	37.8	56.4	00.0 – 00.2m Topsoil 00.2 – 11.0m Hard grey chalk 11.0 – 12.8m Chalk marl 12.8 – 21.3m Very hard chalk 21.3 – 32.3m Buff chalk marl 32.3 – 41.5m Greensand formation 41.5 – 56.4m Gault clay
BGS ID: 401921 BGS Reference: SU17NE74 British National Grid (27799): 415100, 179200 Project: Princess Alexandra Hospital, Wroughton Distance from site: 1150m E	1985	39	70	00.0 – 45.0m Lower Chalk 45.0 – 68.0m Upper Greensand Formation 68.0 – 70.0m Gault Formation

2.7. Geological Setting

2.7.1. Made Ground

There is no evidence for Made Ground in any of the information published by the British Geological Survey (BGS). It is however likely that there is Made Ground associated with the construction of the air base. From the site walkover, some Made Ground was observed around the edges of the runways.

Historical borehole BGS Reference: SU17NW8, see Section 2.6 and Figure B-3 noted 0.2 m of topsoil. From the site walkover and from aerial photos it is clear that the site is covered in grass, it is therefore likely that this topsoil cover extends across the site.

2.7.2. Superficial Geology

The BGS (8), Geology of Britain viewer indicates that there are no superficial deposits underlying the site. Further to this, the historical boreholes BGS Reference: SU17NE74 and SU17NW12 (shown in Section 2.6) also indicate the absence of superficial geology. Another historical borehole SU17NW8, at nearby Markham hill (750m away), indicates 150 mm of topsoil above the chalk strata.

2.7.3. Bedrock Geology

Available published information from the BGS (3) indicates that the site is underlain by the Zig Zag Chalk Formation. The BGS describes the Zig Zag Chalk Formation as mostly firm, pale grey to off-white blocky chalk with a lower part characterised by rhythmic alternations of marls and marly chalks with firm white chalk (4). Thin gritty, silty chalk beds act as markers in the sequence. The Zig Zag Chalk Formation is part of the lower, grey chalk found in the transitional chalk province (6). Three historic boreholes located on the Zig Zag Chalk Formation located 700-1150m from the site indicate that the formation extends to a maximum depth of 55 m below ground level (bgl). The Zig Zag Chalk Formation is underlain by a layer of the Upper Greensand Formation which based on historic boreholes varies in thickness from 9.2m – 18.2m. The Gault Formation underlies this, all of the historic boreholes end in the Gault Formation.

2.7.4. Structural Geology

Information from the BGS shows that there are no fault lines within 1 km of the site. (3)

2.8. Geological and Geotechnical Hazards

Information on ground stability hazards for the site, as assessed by the BGS, are presented in the Envirocheck Report (1) and the most significant are summarised in Table 2-4.

Table 2-4 Ground Stability Hazards on Site

Ground Condition Hazard	Risk Range
Potential for Collapsible Ground	Very low
Potential for Compressible Ground	No hazard
Potential for Ground Dissolution	No hazard
Potential for Landslide Ground	Low
Potential for Running Sand Ground	Very low to No Hazard
Potential for Shrinking or Swelling Clay Ground	No Hazard

Source: Envirocheck Report 143521870_1_1

The low level of risk links to the expected site ground conditions of medium to high density chalk. (6)

The Envirocheck Report indicates that there are no non-water potentially infilled land areas or water potentially infilled land points within 1 km of the site. (1)

2.8.1. Engineering in Chalk Hazards

CIRIA C574 – Engineering in Chalk outlines the following risks that are commonly encountered when building on chalk (6). These risks are more prevalent in low density, weaker chinks and are unlikely given the expected high density of the Zig Zag Chalk Formation on site:

- Compressibility of the chalk may lead to structural damage caused by differential settlement of the foundations.
- Dissolution features in the chalk can collapse leading to rapid settlement. Dissolution is a problem in all chalk but especially so in weaker chinks. Given the risk of dissolution features emerging, good drainage of the site and correct construction of soakaways is important.
- Frost heave occurring in the chalk leading to damage due to differential movement of the foundations

There are also the risks associated with flints.

- Collapse of underlying old mine workings
- Damage to foundations caused by young flints in the chalk dissolving the cement

In addition to these risks, with all chalk foundations there is the risk of collapse settlement occurring if groundwater pools under the footing. Even with the anticipated low groundwater level this still presents a risk that will require mitigation.

Given that many of the risks identified depend on the chalk characteristics, a thorough site investigation is required to analyse the chalk and the likelihood of these risks. The following further reading, recommended in CIRIA C574, may be considered appropriate to more accurately determine the level of certain risks:

- In identifying dissolution features the *Review of Instability due to Natural Cavities in Great Britain*, carried out for the Department of the Environment (Applied Geology, 1993)
- The occurrence of chalk and flint mines has been studied as part of the *Review of Mining Instability in Great Britain* for the Department of the Environment (Arup Geotechnics, 1990),

2.8.2. Aquifer Designation

Information from the Environment Agency, contained in the Envirocheck Report, indicates that the Zig Zag Chalk Formation that underlies the site is classified as a Principal Aquifer (1). This is defined by the

Environment Agency as “layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.” (9)

2.8.3. Groundwater Source Protection Zones

The Envirocheck Report indicates that the site is located within Zone 3 (total catchment) of a groundwater Source Protection Zone. (1)

2.8.4. Groundwater Vulnerability

The Envirocheck Report shows that the site is underlain by soils with a ‘High’ leaching potential, defined as ‘Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater’. (1)

2.9. Hydrology

2.9.1. Hydrological features

Ordnance Survey mapping shows the nearest surface water features to comprise an unnamed stream located approximately 100 m to the north of the site; a further unnamed stream is present approximately 300 m to the north of the site. (1)

2.9.2. Discharge consents and abstraction licenses

The Envirocheck Report indicates that there are no licensed discharge consents within 500 m of the site.

The Envirocheck Report indicates that there are no licensed groundwater or surface water abstractions within 500 m of the site. (1)

2.9.3. Flood risk

Environment Agency data indicates that the site is not located within an area at risk from flooding. (1)

2.10. Sensitive Land Uses

The Envirocheck Report indicates that Clouts Wood Site of Special Scientific Interest (SSSI) is located 68 m north-west of the site. (1)

2.11. Contemporary Trades, Commercial Services and Points of Interest

There are a number of contemporary trades, commercial services and points of interest within 1 km of the site with reference to information taken from the Envirocheck Report and from Google Maps (1), (10). These are listed in Table 2-5.

Table 2-5 Contemporary Trades, Commercial Services and Points of Interest

Name	Source/Type	Classification	Status	Estimated distance and direction from site
Meacam Spridgets	Envirocheck - Contemporary Trade Directory Entries	Classic Car Specialists	Active	567 m West
Vzion Blinds	Envirocheck - Contemporary Trade Directory Entries	Electric Motor Manufacturers	Inactive	715 m East
Equizone Ltd	Envirocheck - Contemporary Trade Directory Entries	Road Haulage Services	Inactive	876 m south-east
Tanks	Envirocheck - Point of Interest – Manufacturing and Production	Industrial Features	Unknown	198 m North 208 m North 210 m North 391 m West

				439 m East 442 m East 459 m East 757 m South-west 955 m North
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Source: Envirocheck Report 143521870_1_1

2.12. Landfill & Waste

The Envirocheck Report indicates that there are no current or historical landfills on the site (1). There is one historical landfill site within 1 km of the site, as summarised in Table 2-6.

Table 2-6 Landfill and Water Sites

Name	Type	Location	First input	Last input	Distance from site
RNAY Wroughton	Historical Landfill	Not Supplied	December 1939	Not Supplied	155 m West

Source: Envirocheck Report 143521870_1_1

2.13. Records on Mines and Mineral Deposits

The Envirocheck Report indicates that there are is one BGS Recorded Mineral Sites located within 1 km of the site [1], as summarised in Table 2-7 below:

Table 2-7 Mines and Mineral Deposit Locations

Name	Type	Location	Commodity	Status	Distance from site
Rectory Farm Quarry	Open cast	Not Supplied	Chalk	Ceased	222 m South-west

Source: Envirocheck Report 143521870_1_1

The Coal Authority records indicate that the site resides within an area 'that might not be affected by coal mining'.

2.14. Fuel Stations

The Envirocheck Report records one active fuel station is located 641 m from the site. (1)

2.15. Radon Gas

The BGS reports that the northern half of the site is in an area of elevated radon potential, with 1 – 3% of homes estimated to be above the Action Level. The southern half of the site is in the lowest band of radon potential with less than 1% of homes above the Action Level. (3)

2.16. Unexploded Ordnance

The Zetica Regional Unexploded Bomb (UXB) Risk Map for Wiltshire indicates that the site is located in an area of low risk of encountering UXBs (5). Given that the site was an RAF air base in during the Second World War the risk on site may be significantly higher than for the surrounding areas due to specific targeting of the base and due to ammunition stores from the base. Hence, there is a potentially significant risk of encountering UXO and it is recommended that a preliminary site specific UXB assessment is carried out for the site prior to intrusive works/ investigation.

3. Preliminary Conceptual Site Model and Risk Assessment

3.1. Introduction

Land contamination is assessed through the identification and assessment of Potential Contaminant Linkages (PCLs). The approach adopted by Atkins is in accordance with the Contaminated Land Exposure Assessment (CLEA) model produced by Defra and the Environment Agency and as outlined in Contaminated Land Report (CLR) 11 (11). CLR11 provides a technical framework for identifying and remediating contamination through the application of a risk management process. The question of whether risk is unacceptable in any particular case involves not only scientific and technical assessments, but also appropriate criteria by which to judge the risk and conclude the level of risk which would be unacceptable.

This assessment involves the development of a conceptual site model (CSM) which describes the source-pathway-receptor relationship between potential sources of contamination and associated contaminants from both on-site and off-site sources, receptors to such contamination (humans, controlled water (groundwater/surface water), ecological systems (flora and fauna of conservation designations) and property) and potential pathways between the two. If all three are present or considered likely to be present, they are described as PCLs which can be subject to the risk assessment process.

A 'Tier 1 Preliminary Risk Assessment' has been completed in accordance with CLR11 and has been based on the desk study information described in the preceding sections.

3.2. Potential Sources, Pathways, Receptors

3.2.1. Potential Contamination Sources

A number of potential on-site and off-site sources of contamination have been identified as summarised below.

3.2.1.1. On-Site

- Made Ground, potentially containing a range of inorganic and organic contaminants associated with development of the site and surrounding roads and infrastructure;
- imported fill of unknown provenance used during site development which may contain a range of inorganic and organic contaminants;
- potential spills and leakage of fuels and oils associated with the sites former use as an RAF airfield; and,
- potentially contaminated groundwater.

3.2.1.2. Off-site

Contaminants from off-site sources have to migrate to the site, generally in windblown, soil-derived dust, entrained in surface water run-off, in migrating groundwater and as migrating ground/landfill gas and vapours. The following potential off-site sources are considered to have the potential to affect the site with reference to review of historical plans and the trade directory as contained within the Envirocheck report.

- off-site sources associated with the former RAF afield surrounding the site;
- historical landfill 155 m west of the site is a potential source of ground gas and potentially contaminated groundwater; and,
- a number of tanks are present surrounding the site; the construction or contents are unknown. Dependent on the contents, these features may be a potential source of organic contamination from spills and leakage.

3.2.2. Potential Receptors to Contamination

3.2.2.1. Human

- current and future site users, comprising site workers, site visitors and future construction / maintenance workers;
- site workers in excavations; and,
- off-site adjacent site users, comprising workers and visitors of adjacent commercial properties.

3.2.2.2. Controlled Waters

- unnamed streams 100 m and 300 m north of the site; and,
- groundwater in the bedrock Chalk Principal Aquifer.

3.2.2.3. Property

- existing and future below ground infrastructure in pavements, hardstanding, roads, and future construction projects.

3.2.3. Potential Pathways

The following potentially viable pathways have been identified:

3.2.3.1. Human Health

Human receptors could be exposed to potential contamination by the following pathways:

- dermal contact / ingestion of contaminants in soil and soil-derived dust;
- dermal contact / ingestion of contaminants in groundwater within excavations; and
- migration of contaminants onto site from off-site sources, via soil derived dust followed by inhalation / ingestion; and
- off-site migration of contaminants in soil derived dust followed by inhalation / ingestion.

It has been assumed that personal protective equipment (PPE) and health & safety best practices will be adopted during the construction works and therefore acute risks to construction workers / site visitors have not been considered further.

3.2.3.2. Controlled Waters

Controlled waters receptors may be affected by potential contamination by the following pathways:

- leaching or dissolution of contaminants soils and subsequent migration of contaminants in groundwater;
- lateral migration of contaminated groundwater; and,
- lateral migration of dissolved phase contaminants via preferential pathways such as drains, pipes, boreholes and trenches.

3.2.3.3. Property Receptors

Property receptors may be affected by direct contact of contaminated soils/perched water with infrastructure, services and structures and subsequent chemical attack.

3.3. Preliminary Conceptual Site Model

In order to identify potentially unacceptable risks to human health, controlled waters and property receptors, a preliminary CSM has been produced and is summarised in Table 3-1. A preliminary qualitative assessment of the identified PCLs has been undertaken, in general accordance with the CIRIA C552 report (12) with the PCLs given a risk rating based on the current condition of the proposed works areas and the proposed end use.

Table 3-1 Land Contamination Qualitative Risk Assessment

Source	Pathway	Receptor	Probability	Consequence	Risk
On-Site: Made Ground and imported fill of unknown provenance, potentially containing a range of contaminants,	Dermal contact with and ingestion of contaminants in soil and soil-derived dust; Dermal contact / ingestion of contaminants in groundwater within excavations.	Human receptors on-site: construction/maintenance workers.	Likely On-site future construction/maintenance workers may be in direct contact with contaminants because they may be required to excavate and handle soil and excavate below the groundwater table. However, robust risk assessment is required to identify appropriate personal protective equipment and suitable working methods to protect these receptors, in accordance with current guidance and recommended good working practices, which will reduce the likelihood to moderate/low.	Medium	Moderate Risk Reduced to Moderate/Low through use of PPE
Potential spills and leakage of fuels and oils associated with the sites former use as an RAF airfield	Dermal contact with and ingestion of contaminants in soil and soil-derived dust.	Human receptors on-site: future users of and visitors to the site.	Low Likelihood Ground cover following the proposed development is anticipated to be a combination of building footprints, car parks, hardstanding and soft landscaping. Building footprints and hardstanding will minimise the potential for direct contact with potentially contaminated soils by site users. Areas of landscaping are unlikely to be frequently accessed by site users and visitors. The potential for dust generation is low considering soft-standing is likely to be vegetated.	Medium	Moderate / Low risk
	Dermal contact with contaminants in windblown, soil-derived dust and entrained in surface water run-off from areas where soil (and contaminant) is exposed; and, Off-site migration of contaminants in soil derived dust followed by inhalation / ingestion.	Human receptors off-site: users of commercial / industrial properties and members of the public accessing off-site land.	Unlikely Soils across the site are likely to be encapsulated beneath hardstanding and or bound by grass/vegetation in landscaped areas. Therefore, potential for dust generation and subsequent migration off-site is low.	Medium	Low risk
	Leaching or dissolution of contaminants soils and subsequent migration of contaminants in groundwater	Controlled Waters: groundwater in the Chalk Principal Aquifer	Low likelihood Ground cover following the proposed development is anticipated to be a combination of building footprints, car parks, hardstanding and soft landscaping. Building footprints and hardstanding will limit the potential for recharge and subsequent leaching and vertical migration of contaminants but areas of soft landscaping and areas left temporarily as rough ground will still enable recharge and leaching.	Medium	Moderate-Low Risk

Source	Pathway	Receptor	Probability	Consequence	Risk
	Lateral migration of contaminated groundwater affecting adjacent surface water receptors; and, Lateral migration of dissolved phase contaminants via preferential pathways such as drains, pipes, boreholes and trenches	Controlled Waters: Surface Water	Low likelihood Ground cover following the proposed development is anticipated to be a combination of building footprints, car parks, hardstanding and soft landscaping. Building footprints and hardstanding will reduce the potential for leaching of contaminants from unsaturated soils. Drainage will intercept surface water run-off from hardstanding areas reducing the potential for entrainment of contaminated soils.	Medium	Moderate / low risk
	Direct contact with contaminants in soil.	Property On-site: current empty warehouse and associated below ground infrastructure which will remain, and proposed future buildings, car parks, hardstanding, and access roads associated with the new development.	Unlikely Building foundations and associated infrastructure will be in direct contact with contaminants in soil although it is assumed that foundations and below ground infrastructure will be designed to the appropriate concrete classification to mitigate against chemical attack.	Mild	Very Low Risk
Potentially contaminated groundwater	Dermal contact with and ingestion of contaminants in groundwater if excavation takes place below the groundwater table.	Human receptors on-site: construction/maintenance workers	Unlikely It is not anticipated that construction or maintenance workers will excavate below the groundwater table as part of their duties except maybe when installing piles. In addition, robust risk assessments are required to identify appropriate personal protective equipment and suitable working methods to protect these receptors, in accordance with current guidance and recommended good working practices. This will reduce the likelihood even further.	Medium	Moderate / low risk. Reduced to low risk through use of appropriate PPE and best practice in working methods.
	Dermal contact with and ingestion of contaminants in groundwater if excavation takes place below the groundwater table.	Human receptors on-site: future users and visitors	Low likelihood Under normal everyday activities users of the site will not come into direct contact with groundwater.	Mild	Low risk
	Discharge of contaminants in laterally migrating groundwater to the surface watercourse.	Surface Water	Low likelihood Groundwater is present in the bedrock. There is the potential for lateral migration of contaminants in groundwater.	Medium	Moderate / Low
	Lateral off-site migration of dissolved phase contaminants in groundwater.	Controlled Waters: groundwater in the Chalk Principal Aquifer	Low Likelihood There is the potential for works to encounter contaminated groundwater / perched water which may be mobilised via preferential pathways created during the works.	Medium	Moderate / Low

Source	Pathway	Receptor	Probability	Consequence	Risk
	Direct contact with contaminants in migrating groundwater.	Property Off-site: residential and commercial properties and associated infrastructure	Very low likelihood Off-site property is not likely to be in direct contact with groundwater.	Minor	Very low risk
Off-Site: Former RAF airfield in the surrounding area; and Tanks (contents unknown).	migration of contaminants onto site from off-site sources, via soil derived dust followed by inhalation / ingestion	Human receptors on-site: construction/maintenance workers.	Likely On-site future construction/maintenance workers may be in direct contact with contaminants because they may be required to excavate and handle soil and excavate below the groundwater table. However, robust risk assessment is required to identify appropriate personnel protective equipment and suitable working methods to protect these receptors, in accordance with current guidance and recommended good working practices which will reduce the likelihood to low.	Medium	Moderate Risk Reduced to Moderate/Low
	migration of contaminants onto site from off-site sources, via soil derived dust followed by inhalation / ingestion	Human receptors on-site: future users of and visitors to the site.	Unlikely Ground cover across the wider former airfield predominantly comprises buildings, hardstanding and vegetated landscaping. It is therefore unlikely that areas of exposed soils will be present and dust generation will be minimal.	Medium	Low risk
	leaching or dissolution of contaminants soils and subsequent migration of contaminants in groundwater	Controlled Waters: groundwater in the Chalk Principal Aquifer	Low likelihood There is the potential for on-site migration of contaminated groundwater from off-site sources. However, up hydraulic gradient sources of contamination are likely to undergo a degree of natural attenuation including dilution and dispersion.	Medium	Moderate / Low Risk
	Leaching / dissolution of contaminants from unsaturated soils followed by migration in groundwater / perched water; and, Migration of contaminants entrained in surface water run-off.	Controlled Waters: Surface Water	Unlikely Ground cover across the wider former airfield predominantly comprises buildings and hardstanding with roadside drainage. It is unlikely that contaminants potentially entrained within surface water runoff across the adjacent industrial park would affect the site but would be intercepted by drainage.	Medium	Low risk

4. Ground Conditions

From the information contained within Section 2, an appreciation of the anticipated ground conditions can be made based on information collated and reviewed during the desk study.

4.1. Made Ground/ Topsoil

Due to the development of the site as an airfield base there is likely to be some Made Ground overlying the site. Made Ground has been observed around the runways and appears to consist of gravel. The depth of the Made Ground is unknown but given that the runways were not elevated much above the surrounding fields it is assumed to be shallow. In addition to any Made Ground, historic borehole BGS SU17NW8 identified a 150mm layer of topsoil that may well be encountered across the fields of the site.

There may be buried services located within the Made Ground due to the decommissioned airbase. This report recommends the use of geophysical and buried services surveys to identify these. There however remains a risk of encountering unknown services and foundations during intrusive works.

4.2. Superficial Deposits

Previous ground investigations and geological mapping indicates that there will be negligible superficial deposits across the site.

4.3. Bedrock Geology

4.3.1. Zig Zag Chalk Formation

From geological mapping and previous ground investigations the site is underlain by the Zig Zag Chalk Formation. The Zig Zag Chalk Formation is likely to be encountered from a depth of 0.15 m bgl and has been encountered up to depths of 55m bgl. Although not mentioned in previous site investigations it is likely that there will be a layer of weathered chalk near the surface. The extent of the weathering should be confirmed during the intrusive site investigation. The strength of the formation is unknown.

Historic borehole SU17NW8 (see Figure B-3), located 750m from the site, identified marly layers at 11-12.8 and 21.3-32.3m bgl. These marly layers will likely also be encountered on site. The historic boreholes did not find any evidence of flints.

Zig Zag Chalk Formation is a grey (lower) chalk, which is generally considered to be weaker than the middle and upper chalk. The historic borehole BGS SU17NW8 (see Appendix B) considered the chalk to be “hard grey chalk” at the surface increasing in strength to “very hard chalk” at a depth of 17.7m. From this we can assume that the chalk encountered on site will be on the upper end of strength for a grey chalk. This will mean the chalk is of medium to high density with an approximate intact dry density of 1.70 Mg/m³ and an approximate UCS of 5 MN/m². (6)

4.4. Groundwater

Groundwater levels were found in the historical boreholes to be between 39 and 43m bgl. Due to the low groundwater level and the high permeability of the chalk there is a low level of risk that the water table might have an impact on the site. Given the age of the boreholes the groundwater level may have changed since then and it will be necessary to confirm groundwater levels during the ground investigation.

Height of groundwater is of particular relevance to the design given the potential use of soakaway drainage on the site. The depth of the soakaways must be such that they are located above the highest groundwater level over the design life of the soakaways.

4.5. Ground Model Summary

Based on all existing desk study information, a ground model summary has been created as shown in Table 4-1 below.

None of the existing borehole records contained information relating to material properties. Information on the relationships between material properties such as undrained shear strength and moisture content can be found in chapter 4 of CIRIA C574. (6)

Table 4-1 Anticipated Ground Model

Stratum Description	Depth to top (m bgl)	Depth to Base (m bgl)	Thickness (m)
Topsoil	0	0-0.15	0-0.15
Zig Zag Chalk Formation	0-0.15	32.3-55	32.1-55*
Greensand Formation	32.3-55	41.5-73.2	9.2-18.7
Gault Formation	41.5-73.2	56.4-76.9	N/A**

*One borehole had evidence of Marl layers but these have not been included for clarity

**Historic Boreholes ended in the Gault Formation, therefore it is not possible to estimate its thickness

5. Preliminary Engineering Assessment

5.1. Geotechnical Categorisation

In accordance with Eurocode 7, these scheme proposals classify as Geotechnical Category 2, relating to conventional types of structure and foundations with no exceptional risk or difficult soil or loading conditions. The geotechnical category should be reassessed as the design progresses. (13)

5.2. Site Preparation

Due to the historical construction, there is a possibility that buried services may go undiscovered through investigation. It is therefore best practise to start any inspection pits by hand digging and CAT scanning to a depth of 1.2m.

Weaker top layers of weathered chalk or unexpected thick layers of granular Made Ground may be encountered on site and these pose an instability risk during excavation. A risk assessment of the stability of open excavations should be conducted by a competent person, with suitable measures implemented for safe working practise.

Boreholes in chalk must be undertaken by an experienced ground investigation contractor otherwise drilling induced sample disturbance can lead to breaking up the chalk body giving an inaccurate view of the chalk. (6)

5.3. Hardstanding

CIRIA C574 summarises the guidance from the Department of Transport's Design Manual for Roads and Bridges for the design of pavement on chalk. The design process varies depending on if the highway is cut in chalk or if it is being formed on top of reworked chalk, such as in an embankment. On our site it is likely that the hardstanding will be cut into the chalk. In this case if the chalk is at least medium-density structured chalk there will be no need for a capping layer and a design CBR of greater than 15 per cent can be adopted, the thickness of the pavement should be at least 450mm (including sub-base). If the hardstanding is built on top of reworked chalk fill then a typical design CBR should be 8 per cent. (6)

So that the chalk is not damaged and becomes weathered it is very important that the works be carried out carefully and in accordance with the Department of Transport *Specification for Highway Works*. (6)

5.4. Foundations

The development of the site will comprise the construction of the foundations for the proposed warehouse structure. Chalk is a difficult material to work with. Its ability to dissolve can be a problem for foundations. To prevent the creation of dissolution features around foundations infill must be proven to be dense. Given that significant earthworks, or complex foundations are not expected as part of this development, the problems arising from working with chalk should not be an issue. (6)

A preliminary recommendation for foundation design can be made based on the information made available from the desk study. Broadly the ground conditions are expected to comprise a layer of topsoil overlying a layer of competent chalk. Given the description of the chalk as "hard" in the historic boreholes it can be assumed that the chalk is dense and strong and the proposed structure can therefore be supported on conventional shallow foundations.

5.5. Soakaway

Given the dissolution of chalk, soakaway design requires careful consideration, the input of a specialist geotechnologist is required. Given the medium/ high density of the Zig-Zag Chalk Formation and the expected low groundwater level the use of a soakaway may likely be viable. For medium - high density chalks the soakaway may be located within 5m of the structure. The size of the soakaway is determined by the amount of runoff and by the permeability of the surrounding ground. (7)

5.6. Additional Ground Investigation

Given the potential risk of solution features within the chalk, it is proposed that a geophysics survey shall be undertaken for the site. Geophysics surveys allow the rapid surveying of a large area. It is expected that electrical resistivity tomography and electrical conductivity shall be undertaken to map solution features. Additional geophysical surveys may be performed to identify UXOs, and archaeological features.

Additional ground investigation is recommended at the site to provide input for the detailed foundation design. The ground investigation will be specified based on the findings of the geophysical survey, avoiding buried services and investigating problematic areas within the Made Ground and chalk. It is expected that a number of windowless sampling/rotary cored boreholes and trial pits will be required. These exploratory locations will be required at set intervals under the structure, with more under potential access roads, to determine the underlying geology, identify geotechnical design parameters and the absence of groundwater. These boreholes will be required to identify and extend slightly beyond the top marly layer (11-12.8m bgl) to prove the geotechnical setting.

Trial pitting of the upper layers of the chalk will be important for identifying the characteristics of the upper layers of chalk which determine the likelihood of the risks identified in Section 2.8.1. Trial pits shall aim to find evidence of dissolution features in the upper layers of the chalk and the level of weathering. The location of the trial pits will be determined in part by the results of the geophysics investigation which may identify particular areas of interest. In addition, trial pits, shall look for evidence of flints, especially young ones that can react with cement. Trial pits shall be used to prove ground conditions. CBR tests will be undertaken in these trial pits to provide geotechnical design parameters.

Further in-situ tests to be performed shall include plate loading tests, which are an effective method for identifying the bearing capacity and compressibility of chalk. Soakaway trial pits can be performed to test the permeability of the chalk, these should be done at an appropriate size for the required soakaways. (6)

6. Conclusions

6.1. Land Contamination

6.1.1. Potential Contaminant Linkages

- The following moderate to moderate/low risk potential contaminant linkages have been identified;
 - moderate risk to construction/maintenance workers coming into contact with contaminated soil, dust and/or groundwater – reduced to moderate/low through use of PPE;
 - moderate/low risk to future users of the site coming into contact with contaminated soil, dust and/or groundwater;
 - moderate/low risk from migration of contaminated groundwater to nearby surface waters and/or underlying aquifers; and
 - moderate/low risk from leaching or dissolution of contaminated soils and subsequent migration of contaminants in groundwater from off-site sources.

6.1.2. Data Gaps

Data gaps and uncertainties have been identified and are summarised below:

- composition and thickness of Made Ground across the site and potential presence of contamination;
- depth to groundwater and potential presence of contamination; and,
- classification of materials to be re-used or disposed of off-site.

6.2. Geotechnical Information

6.2.1. Ground Summary

A preliminary appreciation of the ground conditions on site has been built up based on the published data from the BGS, CIRIA C574 and historic ground investigation records (3), (6). The geology is expected to comprise a thin layer of topsoil overlying the dense chalk of the Zig Zag Chalk Formation.

The groundwater level is expected to be at depth; between 39 and 43m bgl.

6.2.2. Engineering Assessment

The following main conclusions were drawn from the preliminary engineering assessment:

- The Zig Zag Chalk Formation should be considered a suitable material to lay foundations on;
- Given the likely density of the chalk Soakaways should be a viable form of drainage, however design will require a specialist geo-technologist, and;
- Shallow foundations are anticipated to be suitable for the warehouse.

6.2.3. Data Gaps

Data gaps and uncertainties have been identified and are summarised below. Recommendations for further ground investigation is specified in Section 8.2.

- A more detailed ground model based on investigation below the proposed developed area;
- The groundwater regime; and,
- The engineering properties of the materials on site

7. Geotechnical Risk Register

The Geotechnical Risk Register has been established and will be updated as the scheme progresses and when constraints are identified or when identified risk factors change. The scoring system used in the register is as follows:

Table 7-2 Geotechnical risk register

Probability (P)		Impact/ Consequence (I)		Risk Rating	Risk (PxI)
Very likely	5	Very High	5	Intolerable	17 to 25
Probable	4	High	4	Intolerable	13 to 16
Likely	3	Medium	3	Substantial	9 to 12
Unlikely	2	Low	2	Tolerable	5 to 8
Negligible	1	Very Low	1	Trivial	1 to 4

Table 7-1 Qualitative Geotechnical Risk Assessment

	Hazard	Consequence	Initial Risk			Mitigation Measures	Residual Risk		
			P	I	Risk		P	I	Risk
1	Unknown/poor ground conditions	Inadequate ground engineering solutions requiring re-designs, causing delays to works and an increase in costs.	2	4	8	Designer to scope ground investigations to include appropriate geotechnical and geo-environmental in-situ and laboratory testing.	1	4	4
2	Contaminated ground	Potential for contaminated ground to pose a risk to human health and/or controlled waters should material require reuse, also unexpected waste management costs and potential delays to programme.	3	3	9	<p>Designer to scope ground investigation and geo-environmental in-situ and laboratory testing to identify potential contaminant linkages.</p> <p>Obtain data on chemical concentrations within soils at the site as part of geotechnical investigation works.</p> <p>Contractor to remain vigilant to potential contamination during investigation works and inform client if any visual or olfactory evidence of contamination is encountered.</p> <p>Samples will need to be collected for laboratory analytical/waste classification testing.</p> <p>Results to be used to undertake a Generic Quantitative Risk Assessment for Human Health and Controlled Waters to inform for design and construction phases.</p>	2	3	6
3	Presence of unrecorded buried services	Damage to buried services causing delays and additional costs. Health and safety of site workers.	2	5	10	<p>Designer to obtain and review information on Statutory Undertakers to inform design.</p> <p>Buried service survey to be reviewed prior to GI works.</p> <p>GI Contractor to review the presence and location of recorded services, preparing a method statement for the avoidance, protection or diversion of buried services.</p>	1	5	5
4	Presence of unrecorded UXOs	Uncovering of UXO requires removal, leads to delays. Possible damage to unrecorded UXO leads to detonation harming site workers.	3	5	15	<p>UXO geophysical survey prior to GI works to identify possible locations of UXOs.</p> <p>GI Contractor to prepare a method statement for the avoidance, removal of UXOs and to detail safe working given the risk of encountering UXOs.</p>	1	5	5
5	Variable groundwater levels	Delays to construction and increase in costs in re-design to account for higher groundwater levels. Change to soakaway design, increased chance of collapse settlement.	2	5	10	<p>Designer to scope ground investigation to obtain information on groundwater conditions.</p> <p>Contractor to consider potential groundwater variation in temporary works design.</p>	1	5	5

	Hazard	Consequence	Initial Risk			Mitigation Measures	Residual Risk		
			P	I	Risk		P	I	Risk
6	Made Ground across site	Variable properties of Made Ground making excavation difficult, leading to delays and additional costs.	4	2	8	Designer to scope ground investigations to characterise nature and thickness of Made Ground across the site.	3	2	6
7	Asbestos	Potential presence of asbestos in Made Ground, imported fill of unknown provenance and demolition of historical structures	3	4	12	Carry out asbestos screening on representative soil samples from across the site. Record potential asbestos containing materials identified in Made Ground soils during logging of trial pits and boreholes as part of future site investigation works.	2	3	6
8	Presence of young flints in upper chalk layers	Damage to foundations due to reaction with cement	2	4	8	Perform effective ground investigation including use of trial pits to identify if chalks present in area. Followed by testing of chalks if encountered. If young chalks found design will require altering	1	3	3
9	Chalk Weathering	If weathering is more extensive than expected, will need to alter design, foundations need to be much larger, potential need for deep foundations. Frost heave becomes possible	2	4	8	Designer to scope ground investigation to obtain information on chalk weathering. Designer to consider alternate plans if chalk is of poorer than expected quality	1	4	4
10	Chalk Strength	If chalk is less dense than expected then its compressibility will be much greater, increasing risk of differential settlement. Soakaways will also have to be situated further from design. Dissolution features in chalk much more likely due to low density	3	5	15	Designer to scope ground investigation to obtain information on chalk weathering. Designer to consider alternate plans if chalk is of poorer than expected quality	2	4	8
11	Dissolution Features	Collapse of dissolution features can lead to differential settlement	3	4	12	Use of geophysics surveying to identify presence early. Provide suitable ground investigation to identify dissolution features. Edit design to account for more extensive dissolution features, locate foundations below them. Correct design of drainage and soakaway to avoid creation of additional dissolution features.	2	3	6
12	Old mine workings	Collapse of underlying mines leads to differential settlement and structural damage	2	3	6	Desk study has highlighted that there is only one opencast mine near the site. Ground investigation to locate if opencast mine extends under site and for any evidence of unknown mines	1	3	3

	Hazard	Consequence	Initial Risk			Mitigation Measures	Residual Risk		
			P	I	Risk		P	I	Risk
13	Collapse Settlement	Water pooling under foundations weathers chalk which leads to rapid differential settlement and structural damage	3	4	12	Effective ground investigation that allows for correct design of drains and soakaways. Locating soakaway at an appropriate distance away from the foundations.	1	3	3

8. Recommendations for Further Work

8.1. Land Contamination

The preliminary CSM has identified potential contamination risks relating to the site related to potential contamination from historical and current land activities which may be present within Made Ground, if present and shallow natural soils underlying the site. Further consideration of these potential risks is required as part of the proposed intrusive investigation.

The proposed investigation should include soil sampling and analysis to classify the environmental characteristics of the soils, inform a site specific generic quantitative risk assessment (GQRA) and to aid preliminary waste characterisation for disposal / reuse of the proposed works arisings.

8.2. Ground Investigation

Further work is recommended at the site in the form of additional intrusive ground investigation, initially scoped as follows (including the requirements for land contamination noted above):

- For exploring under the One Collection Facility exploratory holes should be spaced in a grid pattern with points at not more than 60m distance
- Drilling of one rotary core borehole in the soakaway field to prove groundwater level is sufficiently low for proposed soakaway design, expected depth 20m
- Drilling of one rotary core borehole under the One Collection Facility to the greater of 10m or beyond the first marl horizon (expected at 11-12.8m) (14)
- 3 days of trial pitting to determine the weathering and other dissolution features in the upper layer of the chalk
- A plate load bearing test shall be undertaken at the base of a trial pit of a depth representative of the foundations
- SPT during drilling at 1m intervals between 0m and 5m depth and 1.5m intervals between 5m and 10m depth
- CBR/TRL tests with the trial pits at a representative depth of 0.8m bgl
- Sampling of soil at 1m intervals and change of strata to allow geotechnical laboratory testing
- Soakaway test of appropriate size for site requirements
- Geotechnical laboratory testing to include consolidation testing, aggressive environment for concrete, porosity, dry density, degree of saturation

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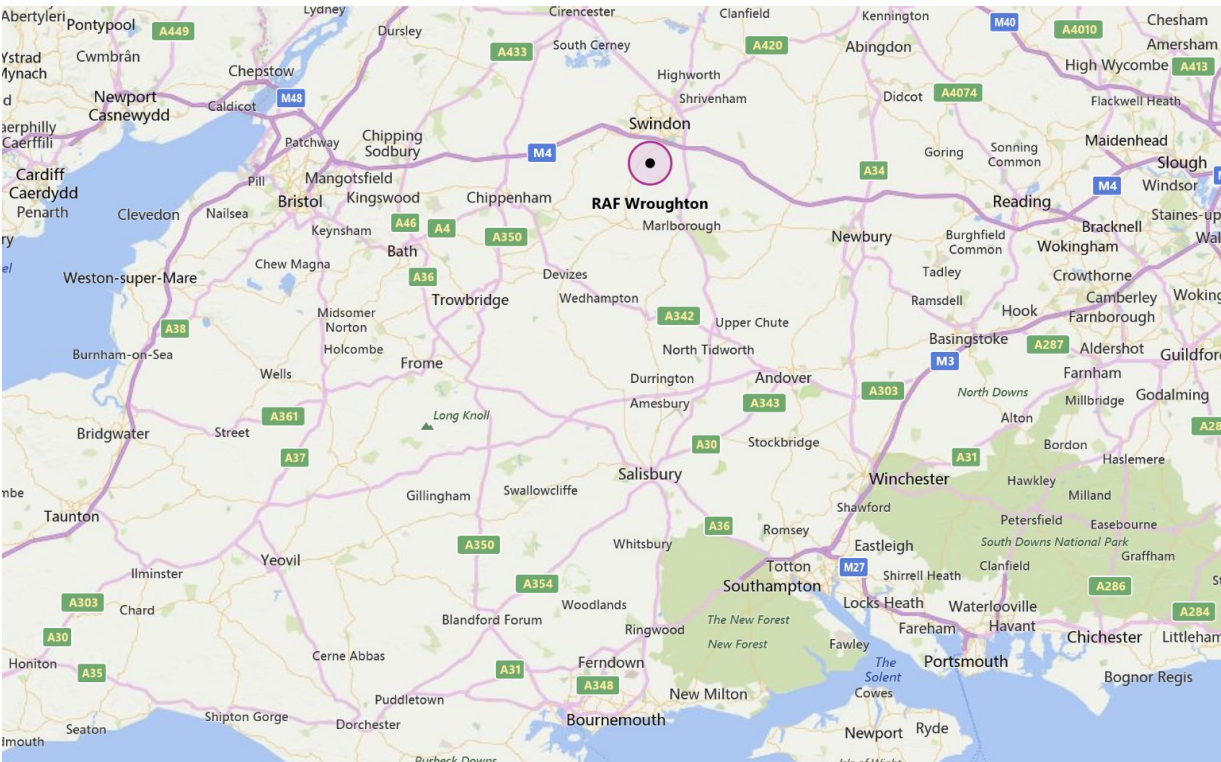
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Appendices



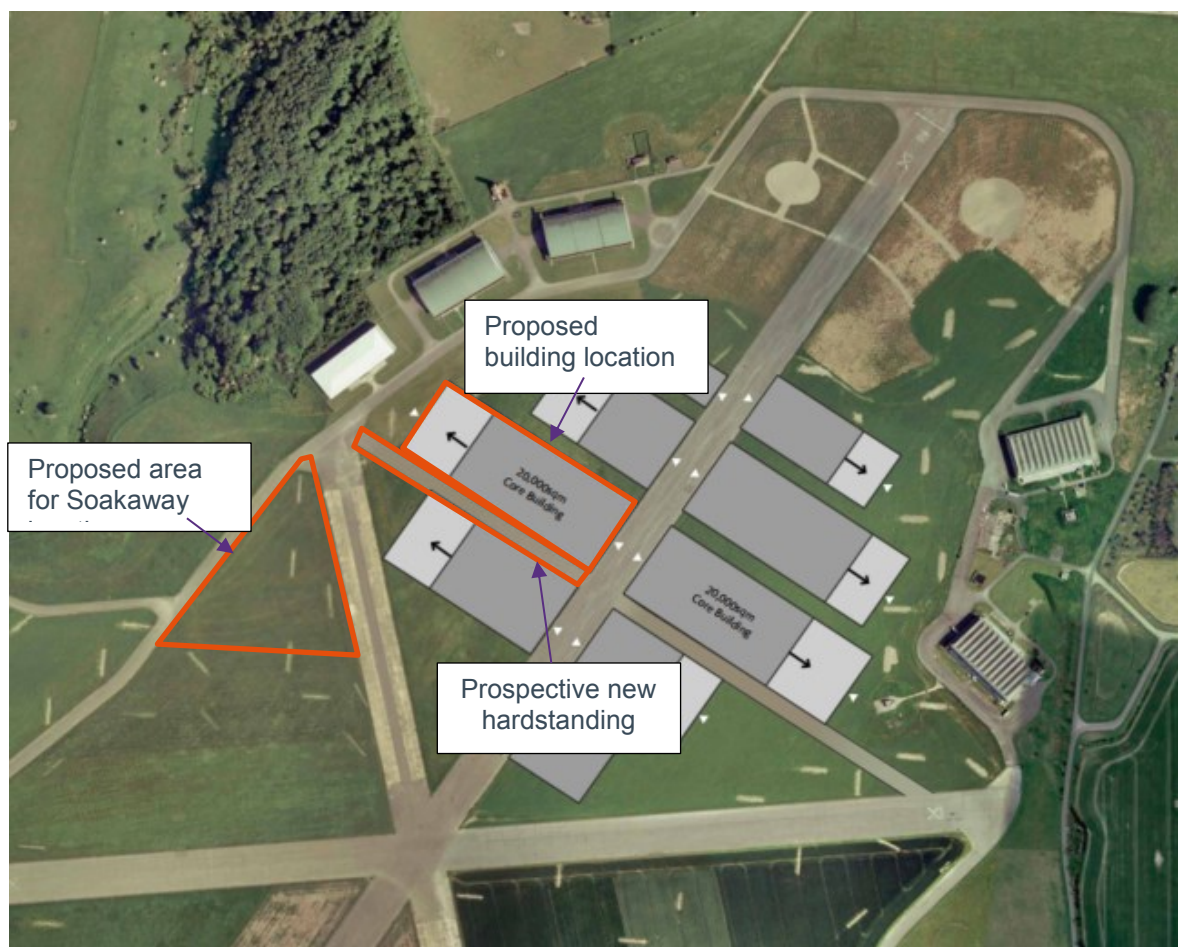
Appendix A. Site Plan

Figure A-1 Site location plan



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Figure A-2 Plan of proposed development



Source: Gensler Concept Master Plan 29 August 2017

Figure A-3 View looking south of prospective field for soakaway location

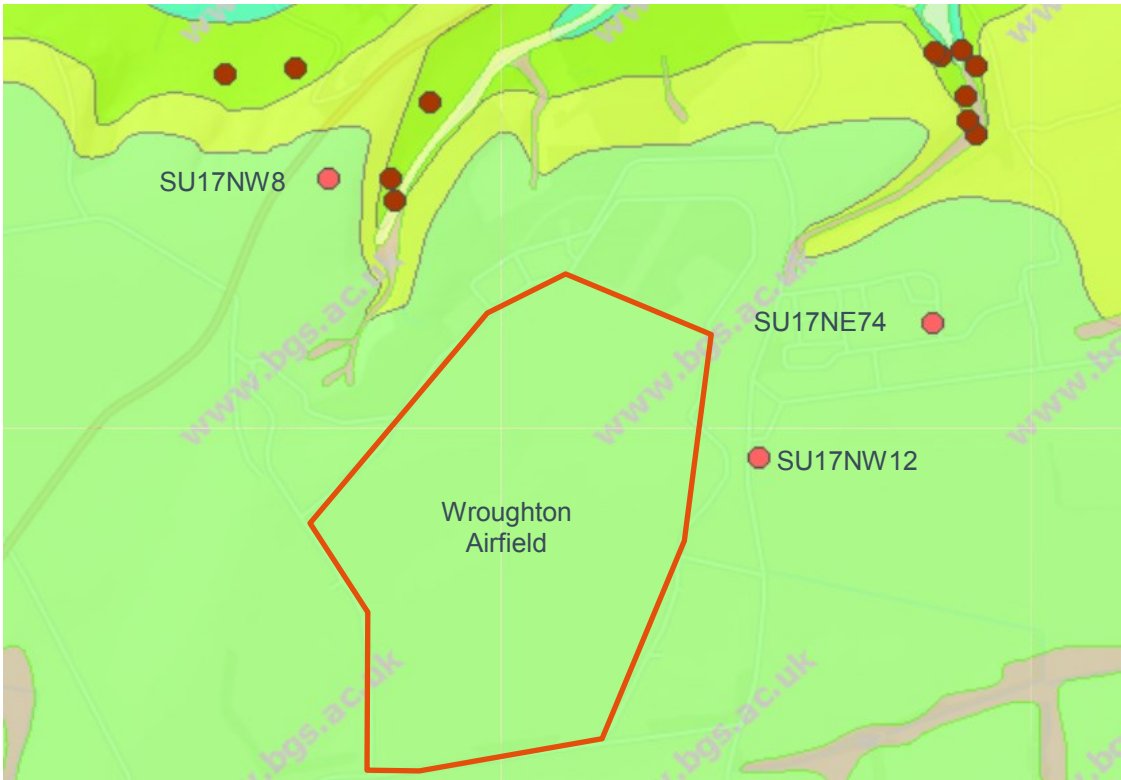


Figure A-4 View looking east of proposed location of new One Collection Facility



Appendix B. Historic Boreholes

Figure B-1 BGS geology map of site, showing historic borehole locations



Contains British Geological Survey materials © NERC 2017




Legend	
Zig Zag Chalk Formation	
West Melbury Marly Chalk	
Upper Greensand Formation	

Figure B-2 BGS Historic Borehole – BGS SU17NE74

SU17/115
5417/115

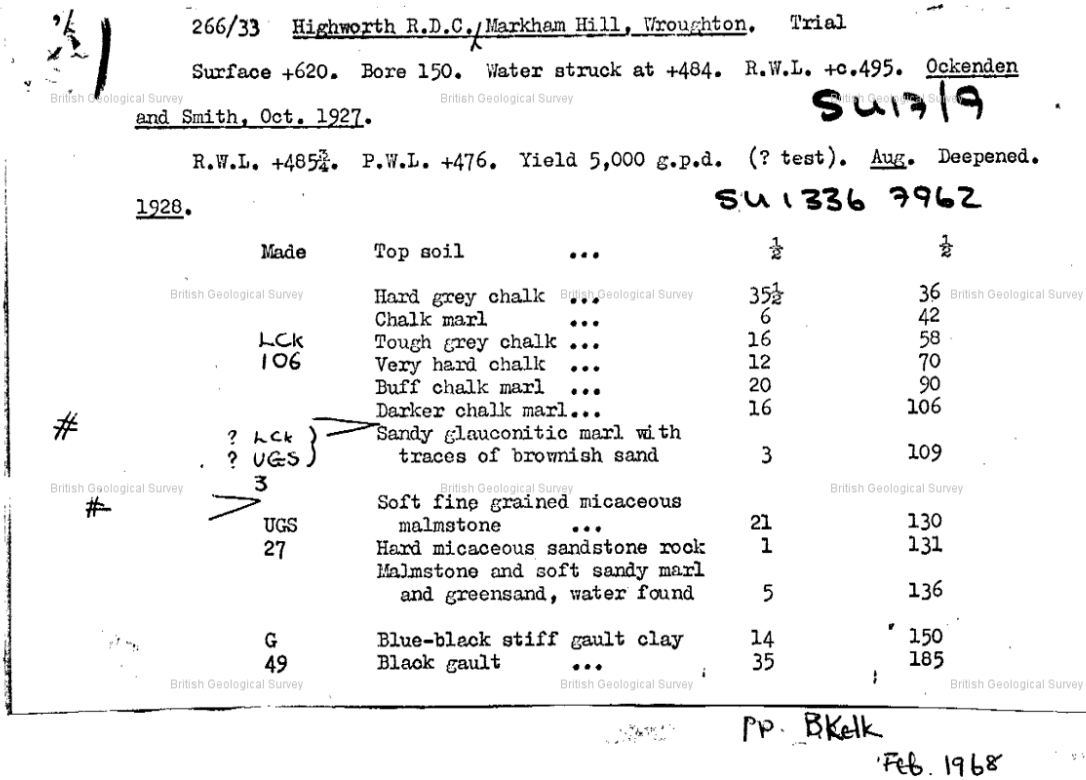
PRINCESS ALEXANDRA HOSPITAL, WROUGHTON

Owner M O D		Licence No.	Nat. Grid Ref. 151 792									
Occupier		IGS Ref. No.	Status									
Ground Level		m OD	ft. OD									
Level of Well Top		m OD	ft. OD	Aquifer L. CHALK / UGS								
Rest Water Level 39		m bwt	ft. bwt									
(Date 9/12/85)		m OD	ft. OD									
Construction		Summary of Geological Section										
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Depth</th> </tr> </thead> <tbody> <tr> <td>L. CHALK</td> <td>45</td> </tr> <tr> <td>UPPER GREENSAND</td> <td>23</td> </tr> <tr> <td>GAULT</td> <td>2 + 70</td> </tr> </tbody> </table>			Thickness	Depth	L. CHALK	45	UPPER GREENSAND	23	GAULT	2 + 70
Thickness	Depth											
L. CHALK	45											
UPPER GREENSAND	23											
GAULT	2 + 70											
Depth bwt	Dia.	Linings (below well top)										
		From	To	Dia. Type								
70m	305mm	0	70m	305 PERF-								
DRILLER	455mm			250M MESH								
Abstraction Rates		Type of Pump										
gph		Chem./Bact. Anal. YES NO										
gpd		Well Driller ROYAL ENGINEERS										

If insufficient space has been allowed, continue in 'Notes' overleaf.

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Figure B-3 BGS Historic Borehole - BGS SU17NW8



WELL BORING at Markham Hill, Wroughton, County

Geol. map

1 in. map. New Series

6 in. map

Made by Okenden & Smith, Basingstoke

Date 22.9.1927

Sunk

feet

Bored

150

Communicated by Parker Pearson & Ross, Wooster

Height above Ordnance Datum 620 ft.

Rest level of water

134 ft. fm

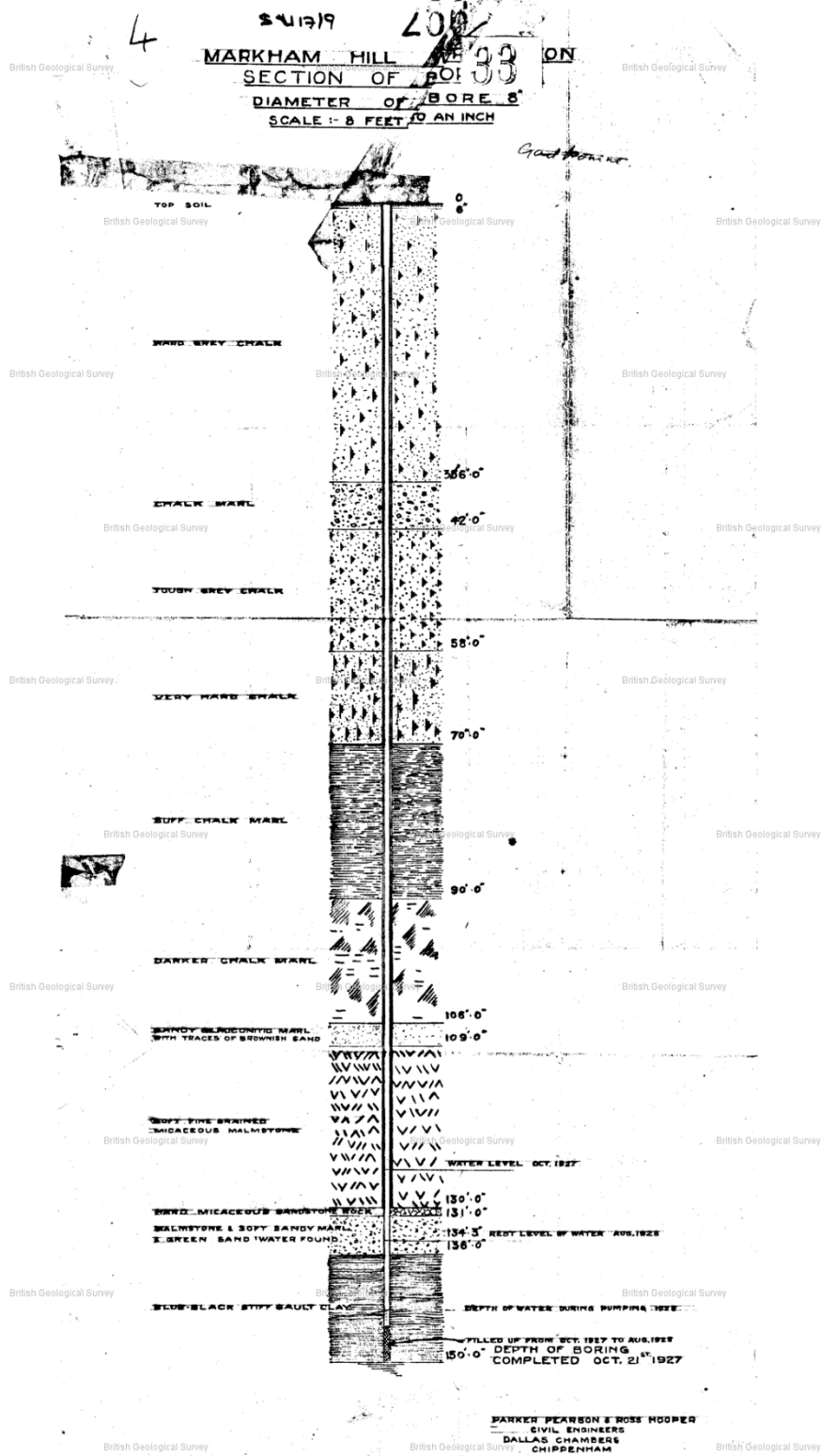
Yield 5,000 gallons per 24 hrs.

Quality (with copy of analysis on separate sheet)

SU1719

33

GEOLOGICAL FORMATION.	NATURE OF STRATA.	THICKNESS.		DEPTH.	
		Feet.	Inches.	Feet.	Inches.
	Top soil		6		6
	Hard grey chalk	35	6	36	-
	Chalk marl	6	-	42	-
LCK	Tough grey chalk	14	-	56	-
109	Very hard chalk	18	-	70	-
	Soft chalk marl	20	-	90	-
	Dark chalk marl	16	-	106	-
Chertic Marl	Sandy glauconitic marl with traces of brownish sand	3	-	109	-
	Soft fine grained micaceous malmstone	21	-	130	-
UGS	Hard micaceous sandstone rock	1	-	131	-
27	Malmstone and soft sandy marl	5	-	136	-
G	and greensand, water found	14	-	150	-
14	blue-black stiff gault clay				
<p>Water level. Oct. 1927 - about 135 ft. down.</p> <p>Aug. 1928 - " 134 ft. "</p> <p>Depth of water during pumping, 1928 - about 144 ft. down</p>					
<p>LCK 106 1106</p> <p>?LCK 3 109</p> <p>UGS 27 136</p> <p>G 14 150</p>					
<p>BK Feb 68</p>					
<p>Borehole abandoned in 1928, since yield did not exceed 5,000 g.p.h. instead of the anticipated 20,000 g.p.h. Sited on basis of 8" W.L. 22 N.E. by R.D.C. Engineer and Surveyor.</p>					
<p>GEOLOGICAL SURVEY AND MUSEUM, JERMYN STREET, LONDON. S.W. 1.</p>					
<p>(B10619). Wt. 15824-S123. 2500. 11/25. Gp. 160. O.A.</p>					



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[illegible]

<p>British Geological Survey</p> <p>RECORD OF WELL</p> <p>REGIONAL OBSERVATION BOREHOLE</p>		<p>For Institute use only Licence No.</p> <p>N. <u>266</u> <u>BS417/108</u></p> <p><u>230</u></p>
<p>EXACT SITE OF WELL</p> <p>*DELETE AS NECESSARY</p> <p>TEST CONDITIONS</p> <p>NORMAL CONDITIONS</p> <p>LOG OF STRATA OVERLEAF</p>	<p>At <u>WROUGHTON AIRFIELD</u></p> <p>Town or Village <u>WROUGHTON</u></p> <p>County <u>WILTSHIRE</u></p> <p>Six-inch County Sheet <u>WILTS 22 NE/W</u></p> <p>Six-inch National Grid sheet and reference <u>SU17 NW 1460 7880</u></p> <p>For <u>THAMES CONSERVANCY</u></p> <p>State whether owner, tenant, builder, contractor, consultant, etc.— <u>OWNER</u></p> <p>Address (if different from above) <u>THAMES CONSERVANCY</u> <u>DE BOHUN ROAD, READING, BERKS</u></p> <p>Level of ground surface above sea level (O.D.) <u>630</u> 440 ft (<u>192</u> m)</p> <p>If well top is not at ground level, state how far above* <u>SHAF</u> ft (<u> </u> m); below: <u> </u> ft (<u> </u> m); diameter <u> </u> ft (<u> </u> m);</p> <p>HEADINGS (please attach details—dimensions and directions)</p> <p>BORE <u>252</u> ft (<u>76.9</u> m); diameter: at top <u>8</u> in (<u>20.3</u> cm); at bottom <u>8</u> in (<u>20.3</u> cm)</p> <p>Full details of permanent lining tubes (position, length, diameter, plain, slotted, etc.) <u>40' (12.2 m) of plain casing from 1 ft to 41 ft (1.8" dia.)</u></p> <p>Water struck at depths of <u> </u> ft (<u> </u> m) below well top</p> <p>Rest level of water <u>141</u> ft (<u>43</u> m) above* well top. Suction at <u> </u> ft (<u> </u> m) below</p> <p>Yield on <u> </u> hours* test pumping at <u> </u> galls (<u> </u> m³) per <u> </u> days with depression to <u> </u> ft (<u> </u> m) below well top. Recovery to rest level in <u> </u> mins* hours</p> <p>Capacity of pump <u> </u> g.p.h. (<u> </u> m³/h)</p> <p>Date of measurements <u> </u></p> <p>DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:</p> <p>Make and/or type <u> </u> Motive power <u> </u></p> <p>Capacity <u> </u> galls (<u> </u> m³) per hour. Suction at <u> </u> ft (<u> </u> m) below well top. Amount pumped <u> </u> galls (<u> </u> m³) per day. Estimated consumption <u> </u> galls (<u> </u> m³) per week</p> <p>Well made by <u>Thames Conservancy</u> Date of sinking <u>June 1972</u></p> <p>ADDITIONAL NOTES <u>WRS No. SU 17-108</u> ANALYSIS (please attach copy if available) <u>RESISTIVITY LOGGED</u></p>	<p>Received from <u>Thames Conservancy</u></p> <p>Date <u>12-10-1972</u></p> <p>Observation well <u> </u></p> <p>Recorder <u> </u></p> <p>E.R. log <u> </u></p> <p>Site marked on <u> </u></p> <p>1" map <u> </u></p> <p>6" map <u> </u></p> <p>British Geol. (use symbol)</p> <p>Copy to <u>D.G. C. & S. M. d.</u></p> <p>Date <u> </u></p>
<p>INSTITUTE OF GEOLOGICAL SCIENCES, WATER DEPARTMENT, SOUTH KENSINGTON, LONDON, S.W.7.</p>		

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Appendix C. Envirocheck Report

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

143521870_1_1

Customer Reference:

SMG One Collection Facility, Wroughton

National Grid Reference:

413790, 178990

Slice:

A

Site Area (Ha):

9.19

Search Buffer (m):

1000

Site Details:

SMG One Collection Facility

Science Museum

Wroughton

SWINDON

SN4 9NU

Client Details:

Ms C Hidson

Atkins Ltd

Euston Tower

286 Euston Road

London

NW1 3AT

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	9
Hazardous Substances	-
Geological	10
Industrial Land Use	12
Sensitive Land Use	14
Data Currency	15
Data Suppliers	21
Useful Contacts	22

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 the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v53.0

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	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1				1
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	pg 1				1
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances	pg 2				2
River Quality	pg 2	1			
River Quality Biology Sampling Points	pg 2		1		
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 2				(*8)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 4	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 4	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones	pg 4	1			
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 5		2	7	19

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites	pg 9		1		
Historical Landfill Sites	pg 9		1		
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage		1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 9				1
Potentially Infilled Land (Water)	pg 9			1	3
Registered Landfill Sites					
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					

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 10	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 10	Yes		Yes	Yes
BGS Recorded Mineral Sites	pg 10		1		
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					
Non Coal Mining Areas of Great Britain	pg 11	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 11	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 11		Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 11		Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards				n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 12				3
Fuel Station Entries					
Points of Interest - Commercial Services	pg 12			1	
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 12		3	4	2
Points of Interest - Public Infrastructure	pg 13		1		1
Points of Interest - Recreational and Environmental	pg 13				4
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 14		1		2
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty	pg 14	1			
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 14	2			
Ramsar Sites					
Sites of Special Scientific Interest	pg 14		1		
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	A7NW (SE)	0	1	413791 178990
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10SE (NW)	160	1	413550 179200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10SE (NW)	201	1	413500 179200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A10SE (NW)	256	1	413550 179350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10NE (NW)	296	1	413600 179450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10NE (N)	333	1	413600 179500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10NE (NW)	363	1	413500 179450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10NE (N)	443	1	413550 179600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10NE (N)	485	1	413550 179650
1	Discharge Consents Operator: Habourside Properties Ltd Property Type: EDUCATION/NURSERY/SCHOOL/COLLEGE/UNI/TRAINING VENUE Location: The Wagon House And The Old Store Red Barn Wroughton Swindon Wiltshire Sn4 9lt Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Cawm.1229 Permit Version: 1 Effective Date: 7th September 2005 Issued Date: 9th September 2005 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Groundwater Via Soakaway Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m	A9NE (NW)	764	2	413033 179516
	Nearest Surface Water Feature	A10SE (NW)	100	-	413630 179203
2	Pollution Incidents to Controlled Waters Property Type: Not Given Location: WROUGHTON Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 17th December 1991 Incident Reference: W1910513 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A3NE (SE)	627	2	414300 178300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	Registered Radioactive Substances Name: Science Museum Location: Block D4, Red Barn Gate, Wroughton, SWINDON, SN4 9NS Authority: Environment Agency, Thames Region Permit Reference: Bk3786 Dated: 25th May 2001 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Registration under the Act of an open source which is also the subject of an authorisation Status: Application has been authorised and any conditions apply to the operatorAuthorised Positional Accuracy: Manually positioned to the address or location	A9SE (NW)	598	2	413102 179311
4	Registered Radioactive Substances Name: Science Museum Swindon Location: Hackpen Lane, Wroughton, Swindon, SN4 9NS Authority: Environment Agency, Thames Region Permit Reference: CB4086 Dated: 20th August 2007 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA in respect of a registration under S7 when Technetium 99M is used being =< 10 gigabecquerels Status: Application has been authorised and any conditions apply to the operatorAuthorised Positional Accuracy: Automatically positioned to the address	A4NW (SE)	890	2	414561 178177
	River Quality Name: Ray GQA Grade: River Quality A Reach: Source - Wroughton D Estimated Distance (km): 4.5 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A10SE (N)	0	2	413737 179186
5	River Quality Biology Sampling Points Name: Ray (Wilts) Reach: Source To Wroughton Ditch Estimated Distance: 4.50 Positional Accuracy: Located by supplier to within 10m Year: 1990 GQA Grade: River Quality Biology GQA Grade D - Fair Year: 1995 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2000 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2002 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2003 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2004 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2005 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2006 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2007 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2008 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2009 GQA Grade: River Quality Biology GQA Grade B - Good	A10SW (W)	225	2	413410 179100
	Water Abstractions Operator: H F Horton & Son Licence Number: 28/39/22/0282 Permit Version: 100 Location: Upper Salthrop Farm, Wroughton 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): 16 Yearly Rate (m3): 3682 Details: Upper Salthrop Farm, Wroughton, Swindon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th January 1967 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(W)	1502	2	412100 179300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Thames Water Utilities Ltd Licence Number: 28/39/03/0002 Permit Version: 101 Location: Wroughton Catchpits Authority: Environment Agency, Thames Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd February 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NE)	1566	2	415200 180000
	Water Abstractions Operator: Thames Water Utilities Ltd Licence Number: 28/39/03/0002 Permit Version: 100 Location: Wroughton Catchpits Authority: Environment Agency, Thames Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 2728 Yearly Rate (m3): 909200 Details: Annual Abstraction Total Aggregated To Another Licence For Quantity Purposes. Upper Greensand Chalk Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th August 1967 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(NE)	1566	2	415200 180000
	Water Abstractions Operator: R J Hussey & Son Licence Number: 28/39/22/0260 Permit Version: 101 Location: Uffcott Farm, Broad Hinton 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: Uffcott Farm, Broad Hinton Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 30th July 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SW)	1681	2	412600 177500
	Water Abstractions Operator: R J Hussey & Son Licence Number: 28/39/22/0260 Permit Version: 101 Location: Uffcott Farm, Broad Hinton Authority: Environment Agency, Thames Region Abstraction: Household Private Water Undertaking: 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: Uffcott Farm, Broad Hinton, Swindon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 30th July 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SW)	1681	2	412600 177500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: R J Hussey Licence Number: 28/39/22/0260 Permit Version: 100 Location: Uffcott Farm, Broad Hinton 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): 23 Yearly Rate (m3): 8320 Details: Uffcott Farm, Broad Hinton Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th August 1995 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SW)	1681	2	412600 177500
	Water Abstractions Operator: Mr & Mrs S & L Dziubinski Licence Number: 28/39/03/0007 Permit Version: 100 Location: Borehole At Bassett Down Estate, Swindon Authority: Environment Agency, Thames Region Abstraction: Private Water Undertaking: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 53 Yearly Rate (m3): 8000 Details: Land At Bassett Down Estate, Swindon 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	(W)	1849	2	411800 179500
	Water Abstractions Operator: H F Horton & Son Licence Number: 28/39/22/0281 Permit Version: 100 Location: Dunsford Farm, Wroughton 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): 11 Yearly Rate (m3): 1136 Details: Dunsford Farm, Wroughton, Swindon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 14th April 1969 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SW)	1935	2	412200 177500
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 38 Upper Thames & Bedfordshire Scale: 1:100,000	A7NW (SE)	0	2	413791 178990
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A7NW (SE)	0	1	413791 178990
	Superficial Aquifer Designations No Data Available				
6	Source Protection Zones Name: Wroughton Source: Environment Agency, Head Office Reference: Th092 Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A7NW (SE)	0	2	413829 178959
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
7	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 160.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10SE (NW)	100	3	413630 179203
8	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 156.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10SE (NW)	211	3	413576 179312
9	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 121.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10NE (NW)	363	3	413499 179448
10	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 80.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10NE (NW)	413	3	413530 179558
11	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 20.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10NE (NW)	422	3	413515 179544
12	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10NE (NW)	422	3	413528 179556
13	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10NE (NW)	422	3	413528 179556
14	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 56.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10NE (N)	429	3	413581 179603

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 211.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10NE (N)	429	3	413586 179606
16	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 17.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	553	3	413703 179781
17	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 14.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A14SE (N)	554	3	413701 179782
18	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 169.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	562	3	413710 179792
19	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 82.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	623	3	413763 179860
20	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 315.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SW (N)	695	3	413797 179933
21	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 9.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SW (N)	732	3	414055 179926
22	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 53.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SW (N)	734	3	414059 179927
23	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 555.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A8SW (SE)	763	3	414621 178468

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SW (N)	767	3	414108 179943
25	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 53.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (NE)	772	3	414676 179377
26	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SW (N)	773	3	414106 179950
27	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 16.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SW (N)	774	3	414118 179947
28	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 135.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SW (N)	774	3	414105 179952
29	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 528.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (NE)	815	3	414700 179419
30	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 375.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15NW (N)	885	3	414072 180082
31	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 44.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NE (N)	900	3	413520 180091
32	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 41.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NE (N)	963	3	413476 180143

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 5.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NW (N)	974	3	413419 180132
34	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 22.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NW (N)	978	3	413414 180135

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
35	BGS Recorded Landfill Sites Site Name: R.N.A.Y Location: WROUGHTON, Wilts Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Derived	A10SE (W)	150	-	413456 179078
36	Historical Landfill Sites Licence Holder: Not Supplied Location: Wroughton, Wiltshire Name: RNAY Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD32366 First Input Date: 31st December 1939 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: 237 Other Ref: Not Supplied	A10SE (W)	155	2	413460 179077
	Local Authority Landfill Coverage Name: Swindon Unitary Council - Has no landfill data to supply		0	4	413791 178990
	Local Authority Landfill Coverage Name: Wiltshire County Council - Has supplied landfill data		539	6	413043 178694
	Local Authority Landfill Coverage Name: Kennet District Council - Has supplied landfill data		539	5	413043 178694
37	Potentially Infilled Land (Non-Water) Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1982	A14SW (NW)	780	-	413282 179815
38	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1925	A10NE (NW)	365	-	413496 179448
39	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1925	A12SW (E)	563	-	414532 179206
40	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1925	A9SE (W)	579	-	413002 179090
41	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1925	A14SE (N)	581	-	413724 179814

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Grey Chalk Subgroup	A7NW (SE)	0	1	413791 178990
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (SE)	0	1	413791 178990
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10NE (NW)	341	1	413525 179442
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6SE (SW)	390	1	413500 178500
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (NW)	904	1	413225 179931
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A15NE (N)	966	1	414155 180138
42	BGS Recorded Mineral Sites Site Name: Rectory Farm Quarry Location: , Overtown, Swindon, Wiltshire Source: British Geological Survey, National Geoscience Information Service Reference: 55917 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Grey Chalk Subgroup Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A6SE (SW)	222	1	413580 178654

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	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				
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A7NW (SE)	0	1	413791 178990
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A7NW (SE)	0	1	413791 178990
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NW (SE)	0	1	413791 178990
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NW (SE)	0	1	413791 178990
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NW (SE)	0	1	413791 178990
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (NW)	213	1	413524 179256
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NW (SE)	0	1	413791 178990
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (NW)	213	1	413524 179256
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NW (SE)	0	1	413791 178990
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A7NW (SE)	0	1	413791 178990
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A7NW (SE)	0	1	413791 178990

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	Contemporary Trade Directory Entries Name: Meacam Spridgets Location: The Cape Works, Red Barn, Wroughton, Swindon, Wiltshire, SN4 9LT Classification: Classic Car Specialists Status: Active Positional Accuracy: Manually positioned within the geographical locality	A9SE (W)	567	-	413029 179126
44	Contemporary Trade Directory Entries Name: Vzion Blinds (Swindon) Location: 102, Thorney Park, Wroughton, Swindon, SN4 0QT Classification: Blinds, Awnings & Canopies Status: Inactive Positional Accuracy: Automatically positioned to the address	A12SW (E)	715	-	414723 179122
45	Contemporary Trade Directory Entries Name: Equizone Ltd Location: Hackpen La, Wroughton, Swindon, Wiltshire, SN4 9NS Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A4NW (SE)	876	-	414588 178226
46	Points of Interest - Commercial Services Name: Meacam Spridgetts Location: Red Barn Gate, Red Barn, Wroughton, Swindon, SN4 9LT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A10SW (W)	468	7	413114 179071
47	Points of Interest - Manufacturing and Production Name: Tanks Location: SN4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A11NW (N)	198	7	413890 179417
47	Points of Interest - Manufacturing and Production Name: Tank Location: SN4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A11NW (N)	208	7	413891 179428
47	Points of Interest - Manufacturing and Production Name: Tank Location: SN4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A11NW (N)	210	7	413889 179431
48	Points of Interest - Manufacturing and Production Name: Tank Location: SN4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A10SW (W)	391	7	413221 179110
49	Points of Interest - Manufacturing and Production Name: Tank Location: SN4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A11SE (E)	439	7	414453 179064
49	Points of Interest - Manufacturing and Production Name: Tank Location: SN4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SW (E)	442	7	414463 179030
50	Points of Interest - Manufacturing and Production Name: Tank Location: SN4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A8NW (E)	459	7	414485 178961
51	Points of Interest - Manufacturing and Production Name: Tank Location: SN4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A2NW (SW)	757	7	413186 178224

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	Points of Interest - Manufacturing and Production Name: Tank Location: SN4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14NE (N)	955	7	413485 180137
53	Points of Interest - Public Infrastructure Name: Wroughton Airfield Location: SN4 Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A7SW (S)	182	7	413876 178639
54	Points of Interest - Public Infrastructure Name: Sluice Location: SN4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14SE (N)	619	7	413769 179856
55	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (E)	783	7	414784 179158
55	Points of Interest - Recreational and Environmental Name: Playground Location: Thorney Park, SN4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SW (E)	784	7	414781 179174
56	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (E)	802	7	414765 179272
56	Points of Interest - Recreational and Environmental Name: Playground Location: Thorney Park, SN4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (E)	802	7	414764 179275

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	Ancient Woodland Name: Clouts Wood Reference: 1110720 Area(m²): 87161.28 Type: Ancient and Semi-Natural Woodland	A10SE (NW)	190	8	413612 179337
58	Ancient Woodland Name: Clouts Wood Reference: 1110720 Area(m²): 6125.86 Type: Plantation on Ancient Woodland	A15SW (N)	636	8	413836 179873
59	Ancient Woodland Name: Coombe Bottom Wood Reference: 1110721 Area(m²): 61424.62 Type: Ancient and Semi-Natural Woodland	A12NW (NE)	824	8	414695 179440
60	Areas of Outstanding Natural Beauty Name: North Wessex Downs Multiple Areas: N Total Area (m2): 1731054854.05 Designation Date: 30th December 1972 Source: Natural England	A7NW (SE)	0	8	413791 178990
61	Nitrate Vulnerable Zones Name: Berkshire Downs Description: Groundwater Source: Environment Agency, Head Office	A7NW (SE)	0	9	413791 178990
62	Nitrate Vulnerable Zones Name: Thames (Churn To Coln) Nvz Description: Surface Water Source: Environment Agency, Head Office	A7NW (SE)	0	9	413791 178990
63	Sites of Special Scientific Interest Name: Clouts Wood Multiple Areas: N Total Area (m2): 126158.65 Source: Natural England Reference: 1003234 Designation Details: Local Wildlife Site Designation Date: 31st January 1986 Date Type: Notified Designation Details: Site Of Special Scientific Interest Designation Date: 31st January 1986 Date Type: Notified	A10SE (NW)	68	8	413668 179203

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Kennet District Council (now part of Wiltshire Council) - Environment and Community Safety Services Wiltshire Council - Environmental Health Department North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services Swindon Borough Council - Environmental Services	April 2009 March 2015 May 2008 October 2014	Not Applicable Annually Not Applicable Annual Rolling Update
Discharge Consents Environment Agency - South West Region Environment Agency - Thames Region	July 2017 July 2017	Quarterly Quarterly
Enforcement and Prohibition Notices Environment Agency - South West Region Environment Agency - Thames Region	March 2013 March 2013	As notified As notified
Integrated Pollution Controls Environment Agency - South West Region Environment Agency - Thames Region	October 2008 October 2008	Not Applicable Not Applicable
Integrated Pollution Prevention And Control Environment Agency - South East Region - West Thames Area Environment Agency - South West Region Environment Agency - Thames Region	July 2017 July 2017 July 2017	Quarterly Quarterly Quarterly
Local Authority Integrated Pollution Prevention And Control Swindon Borough Council - Environmental Services Kennet District Council (now part of Wiltshire Council) - Environmental Health Department Wiltshire Council - Environmental Health Department North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services	August 2013 February 2009 July 2015 September 2008	Annual Rolling Update Not Applicable Annually Not Applicable
Local Authority Pollution Prevention and Controls Kennet District Council (now part of Wiltshire Council) - Environmental Health Department Wiltshire Council - Environmental Health Department Swindon Borough Council - Environmental Services North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services	February 2009 July 2015 March 2015 September 2008	Not Applicable Annually Annual Rolling Update Not Applicable
Local Authority Pollution Prevention and Control Enforcements Swindon Borough Council - Environmental Services Kennet District Council (now part of Wiltshire Council) - Environmental Health Department Wiltshire Council - Environmental Health Department North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services	August 2013 February 2009 July 2015 September 2008	Annual Rolling Update Not Applicable Annually Not Applicable
Nearest Surface Water Feature Ordnance Survey	May 2017	
Pollution Incidents to Controlled Waters Environment Agency - South West Region Environment Agency - Thames Region	September 1999 September 1999	Not Applicable Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - South West Region Environment Agency - Thames Region	March 2013 March 2013	As notified As notified
Prosecutions Relating to Controlled Waters Environment Agency - South West Region Environment Agency - Thames Region	March 2013 March 2013	As notified As notified
Registered Radioactive Substances Environment Agency - South West Region Environment Agency - Thames Region	January 2015 January 2015	
River Quality Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points Environment Agency - Head Office	July 2012	Annually

Agency & Hydrological	Version	Update Cycle
River Quality Chemistry Sampling Points Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register Environment Agency - South East Region - West Thames Area Environment Agency - South West Region - North Wessex Area Environment Agency - South West Region - South Wessex Area Environment Agency - South West Region - Wessex Area Environment Agency - Thames Region - West Area	July 2017 July 2017 July 2017 July 2017 July 2017	Quarterly Quarterly Quarterly Quarterly Quarterly
Water Abstractions Environment Agency - South West Region Environment Agency - Thames Region	July 2017 July 2017	Quarterly Quarterly
Water Industry Act Referrals Environment Agency - South West Region Environment Agency - Thames Region	July 2017 July 2017	Quarterly Quarterly
Groundwater Vulnerability Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	July 2017	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2017	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2017	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	August 2017	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	August 2017	Quarterly
Flood Defences Environment Agency - Head Office	August 2017	Quarterly
OS Water Network Lines Ordnance Survey	July 2017	6 Weekly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water Suitability Environment Agency - Head Office	October 2013	As notified
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

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	May 2017	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - South West Region Environment Agency - Thames Region	October 2008 October 2008	Not Applicable Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - South East Region - West Thames Area Environment Agency - South West Region - North Wessex Area Environment Agency - South West Region - South Wessex Area Environment Agency - South West Region - Wessex Area Environment Agency - Thames Region - West Area	July 2017 July 2017 July 2017 July 2017 July 2017	Quarterly Quarterly Quarterly Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - South East Region - West Thames Area Environment Agency - South West Region - North Wessex Area Environment Agency - South West Region - South Wessex Area Environment Agency - South West Region - Wessex Area Environment Agency - Thames Region - West Area	July 2017 July 2017 July 2017 July 2017 July 2017	Quarterly Quarterly Quarterly Quarterly Quarterly
Local Authority Landfill Coverage Kennet District Council (now part of Wiltshire Council) - Environmental Health Department North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services Swindon Borough Council Wiltshire County Council (now part of Wiltshire Council)	May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites Kennet District Council (now part of Wiltshire Council) - Environmental Health Department North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services Swindon Borough Council Wiltshire County Council (now part of Wiltshire Council)	May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable 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 - South West Region - North Wessex Area Environment Agency - South West Region - South Wessex Area Environment Agency - South West Region - Wessex Area Environment Agency - Thames Region - West Area	March 2003 March 2003 March 2003 March 2003	Not Applicable Not Applicable Not Applicable Not Applicable
Registered Waste Transfer Sites Environment Agency - South West Region - North Wessex Area Environment Agency - South West Region - South Wessex Area Environment Agency - South West Region - Wessex Area Environment Agency - Thames Region - West Area	March 2003 March 2003 March 2003 March 2003	Not Applicable Not Applicable Not Applicable Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency - South West Region - North Wessex Area Environment Agency - South West Region - South Wessex Area Environment Agency - South West Region - Wessex Area Environment Agency - Thames Region - West Area	March 2003 March 2003 March 2003 March 2003	Not Applicable Not Applicable Not Applicable Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	September 2017	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements Wiltshire County Council (now part of Wiltshire Council) Swindon Borough Council Wiltshire Council - Planning Department Kennet District Council (now part of Wiltshire Council) North Wiltshire District Council (now part of Wiltshire Council)	December 2008 February 2016 February 2016 June 2008 June 2009	Annual Rolling Update Annual Rolling Update Annually Not Applicable Not Applicable
Planning Hazardous Substance Consents Wiltshire County Council (now part of Wiltshire Council) Swindon Borough Council Wiltshire Council - Planning Department Kennet District Council (now part of Wiltshire Council) North Wiltshire District Council (now part of Wiltshire Council)	December 2008 February 2016 February 2016 June 2008 June 2009	Annual Rolling Update Annual Rolling Update Annually Not Applicable Not Applicable
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	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2017	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	As notified
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	June 2015	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	September 2017	Quarterly
Fuel Station Entries Catalist Ltd - Experian	August 2017	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Points of Interest - Commercial Services PointX	September 2017	Quarterly
Points of Interest - Education and Health PointX	September 2017	Quarterly
Points of Interest - Manufacturing and Production PointX	September 2017	Quarterly
Points of Interest - Public Infrastructure PointX	September 2017	Quarterly
Points of Interest - Recreational and Environmental PointX	September 2017	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually

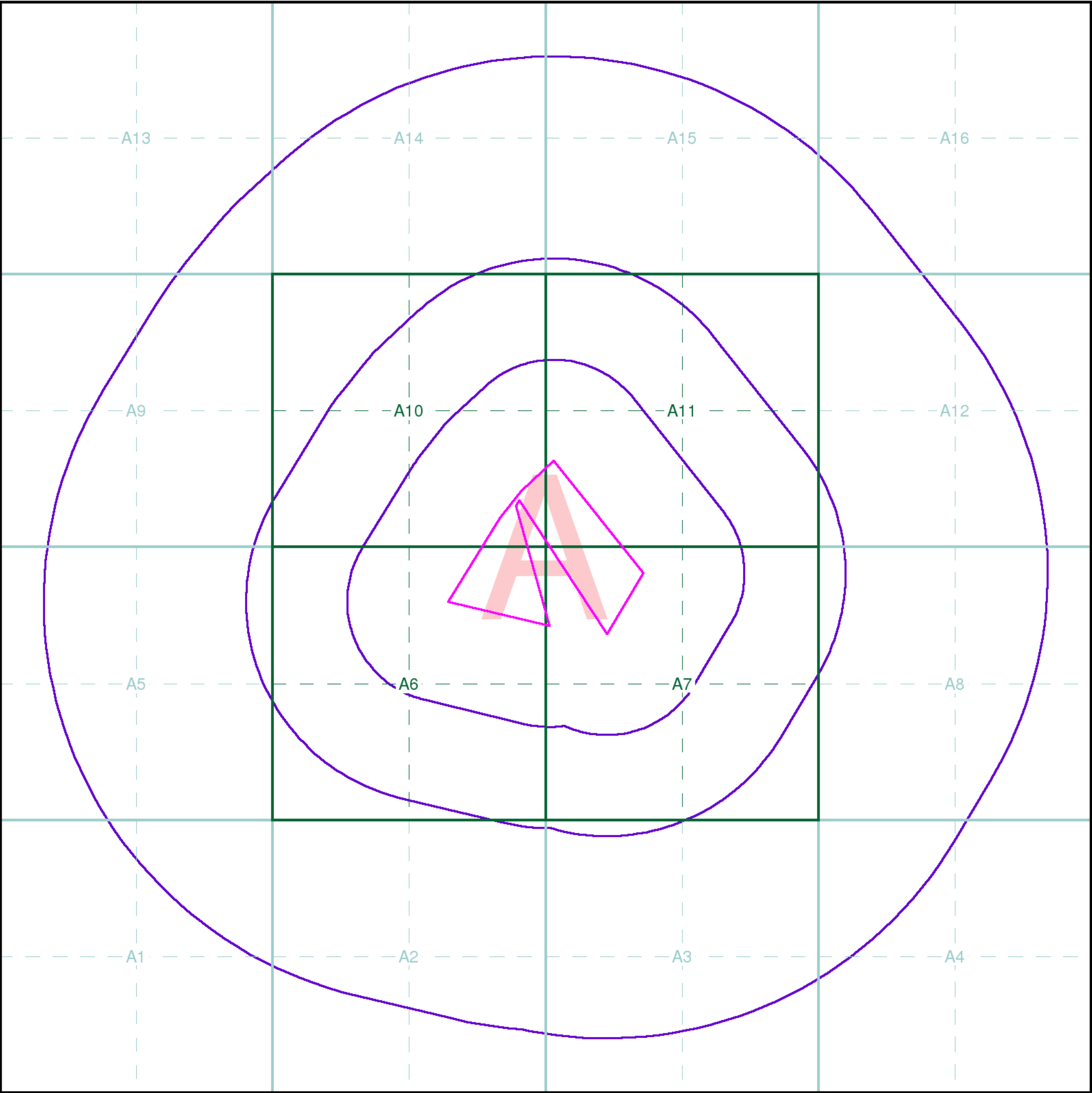
Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	May 2017	Bi-Annually
Areas of Adopted Green Belt North Wiltshire District Council (now part of Wiltshire Council) Swindon Borough Council Wiltshire Council - Planning Department	May 2017 May 2017 May 2017	As notified As notified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

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
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	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Kingsley Dunham 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	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 023 8079 2000 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
4	Swindon Borough Council Premier House, Station Road, SWINDON, Wiltshire, SN1 1TZ	Telephone: 01793 463000 Fax: 01793 466362 Website: www.swindon.gov.uk
5	Kennet District Council (now part of Wiltshire Council) - Environmental Health Department County Hall, Bythesea Road, Trowbridge, Wiltshire, BA15 8JN	Telephone: 0300 456 0100 Email: customerservices@wiltshire.gov.uk Website: www.wiltshire.gov.uk
6	Wiltshire County Council (now part of Wiltshire Council) County Hall, Bythesea Road, Trowbridge, Wiltshire, BA14 8JN	Telephone: 01225 713000 Email: communications@wiltshire.gov.uk Website: www.wiltshire.gov.uk
7	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
8	Natural England County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
9	Environment Agency - Head Office Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	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.



Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

Client Details

Ms C Hidson, Atkins Ltd, Euston Tower, 286 Euston Road, London, NW1 3AT

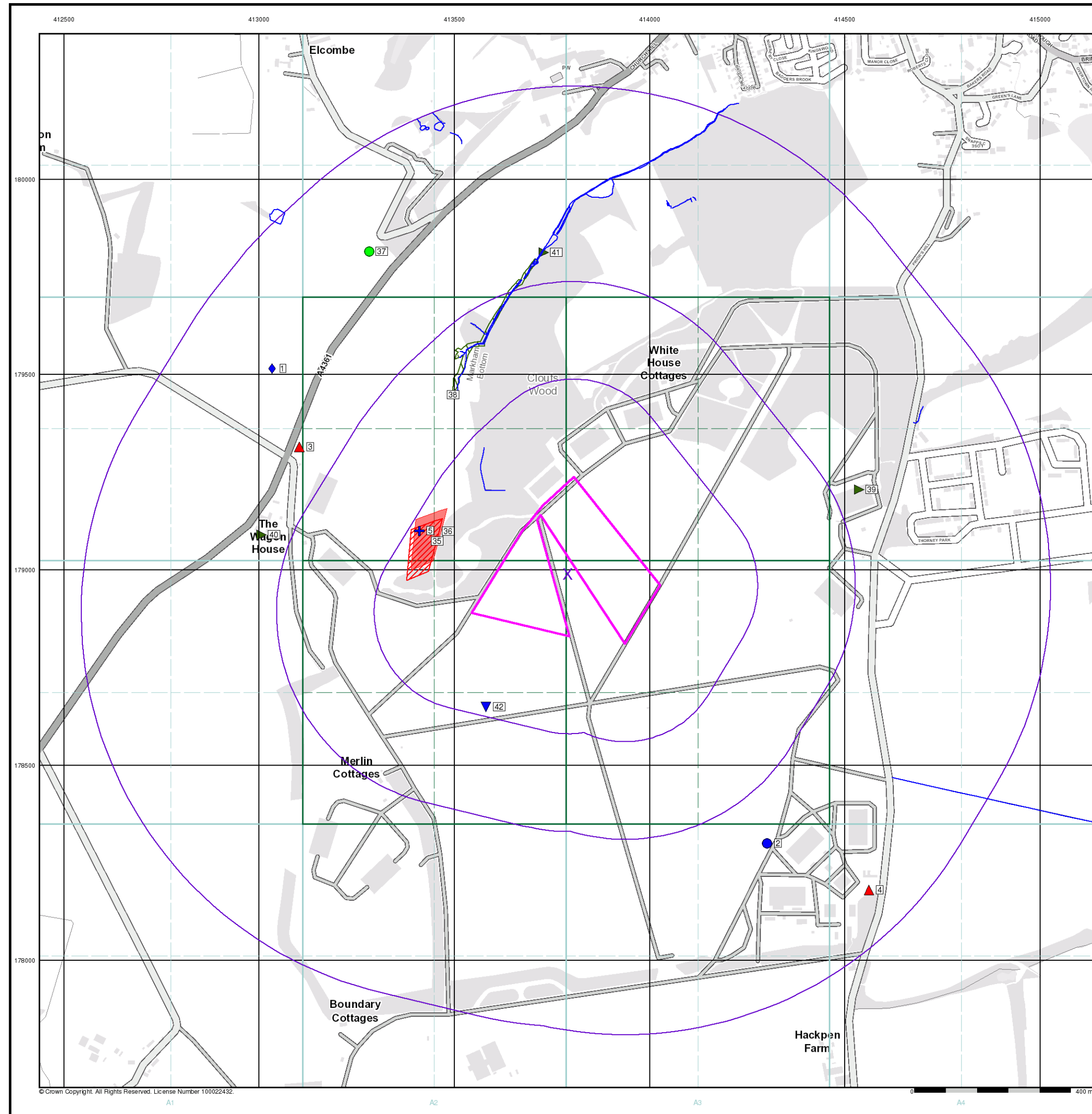
Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413800, 179000
Site Area (Ha): 9.19
Search Buffer (m): 1000

Site Details

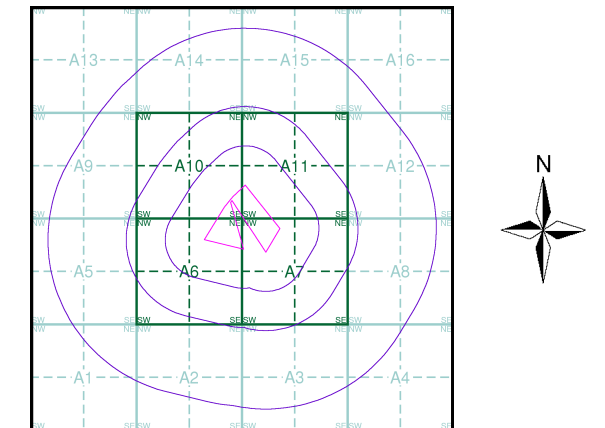
SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU

Full Terms and Conditions can be found on the following link:
<http://www.landmarkinfo.co.uk/Terms/Show/515>



- 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)
 - 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
 - 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)
 - Potentially Infilled Land (Water)
 - 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 - Slice A



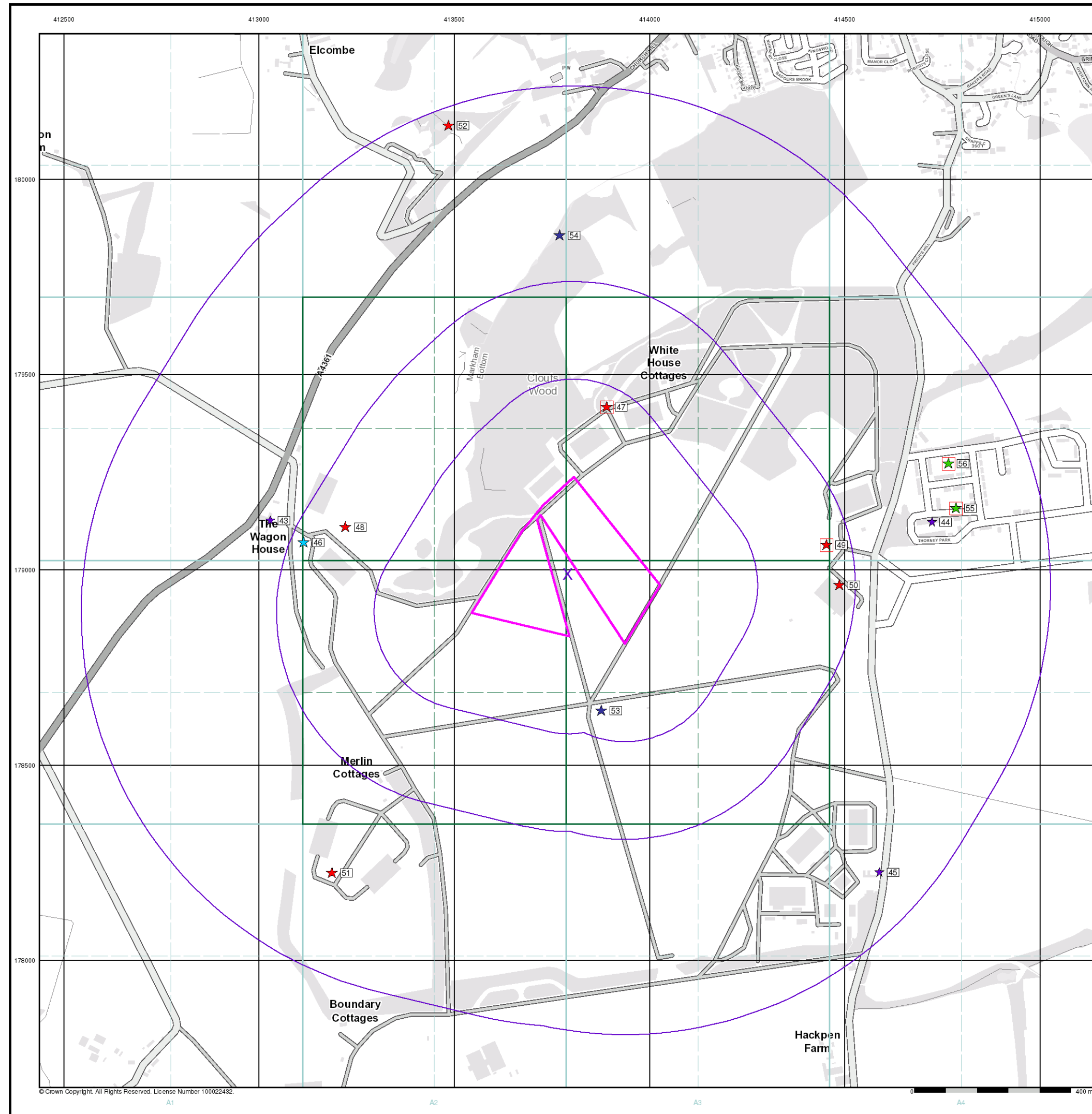
Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

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Industrial Land Use Map

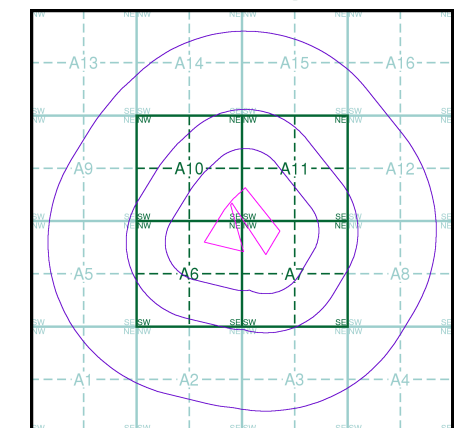
General

- 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



Order Details

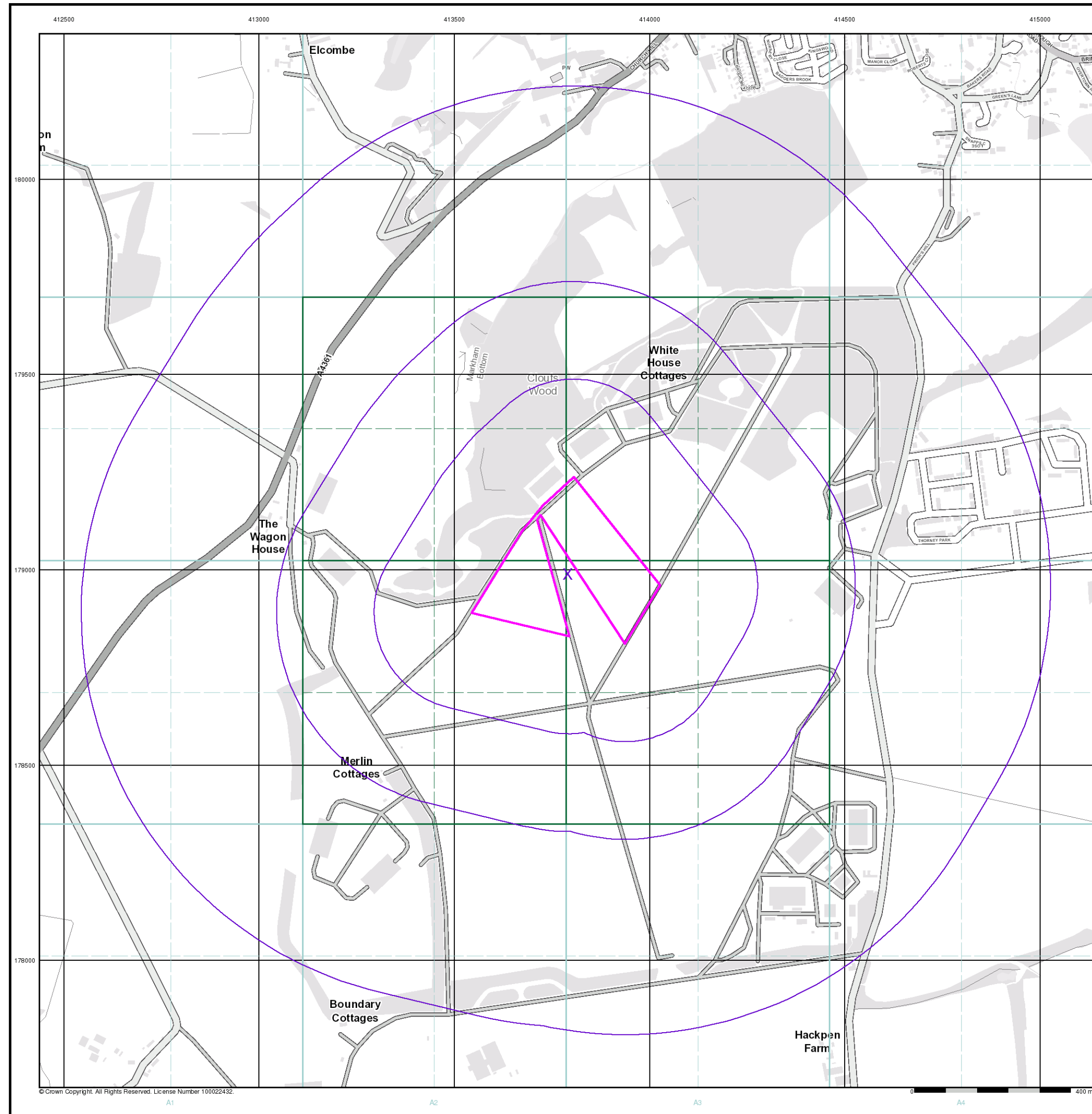
Order Number: 143521870_1_1
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 Search Buffer (m): 1000

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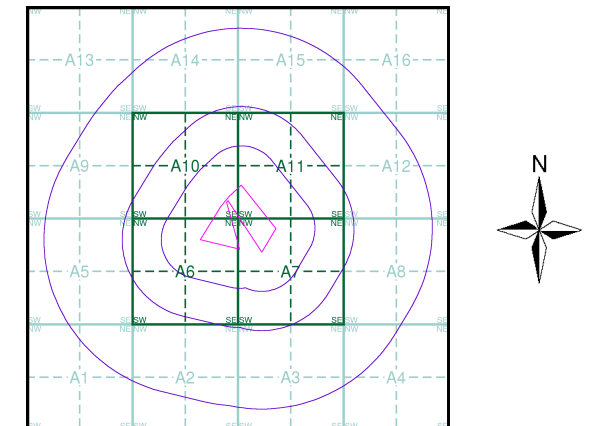
General

- 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

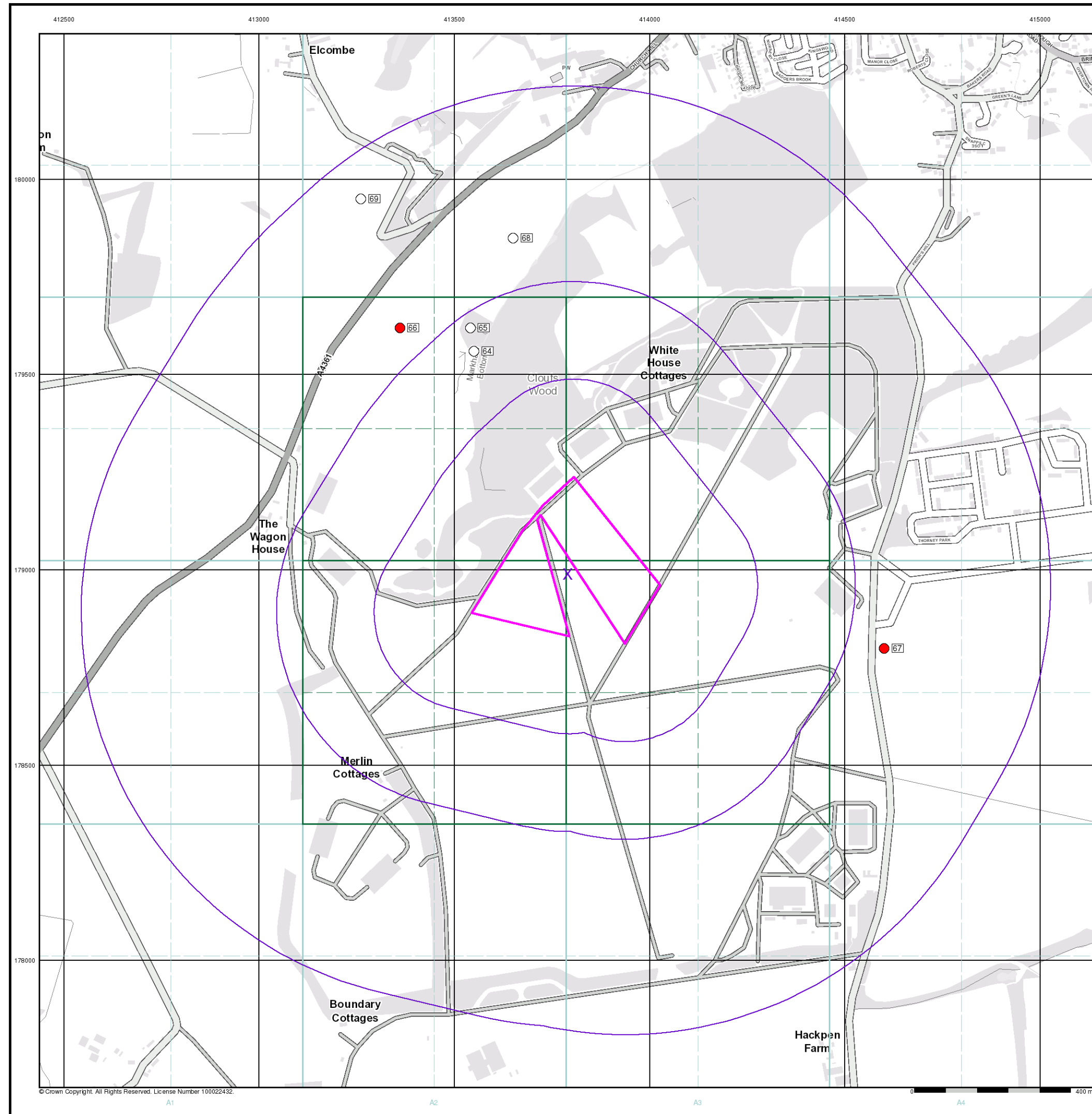


Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
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Search Buffer (m): 1000

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General

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- Bearing Reference Point
- Map ID
- Several of Type at Location

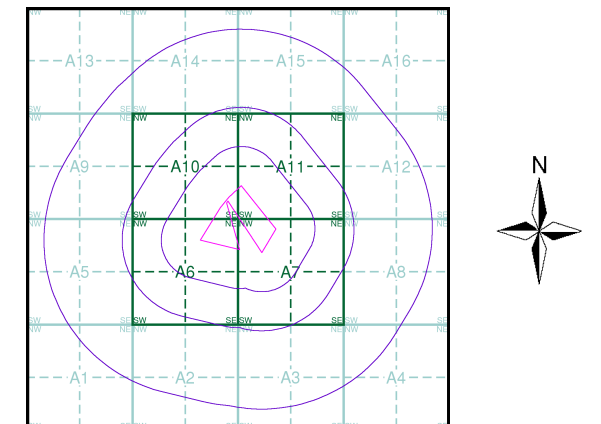
Agency and Hydrological (Boreholes)

- 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



Order Details

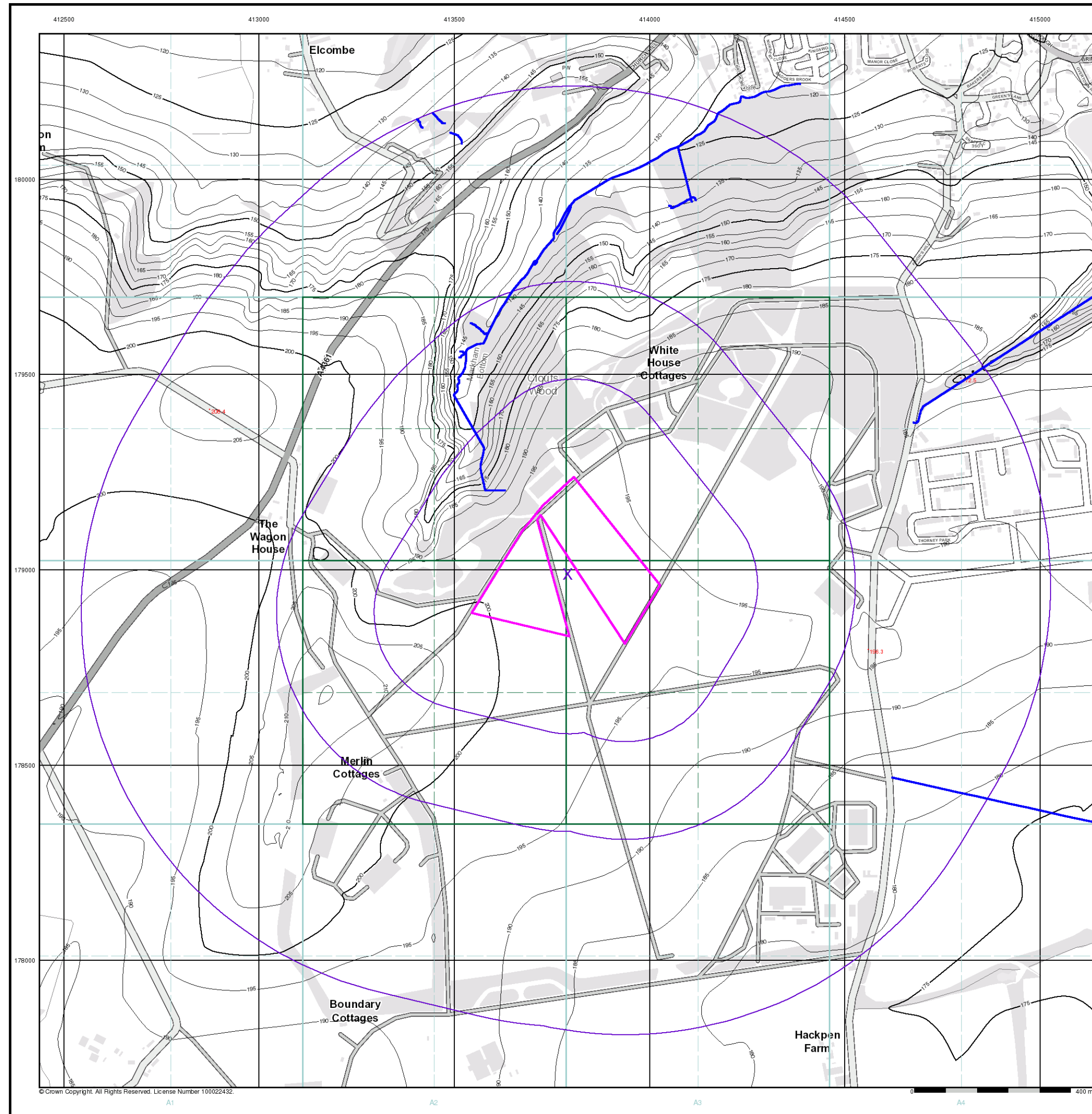
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990

Slice: A
Site Area (Ha): 9.19
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General

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

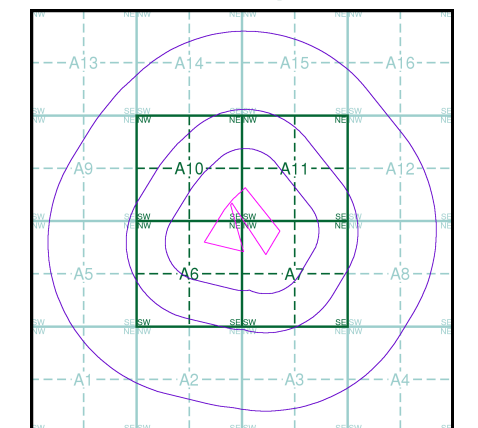
OS Water Network Data

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

Contours (height in meters)

- | | | | | | |
|------------------|-------|-----|----|-----|-----------------|
| Standard Contour | 105 | 100 | 95 | MLW | Mean Low Water |
| Master Contour | | | | MHW | Mean High Water |
| Spot Height | 167.3 | | | | |

OS Water Network Map - Slice A



Order Details

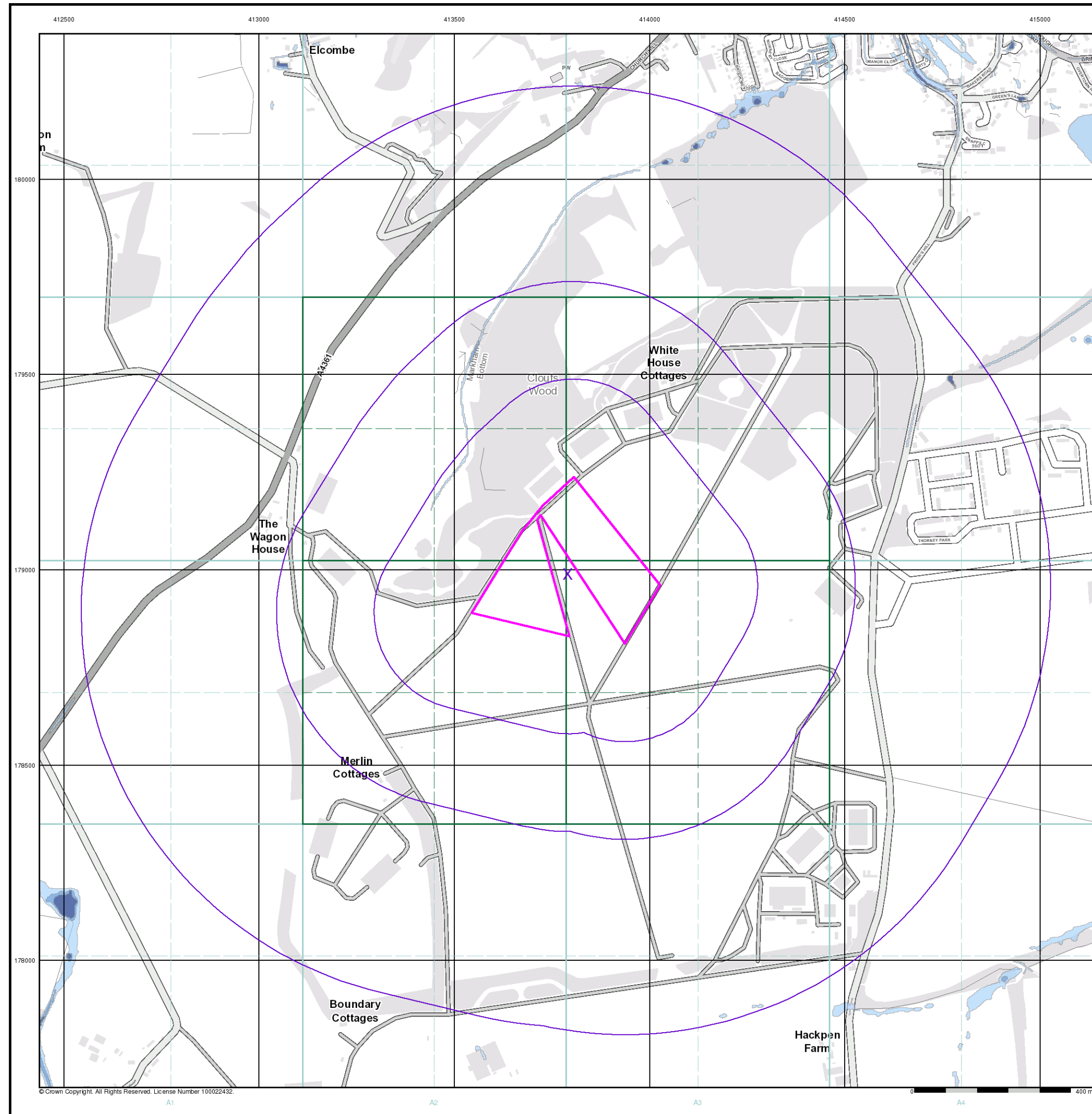
Order Number: 143521870_1_1
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Site Area (Ha): 9.19
Search Buffer (m): 1000

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General

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

Risk of Flooding from Surface Water

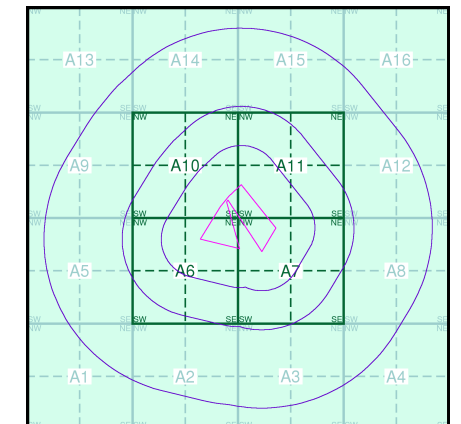
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

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

EANRW Suitability Map - Slice A

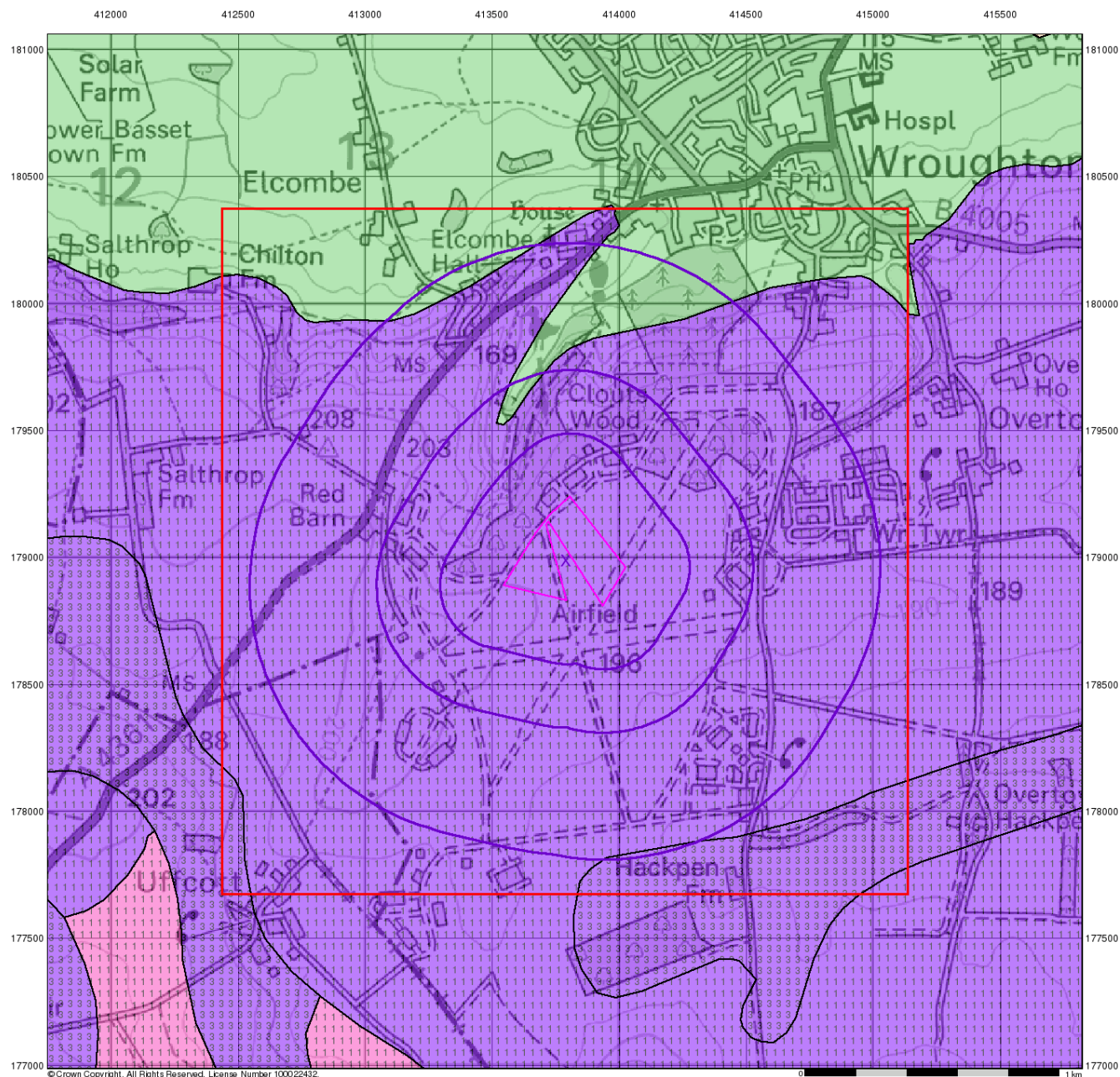


Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
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0

1 km

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Groundwater Vulnerability

General

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

Agency and Hydrological

Geological Classes

Major Aquifer
(Highly Permeable)

Minor Aquifer
(Variably Permeable)

Non Aquifer
(Negligibly Permeable)

Water or Sea

Drift Deposit

Soil Classes

High (H) 1, 2, 3, U

Intermediate (I) 1, 2

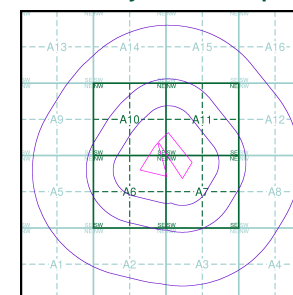
Low

High (H) 1, 2, 3, U

Intermediate (I) 1, 2

Low

Site Sensitivity Context Map - Slice A



Order Details

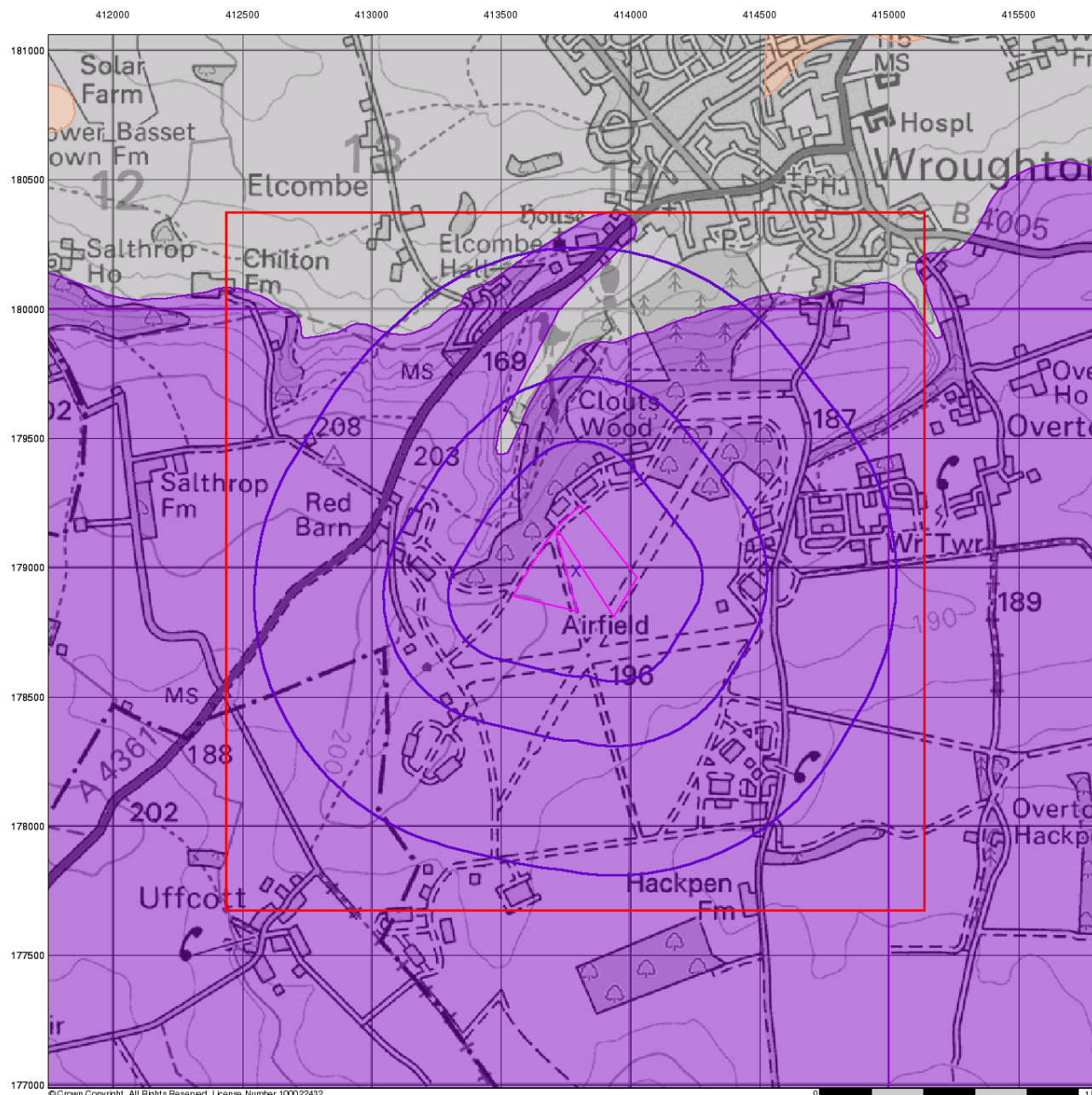
Order Number: 143521870_1_1
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Bedrock Aquifer Designation

General

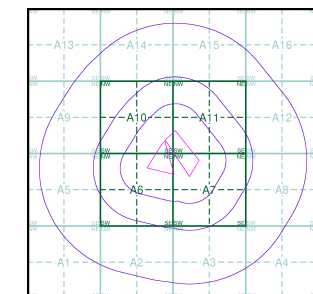
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

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



Order Details

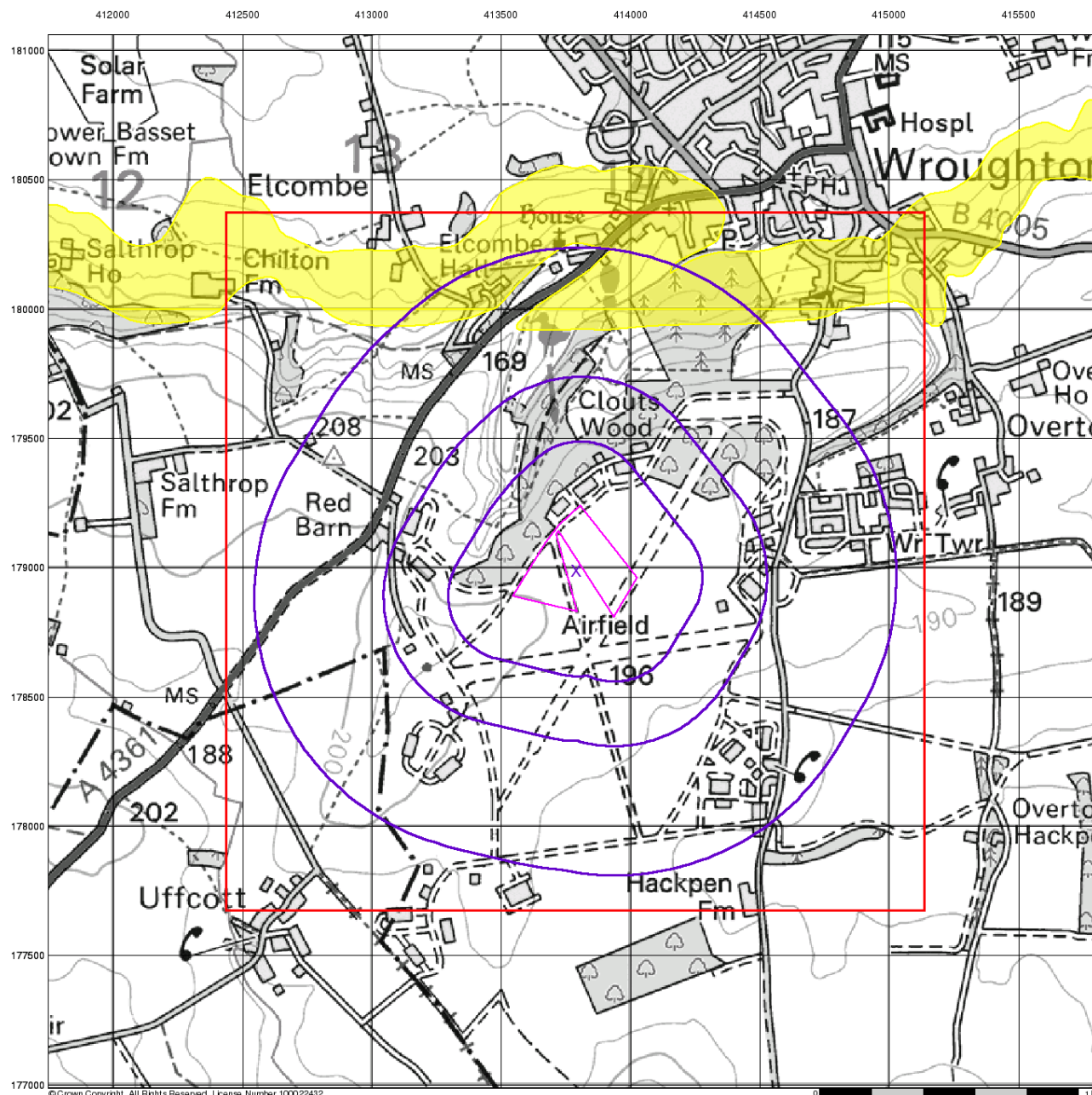
Order Number: 143521870_1_1
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Superficial Aquifer Designation

General

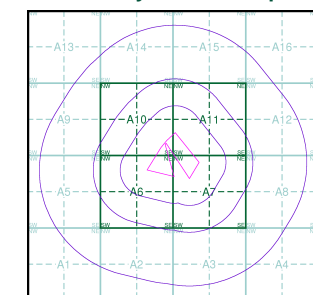
- ◊ Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- Slice
- B Map ID

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



Order Details

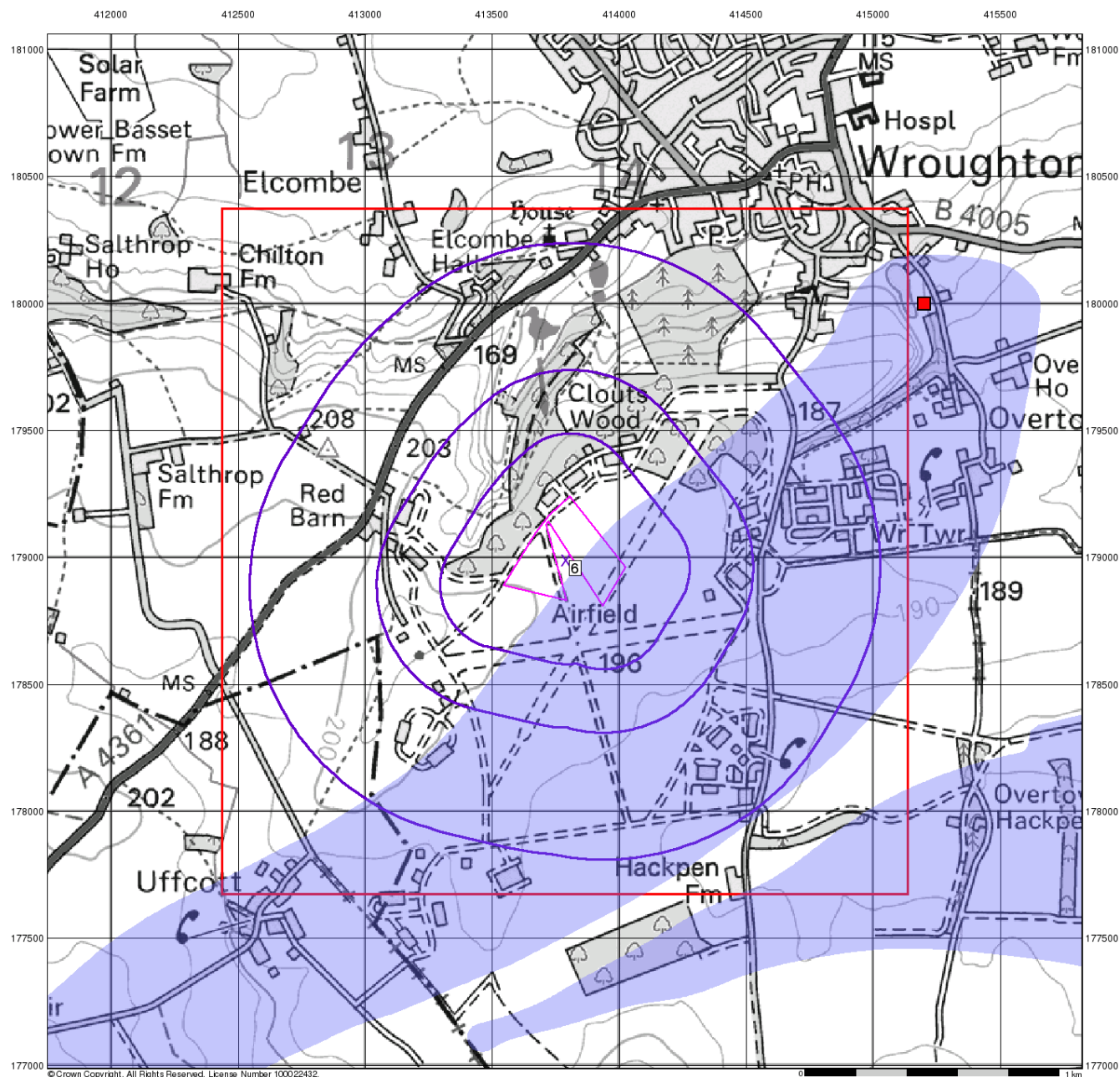
Order Number: 143521870_1_1
 Customer Ref: SMG One Collection Facility, Wroughton
 National Grid Reference: 413790, 178990
 Slice: A
 Site Area (Ha): 9.19
 Search Buffer (m): 1000

Site Details

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Source Protection Zones

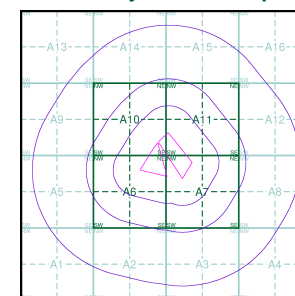
General

- 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)
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



Order Details

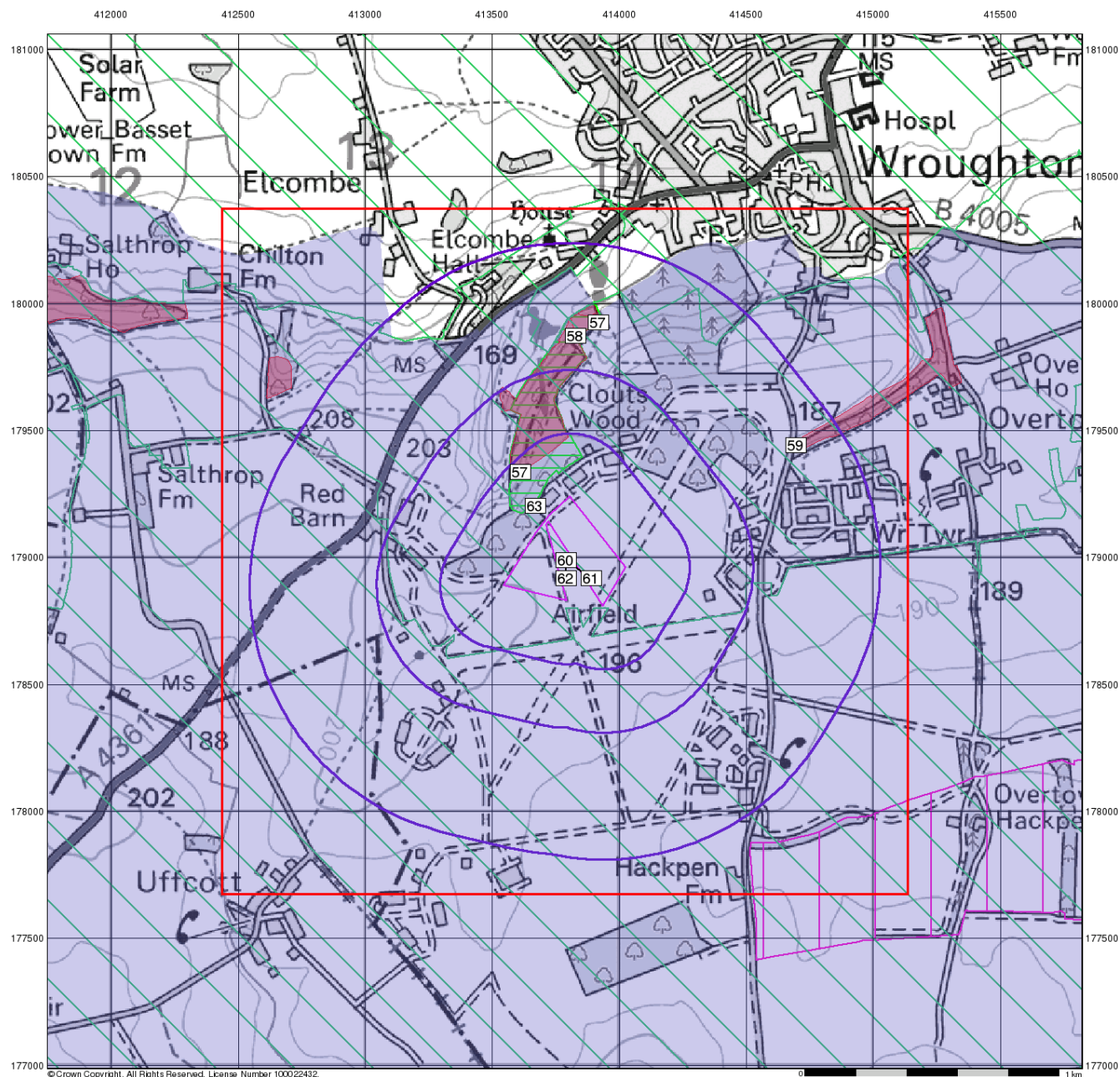
Order Number: 143521870_1_1
 Customer Ref: SMG One Collection Facility, Wroughton
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 Slice: A
 Site Area (Ha): 9.19
 Search Buffer (m): 1000

Site Details

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Sensitive Land Uses

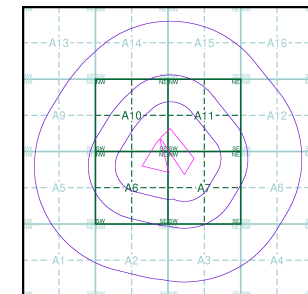
General

- 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



Order Details

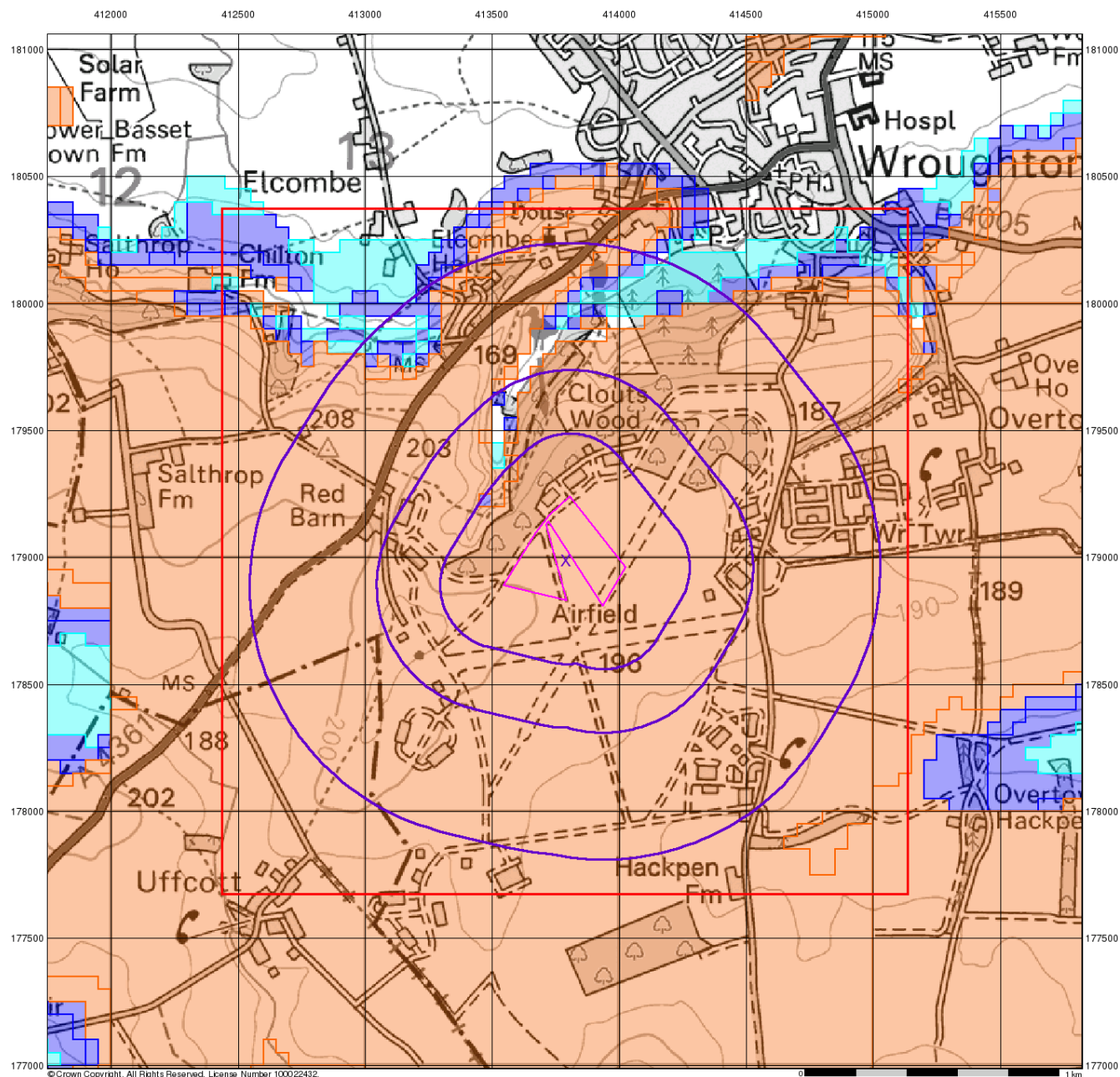
Order Number: 143521870_1_1
 Customer Ref: SMG One Collection Facility, Wroughton
 National Grid Reference: 413790, 178990
 Slice: A
 Site Area (Ha): 9.19
 Search Buffer (m): 1000

Site Details

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BGS Flood GFS Data

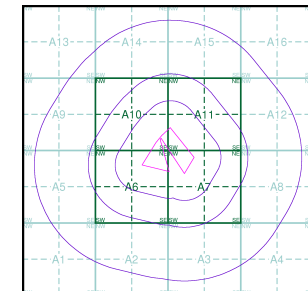
General

- 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: 143521870_1_1
 Customer Ref: SMG One Collection Facility, Wroughton
 National Grid Reference: 413790, 178990
 Slice: A
 Site Area (Ha): 9.19
 Search Buffer (m): 1000

Site Details

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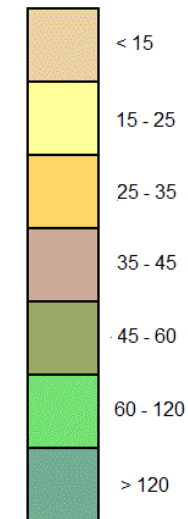


General

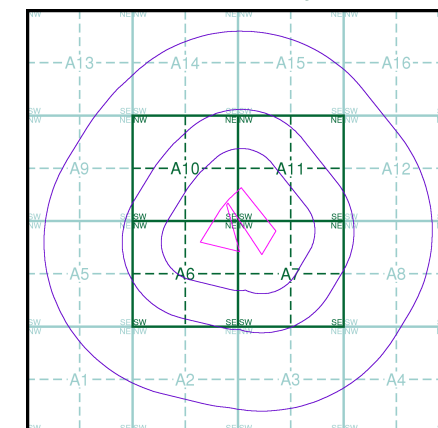
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg



Estimated Soil Chemistry Arsenic - Slice A



Order Details

Order Details:

Customer Ref:

National Grid Reference:

Slice:

Site Area (Ha):

Search Buffer (m):

143521870_1_1

SMG One Collection Facility,
Wroughton

413790, 178990

A

9.19

1000

Site Details

SMG One Collection Facility, Science Museum, Wroughton,
SWINDON, SN4 9NU



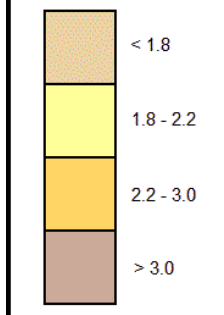
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General

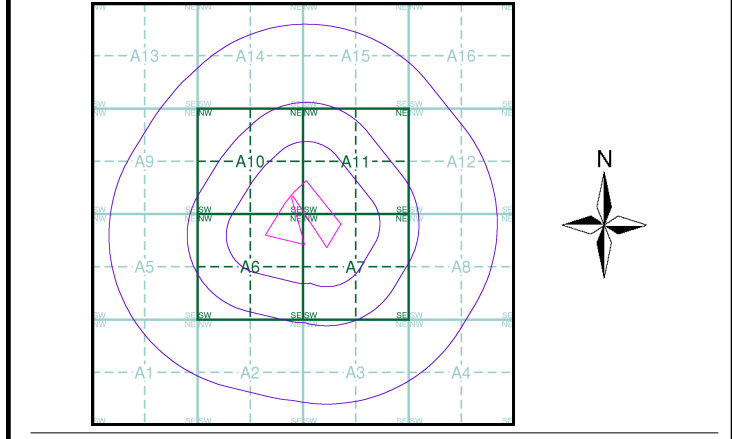
Specified Site Specified Buffer(s) Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg



Estimated Soil Chemistry Cadmium - Slice A

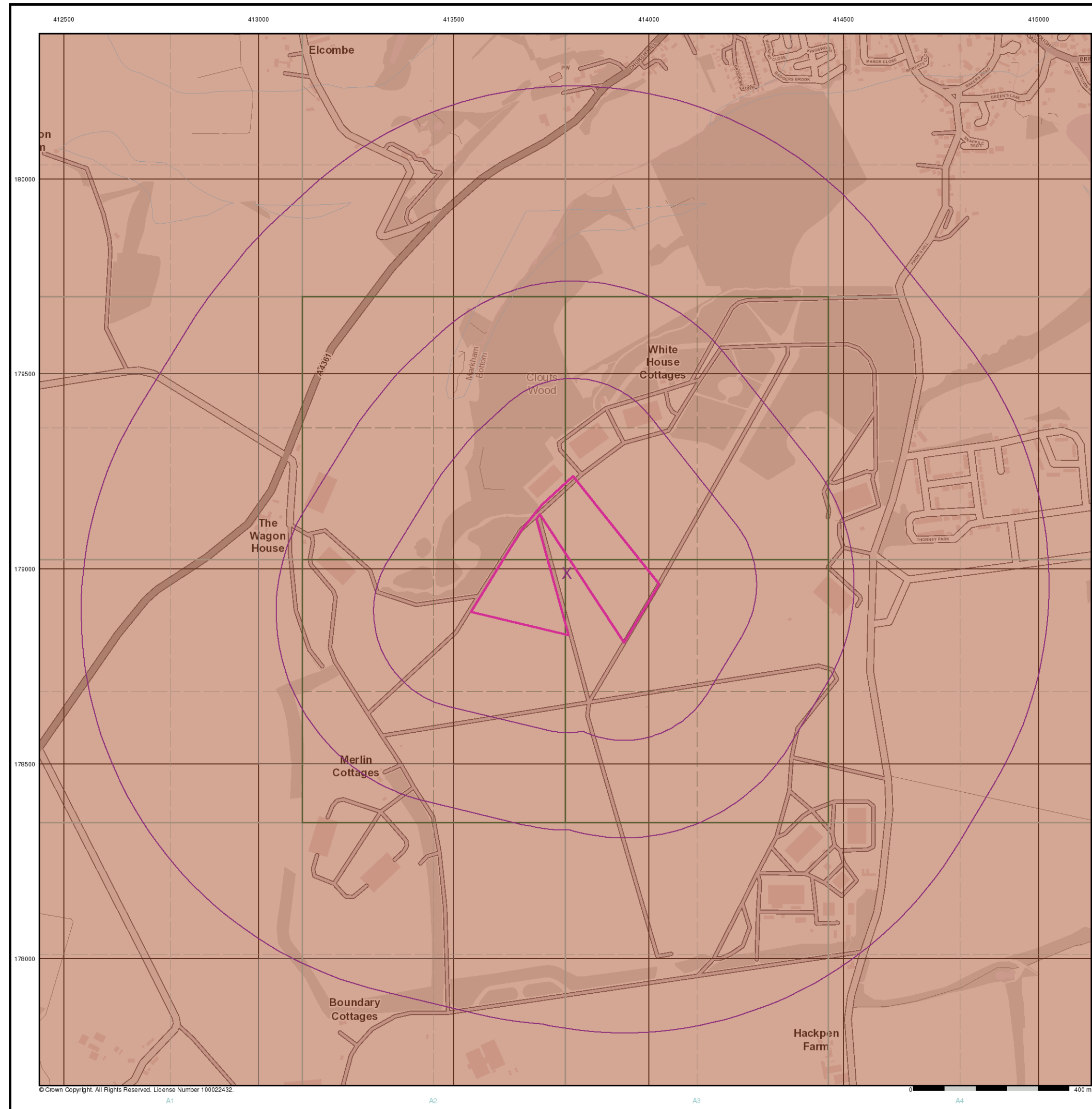


Order Details

Order Details: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU



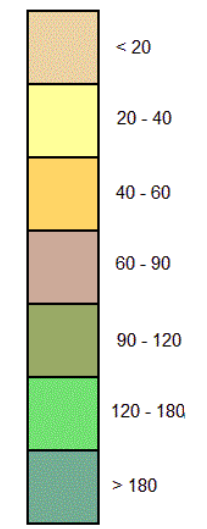
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General

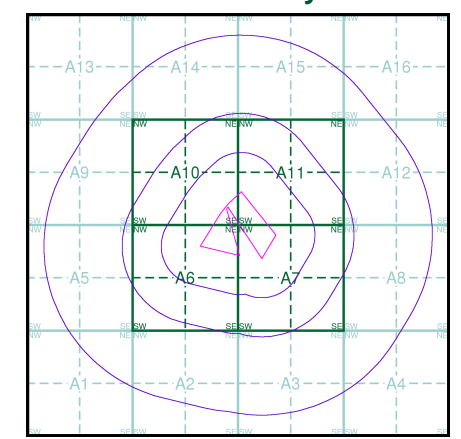
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- Specified Buffer(s)
- Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg



Estimated Soil Chemistry Chromium - Slice A

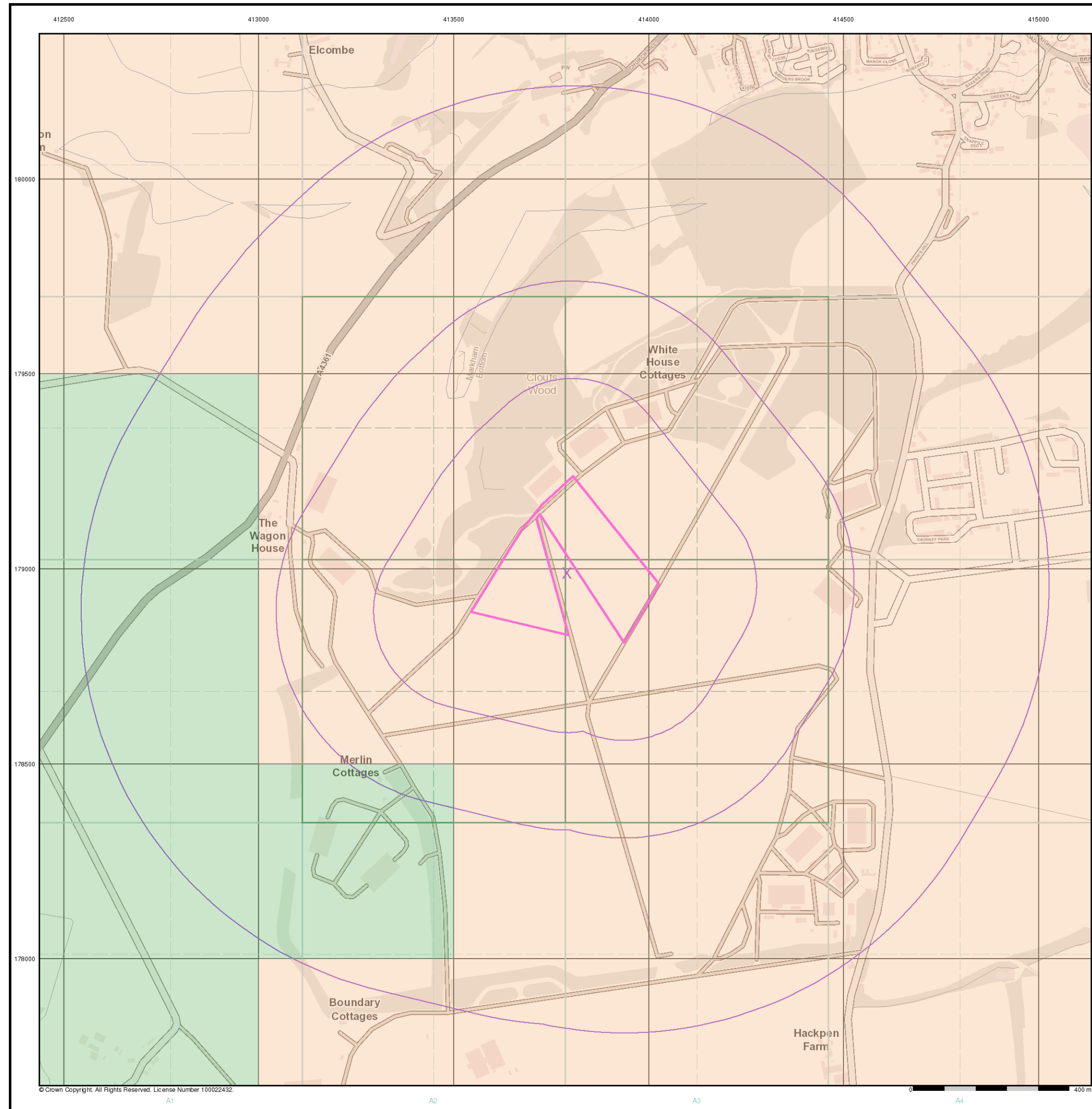


Order Details

Order Details: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

Site Details

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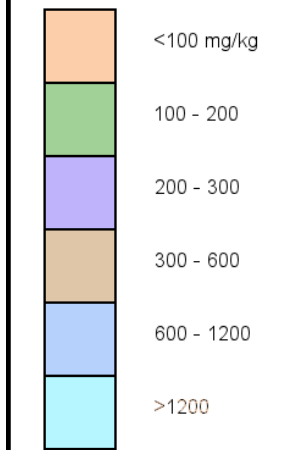
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General

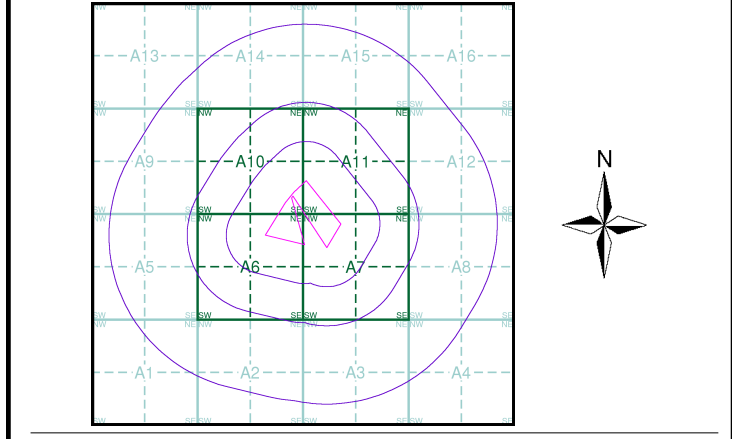
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- Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg



Estimated Soil Chemistry Lead - Slice A



Order Details

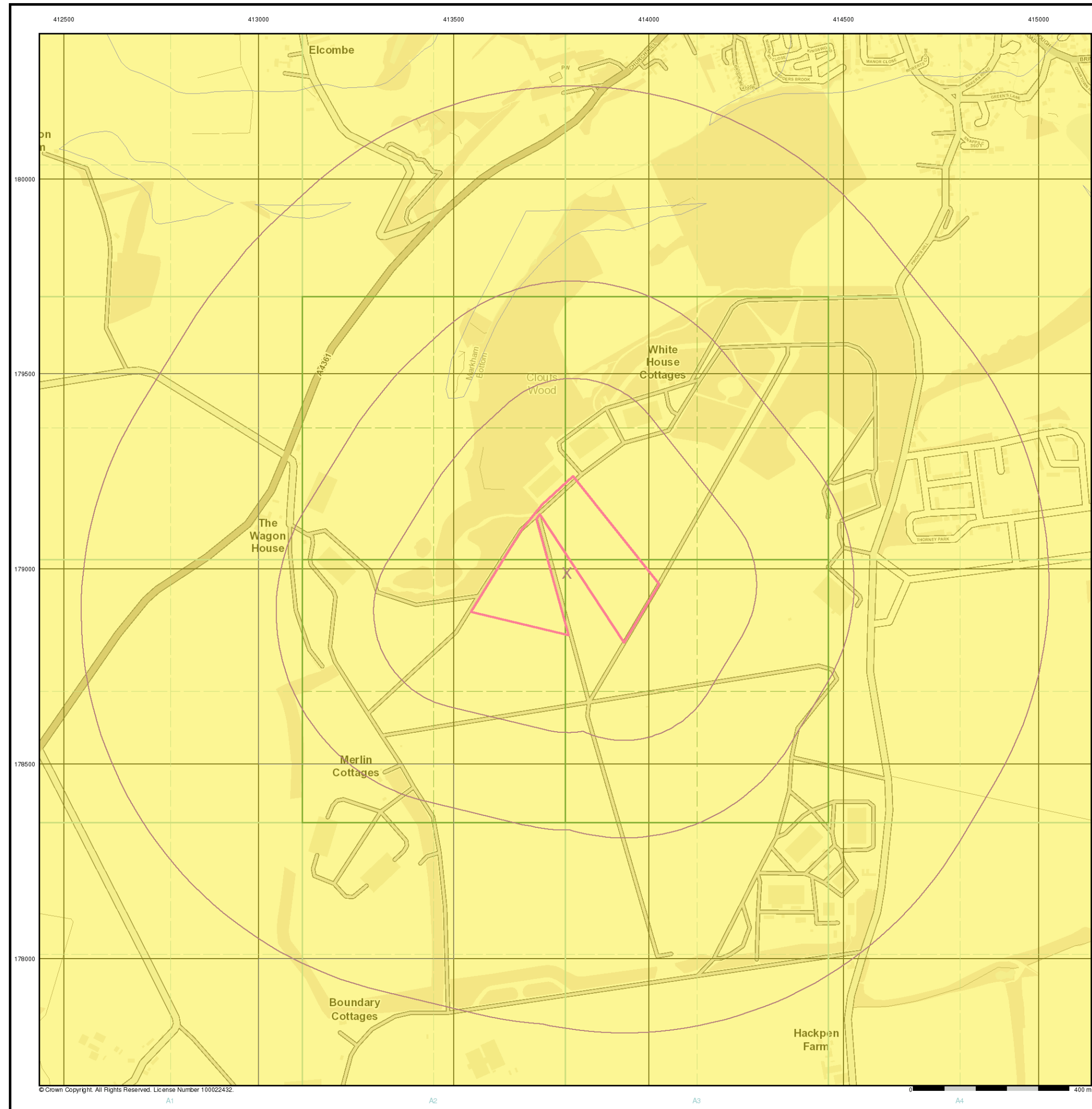
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Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

Site Details

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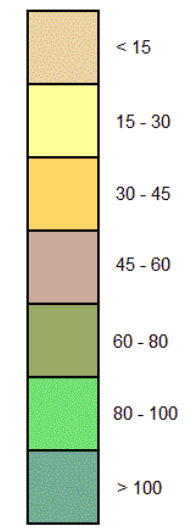
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General

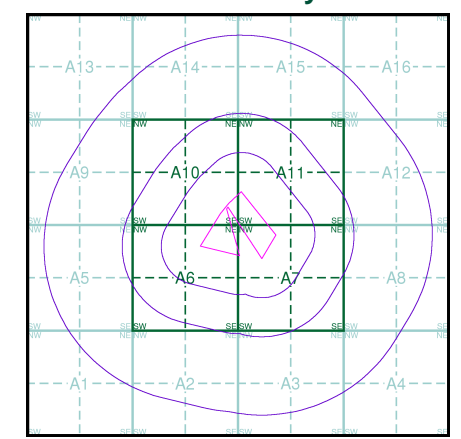
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg



Estimated Soil Chemistry Nickel - Slice A



Order Details

Order Details: 143521870_1_1

Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990

Slice: A

Site Area (Ha): 9.19

Search Buffer (m): 1000

Site Details

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Historical Mapping Legends

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



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



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



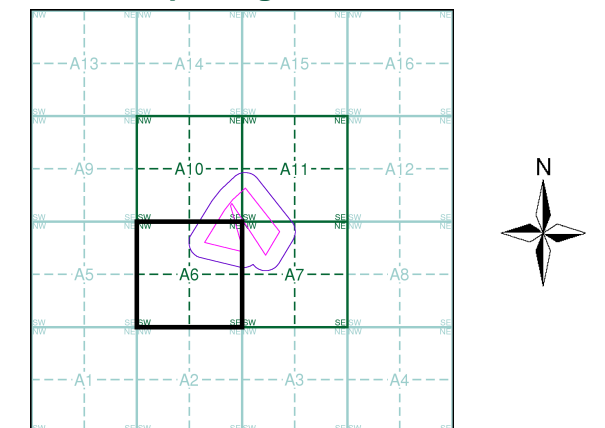
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Wiltshire	1:2,500	1886	2
Wiltshire	1:2,500	1900	3
Wiltshire	1:2,500	1923	4
Ordnance Survey Plan	1:2,500	1979	5
Large-Scale National Grid Data	1:2,500	1994	6
Historical Aerial Photography	1:2,500	2000	7

Historical Map - Segment A6



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990

Slice: A

Site Area (Ha): 9.19

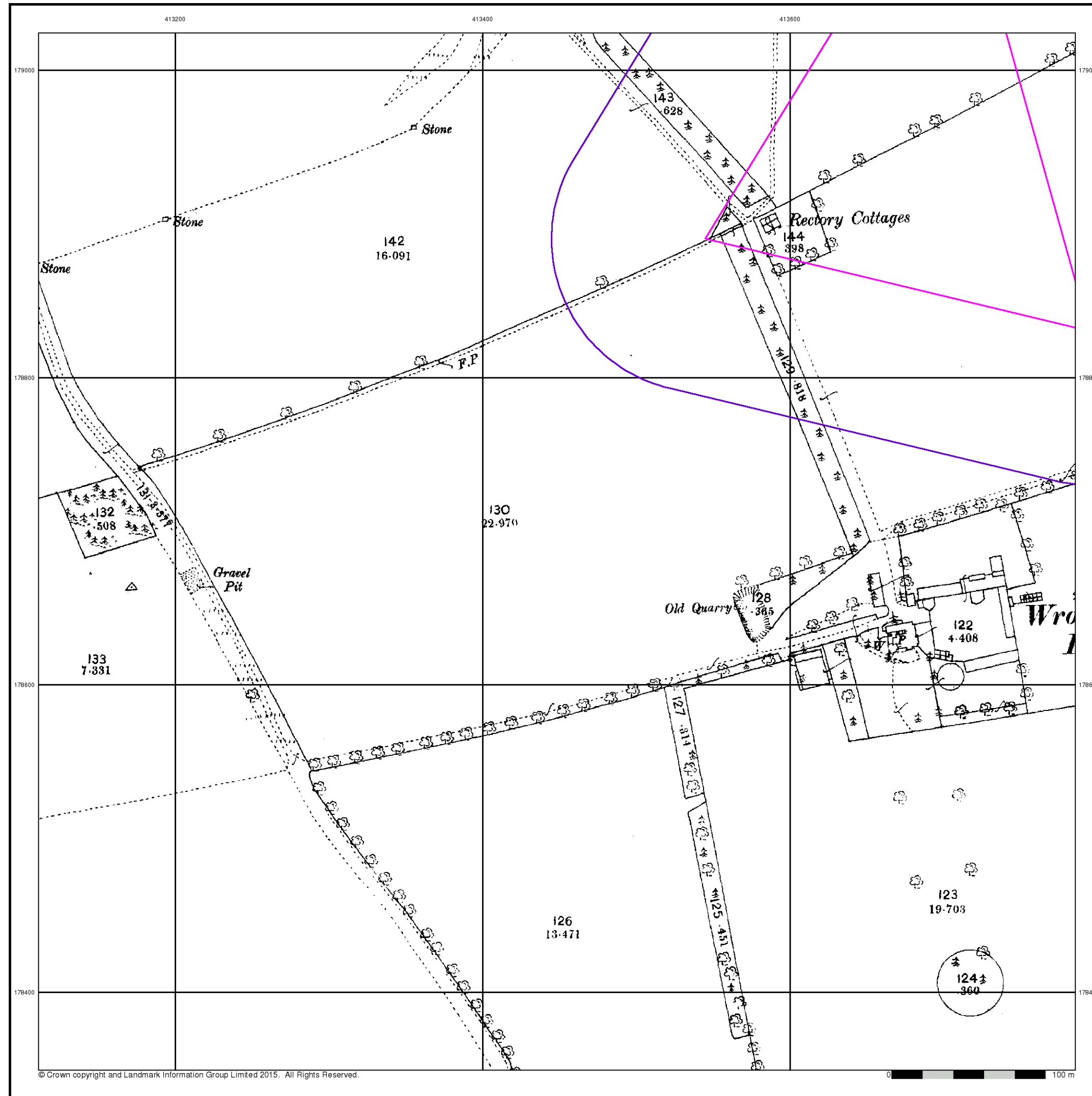
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Site Details

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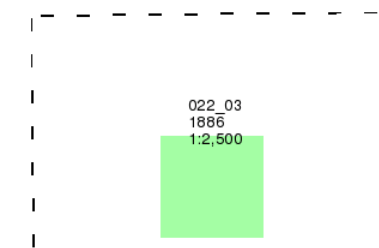
Wiltshire

Published 1886

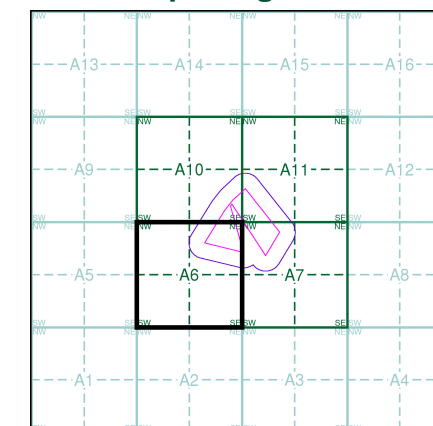
Source map scale - 1:2,500

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.

Map Name(s) and Date(s)



Historical Map - Segment A6



Order Details

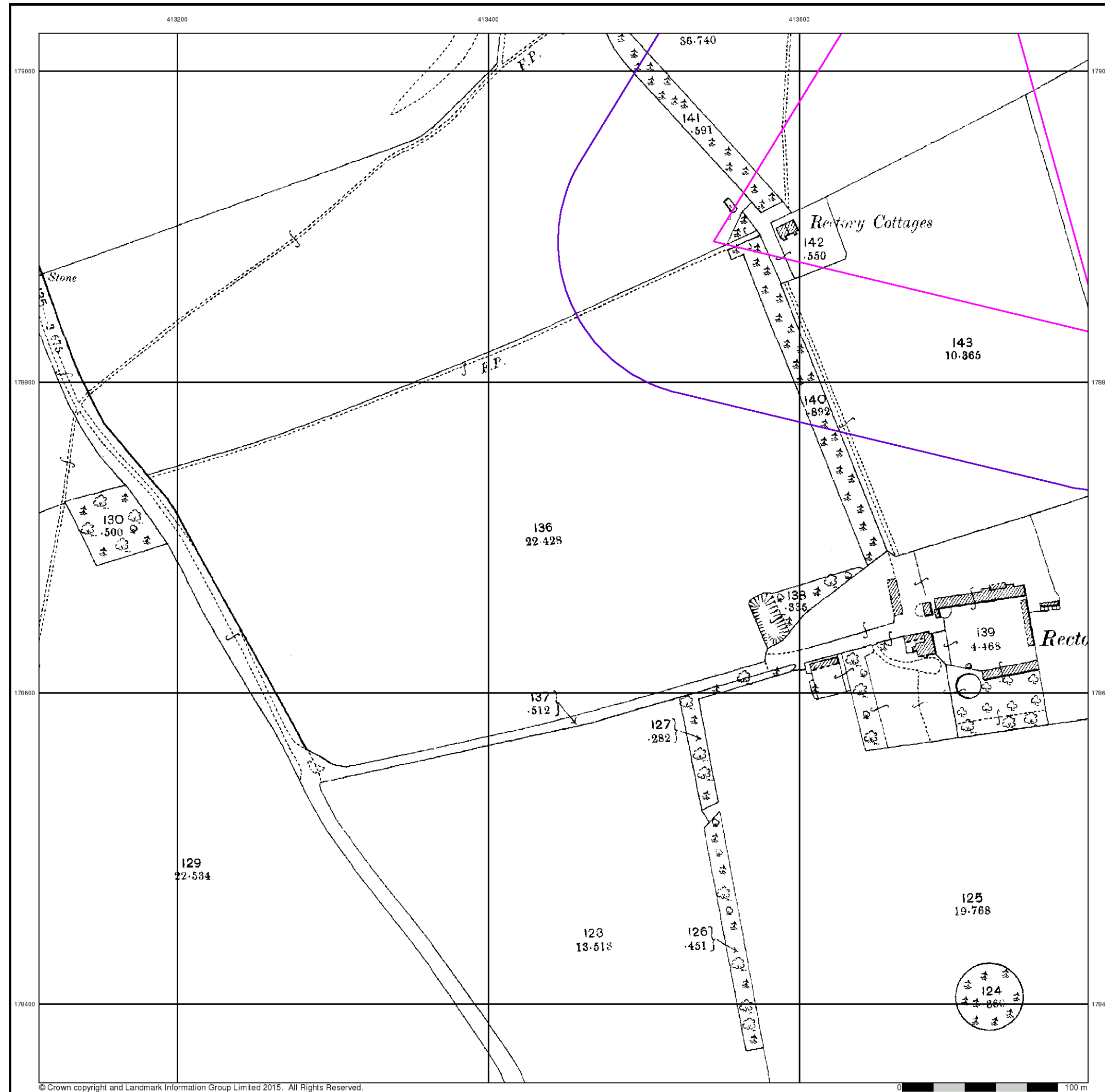
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Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

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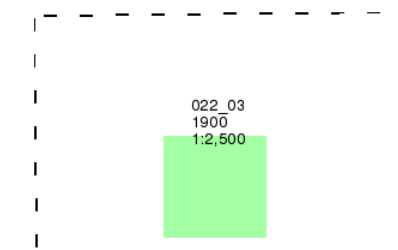
Wiltshire

Published 1900

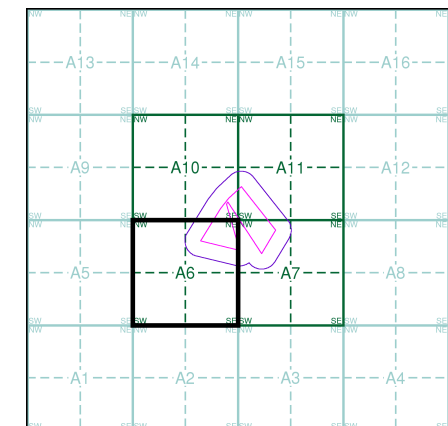
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Map Name(s) and Date(s)



Historical Map - Segment A6



Order Details

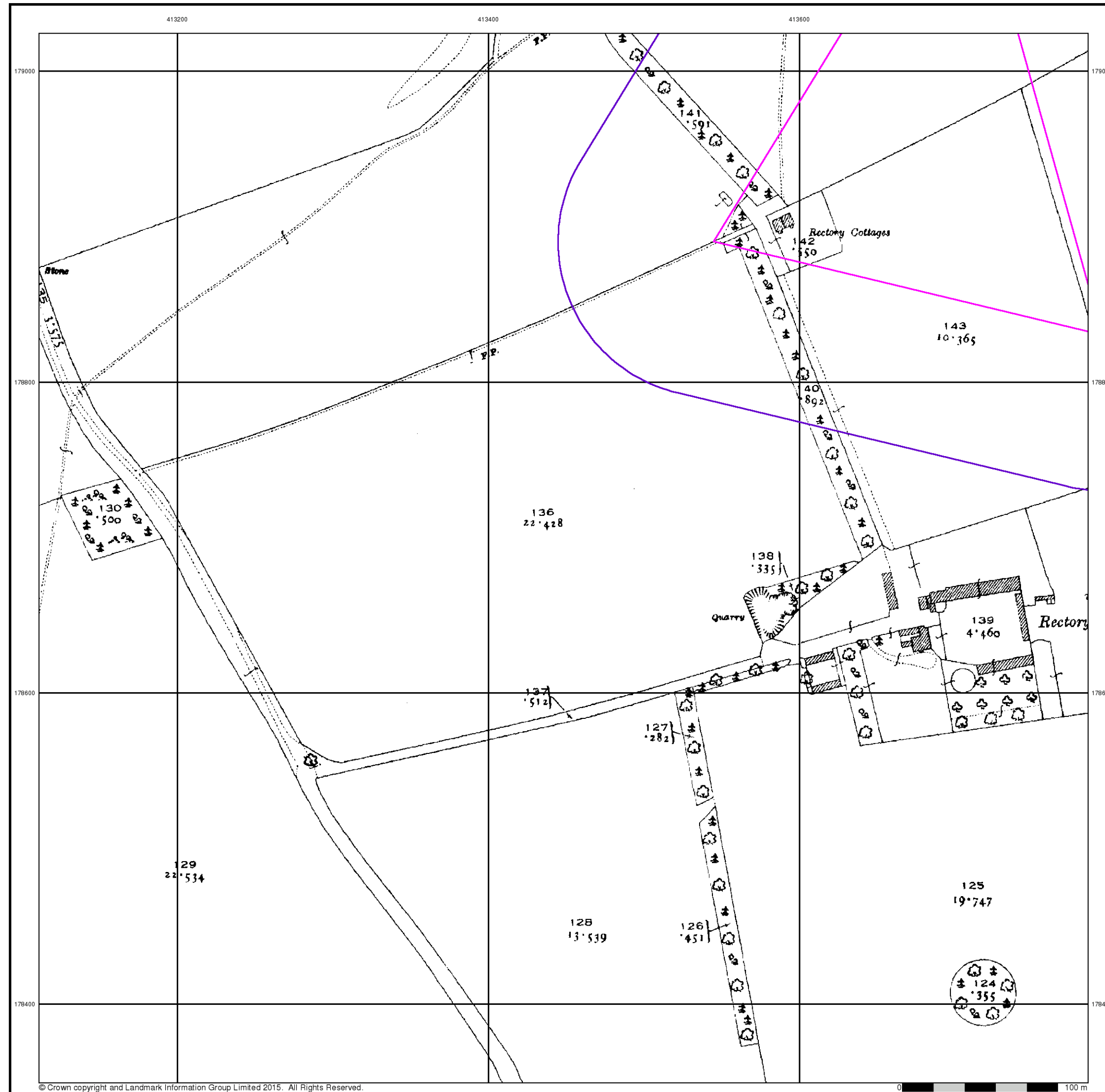
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Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

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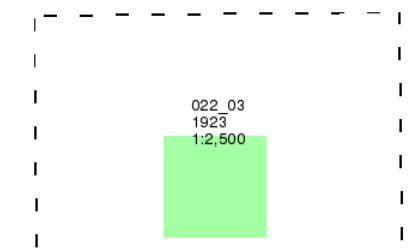
Wiltshire

Published 1923

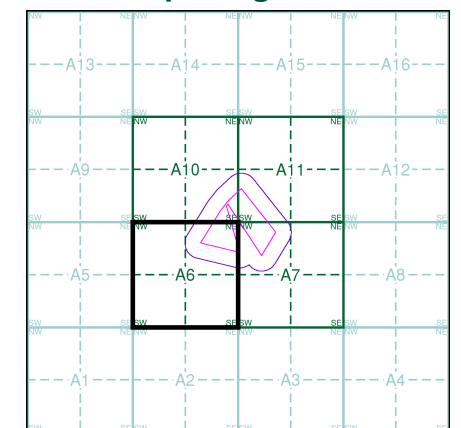
Source map scale - 1:2,500

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 A6

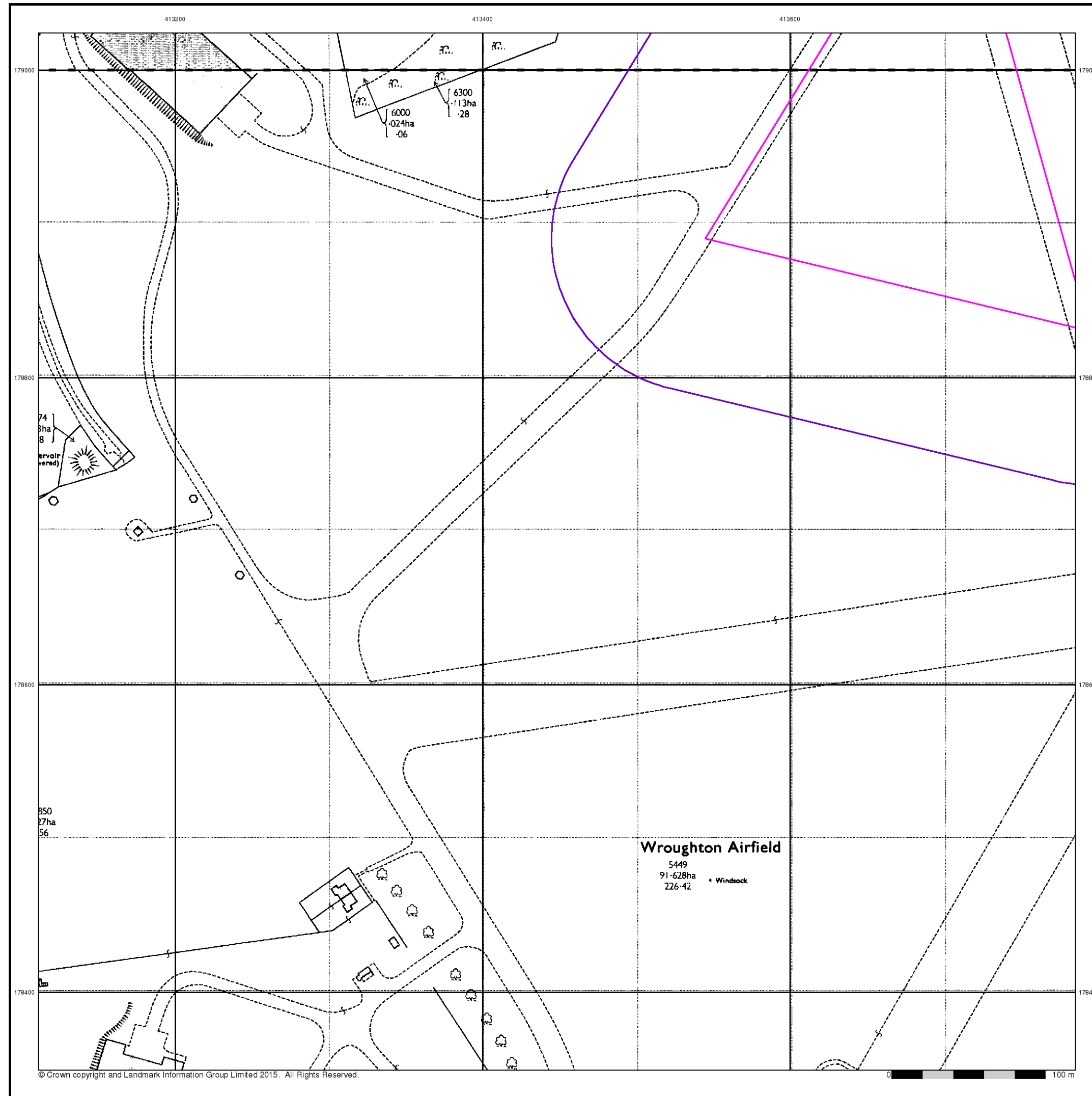


Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1979

Source map scale - 1:2,500

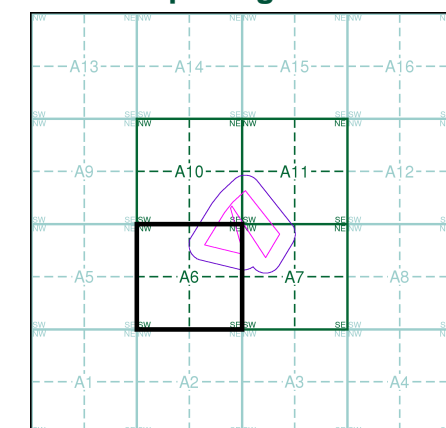
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. 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)

SU1379
1979
1:2,500

SU1378
1979
1:2,500

Historical Map - Segment A6

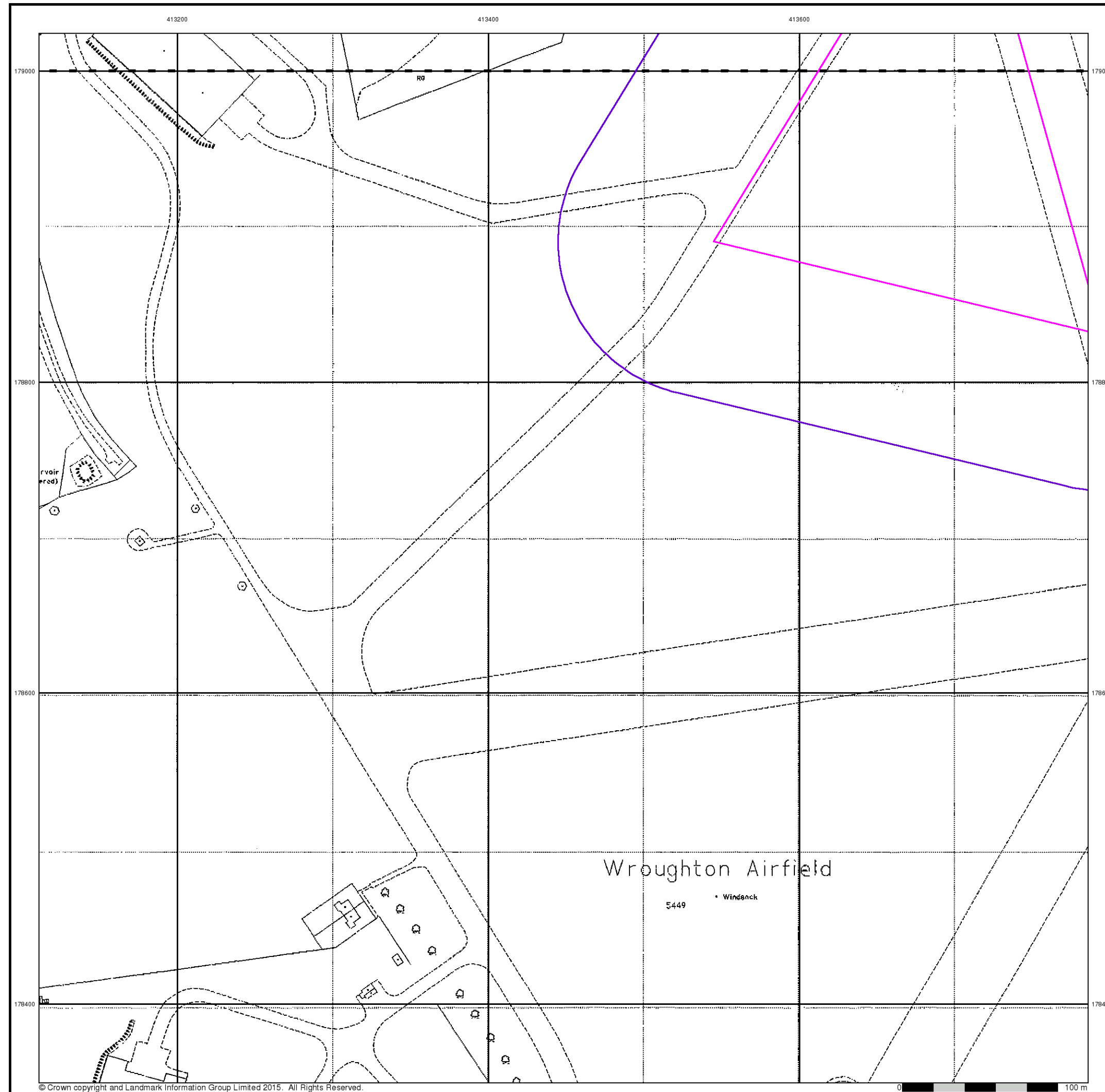


Order Details

Order Number:	143521870_1_1
Customer Ref:	SMG One Collection Facility, Wroughton
National Grid Reference:	413790, 178990
Slice:	A
Site Area (Ha):	9.19
Search Buffer (m):	100

Site Details

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Large-Scale National Grid Data

Published 1994

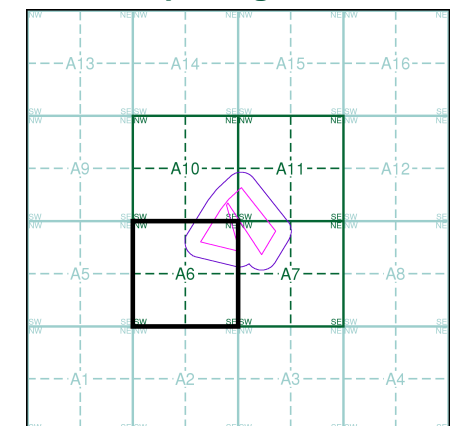
Source map scale - 1:2,500

'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)

SU1379	1994	1:2,500
SU1378	1994	1:2,500

Historical Map - Segment A6



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990

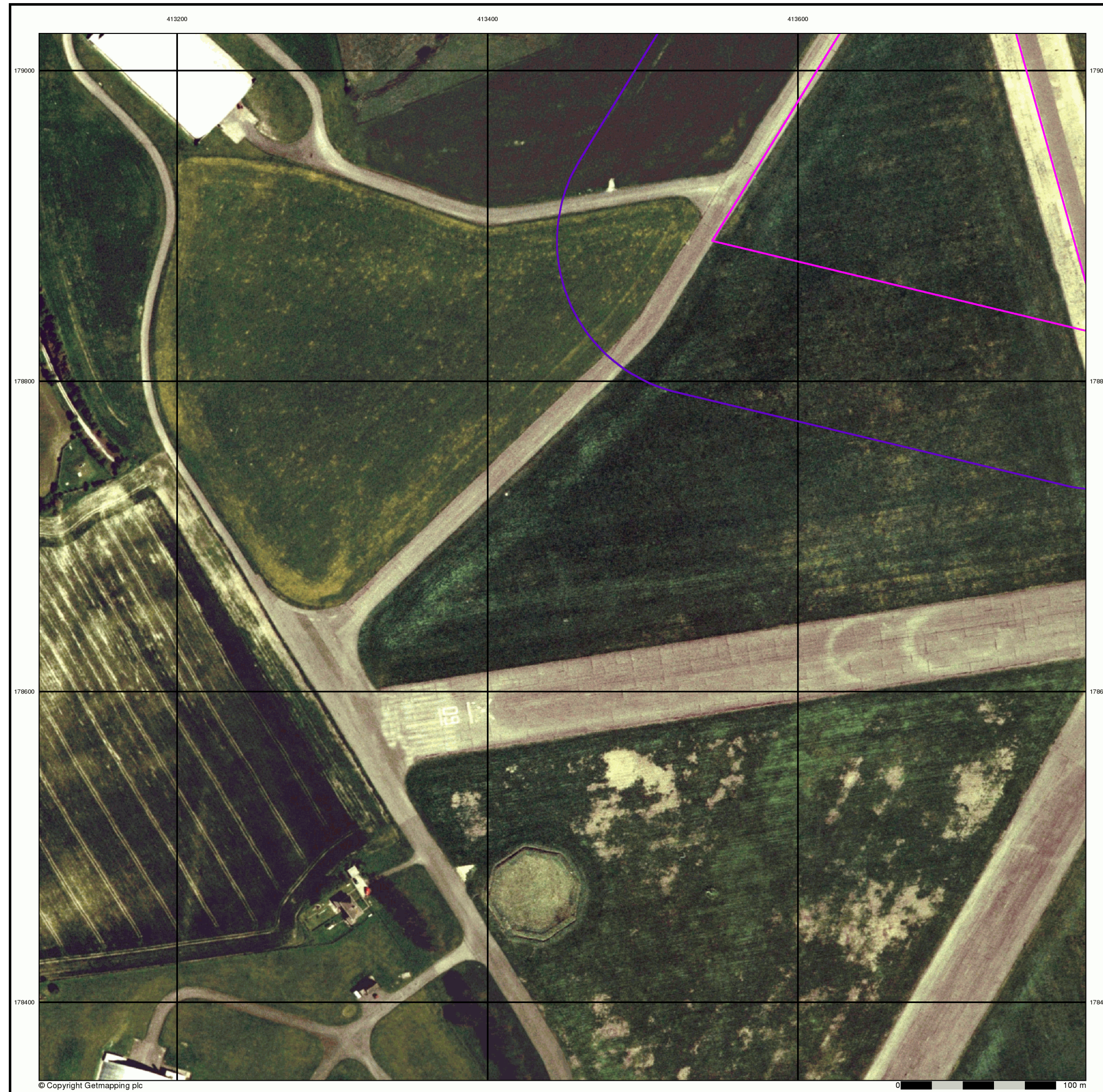
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

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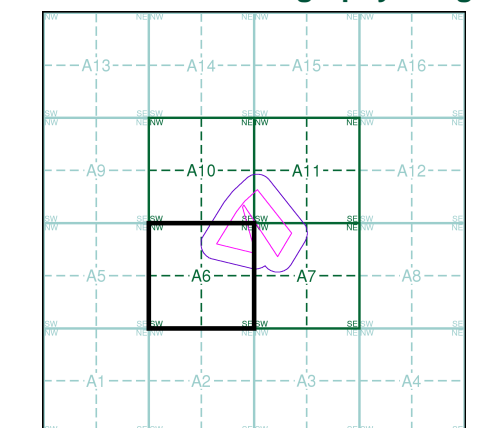


Historical Aerial Photography

Published 2000

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 A6



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

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Historical Mapping Legends

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



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



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



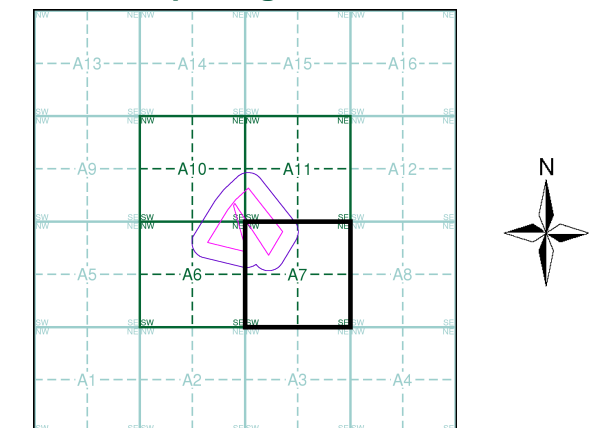
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Wiltshire	1:2,500	1886	2
Wiltshire	1:2,500	1900	3
Wiltshire	1:2,500	1923	4
Ordnance Survey Plan	1:2,500	1979 - 1980	5
Large-Scale National Grid Data	1:2,500	1994	6
Historical Aerial Photography	1:2,500	2000	7

Historical Map - Segment A7



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990

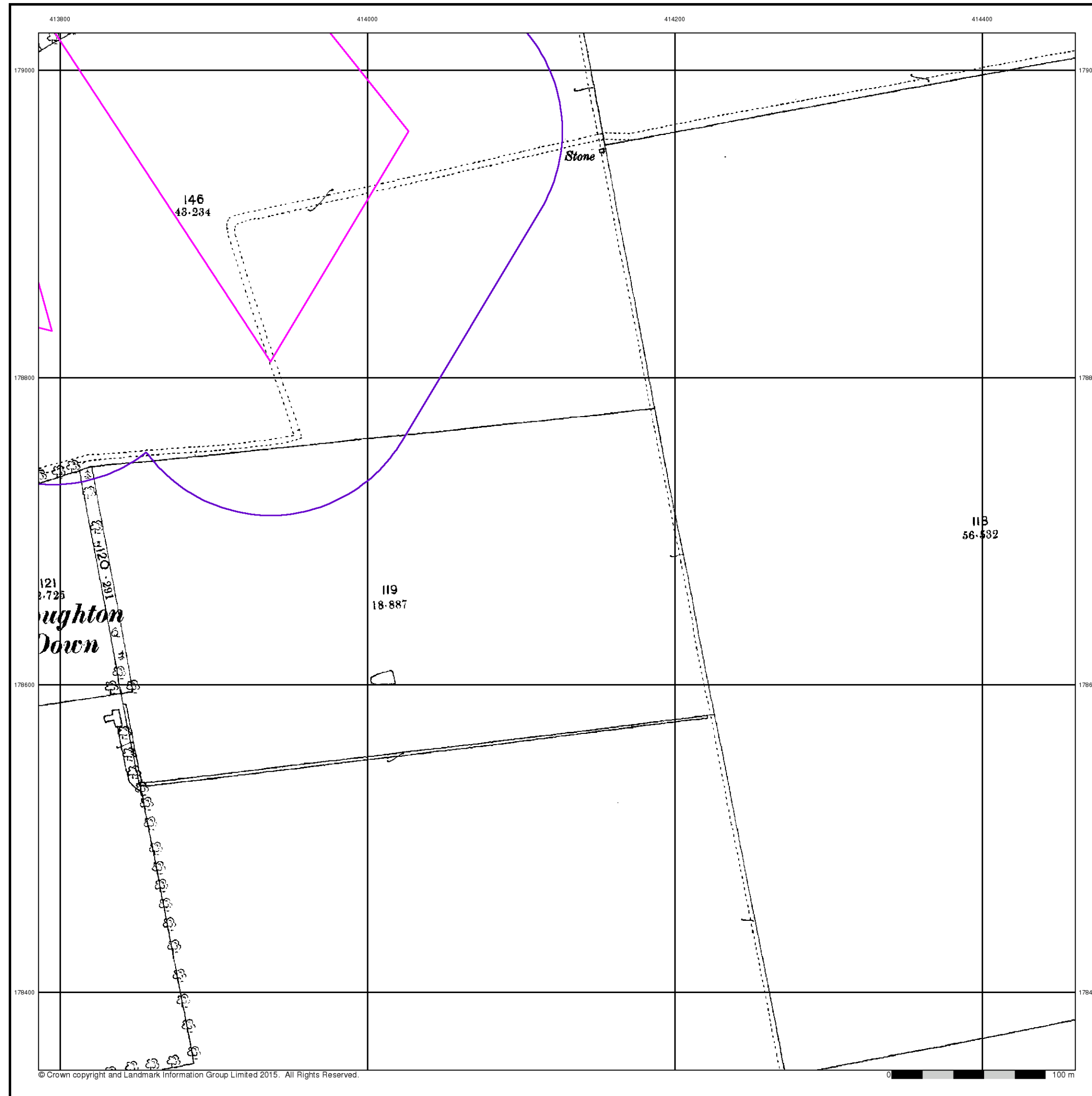
Slice: A
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Search Buffer (m): 100

Site Details

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Wiltshire

Published 1886

Source map scale - 1:2,500

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Map Name(s) and Date(s)

022_03
1886
1:2,500

Historical Map - Segment A7

N

Order Details

Order Number:	143521870_1_1
Customer Ref:	SMG One Collection Facility, Wroughton
National Grid Reference:	413790, 178990
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Site Area (Ha):	9.19
Search Buffer (m):	100

Site Details

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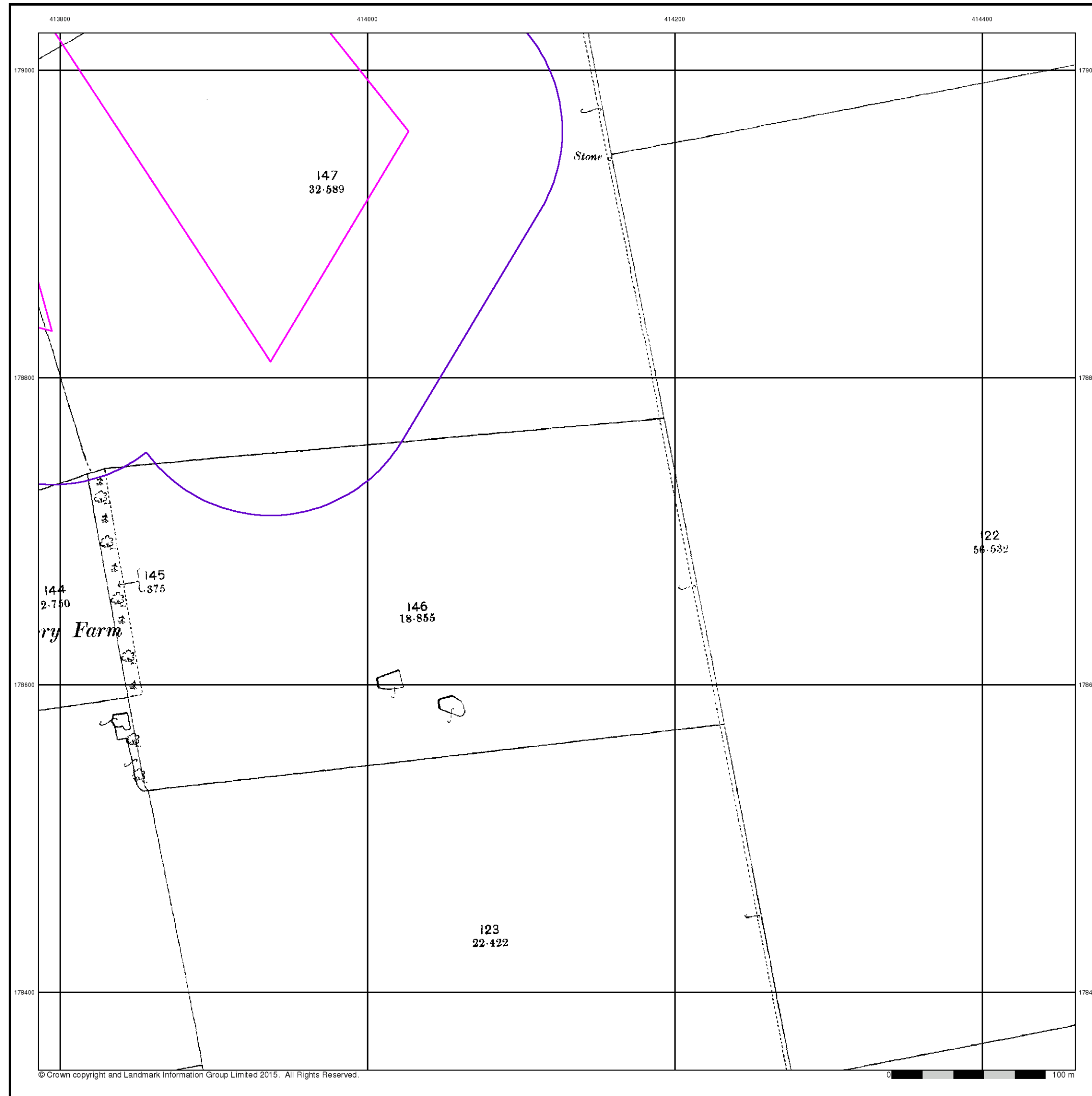
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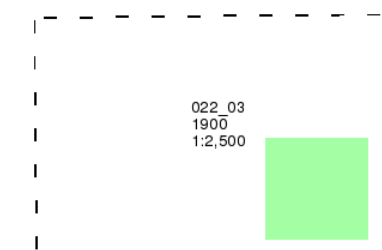
Wiltshire

Published 1900

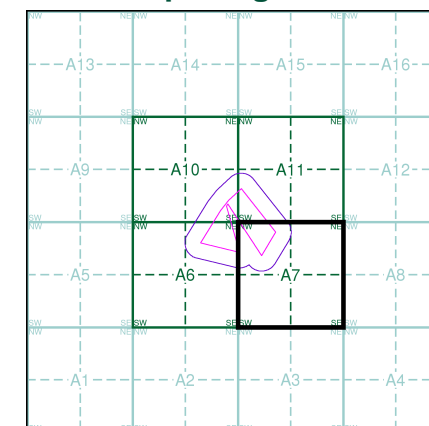
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A7



Order Details

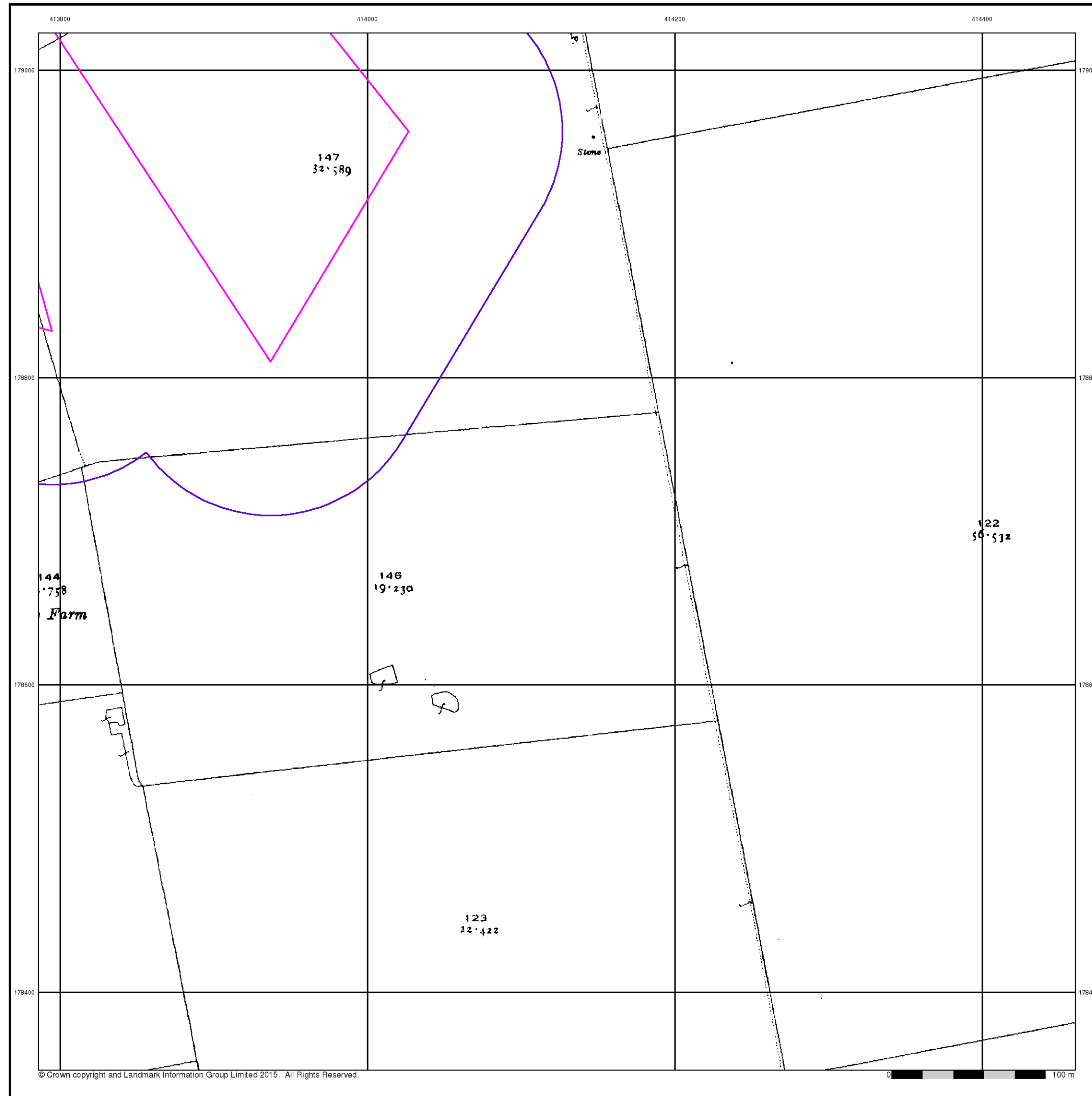
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National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

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Wiltshire

Published 1923

Source map scale - 1:2,500

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Map Name(s) and Date(s)

022_03
1923
1:2,500

Historical Map - Segment A7

N

Order Details

Order Number:

143521870_1_1

Customer Ref:

SMG One Collection Facility,
Wroughton

National Grid Reference:

413790, 178990

Slice:

A

Site Area (Ha):

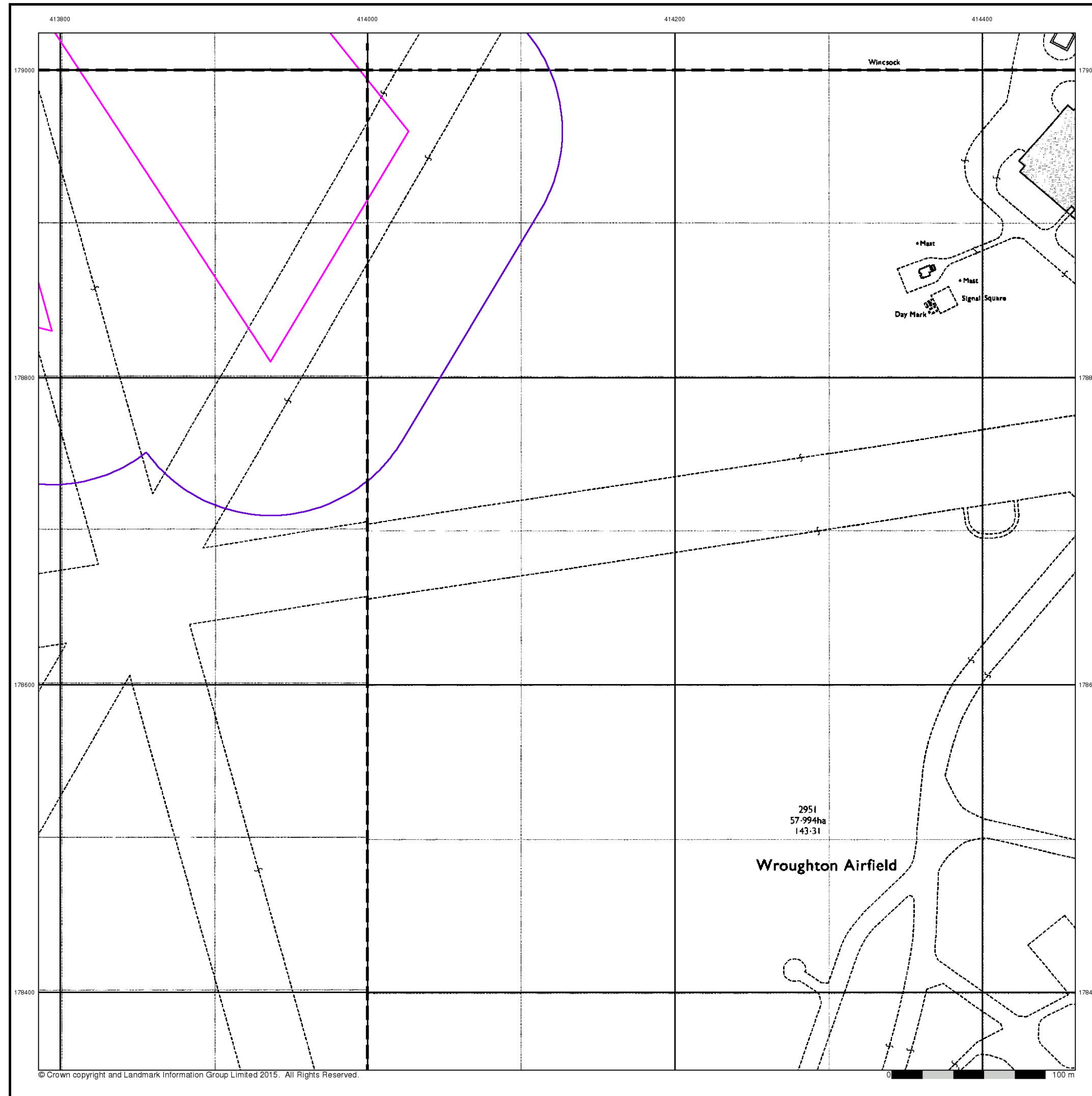
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Search Buffer (m):

100

Site Details

SMG One Collection Facility, Science Museum, Wroughton,
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Ordnance Survey Plan

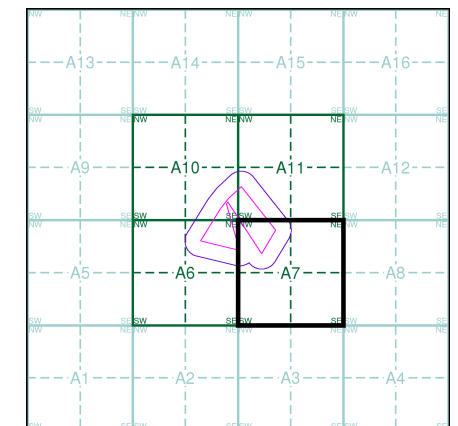
Published 1979 - 1980
Source map scale - 1:2,500

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Map Name(s) and Date(s)

SU1379 1979 12,500	SU1479 1979 12,500
SU1378 1979 12,500	SU1478 1980 12,500

Historical Map - Segment A7



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility,
Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton,
SWINDON, SN4 9NU



Large-Scale National Grid Data

Published 1994

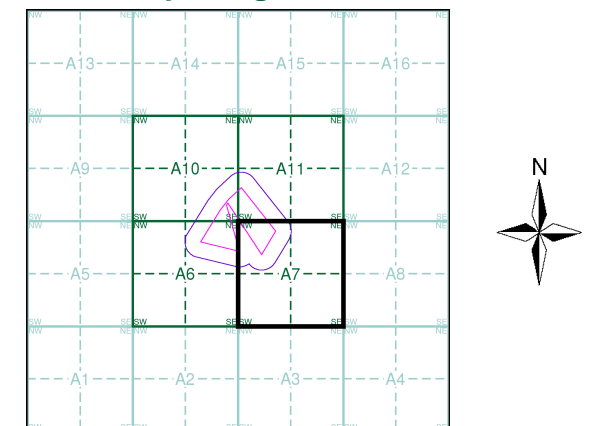
Source map scale - 1:2,500

'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)

SU1379 1994 1:2,500	SU1479 1994 1:2,500
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Historical Map - Segment A7



Order Details

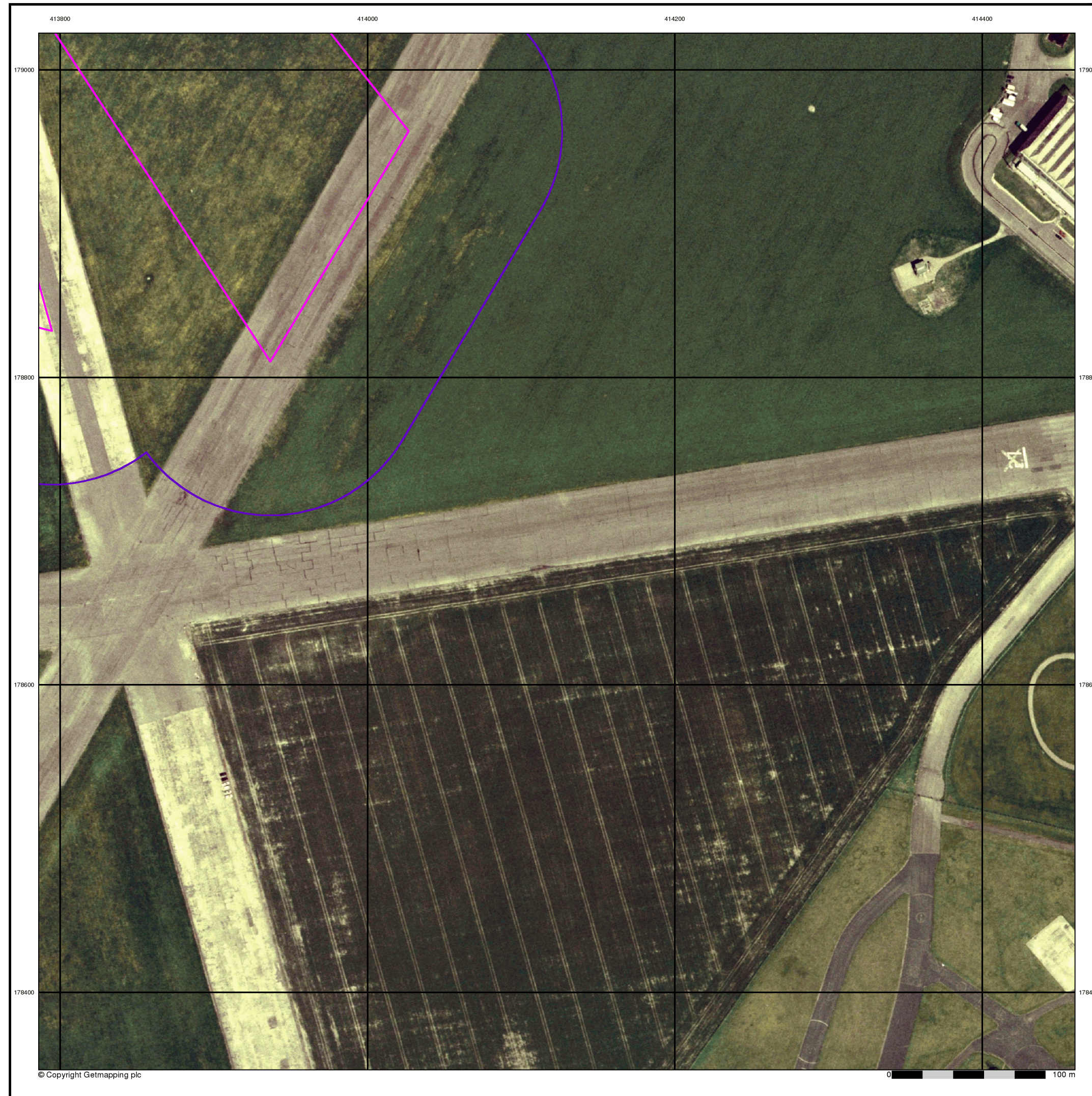
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Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990

Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU

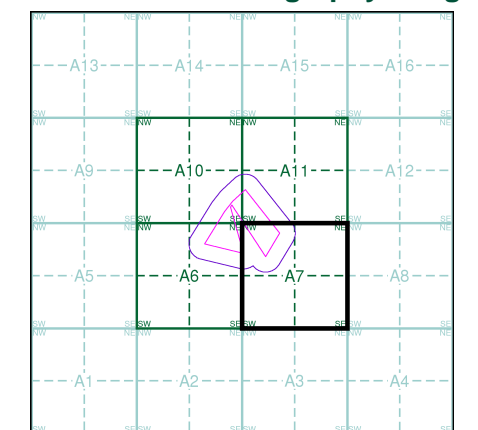


Historical Aerial Photography

Published 2000

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 A7



Order Details

Order Number: 143521870_1_1
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National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU

Historical Mapping Legends

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



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



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



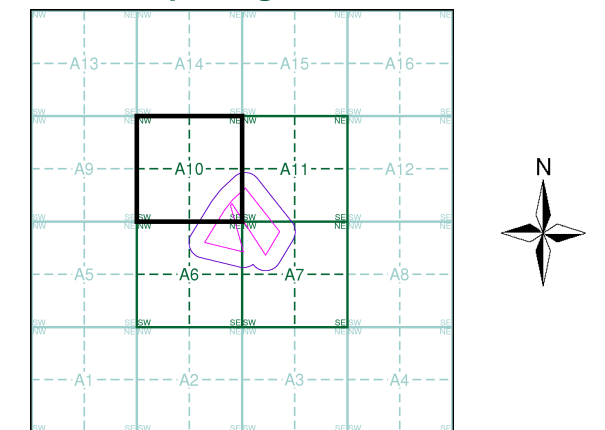
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Wiltshire	1:2,500	1886	2
Wiltshire	1:2,500	1900	3
Wiltshire	1:2,500	1923	4
Ordnance Survey Plan	1:2,500	1979	5
Large-Scale National Grid Data	1:2,500	1994	6
Historical Aerial Photography	1:2,500	2000	7

Historical Map - Segment A10



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990

Slice: A

Site Area (Ha): 9.19

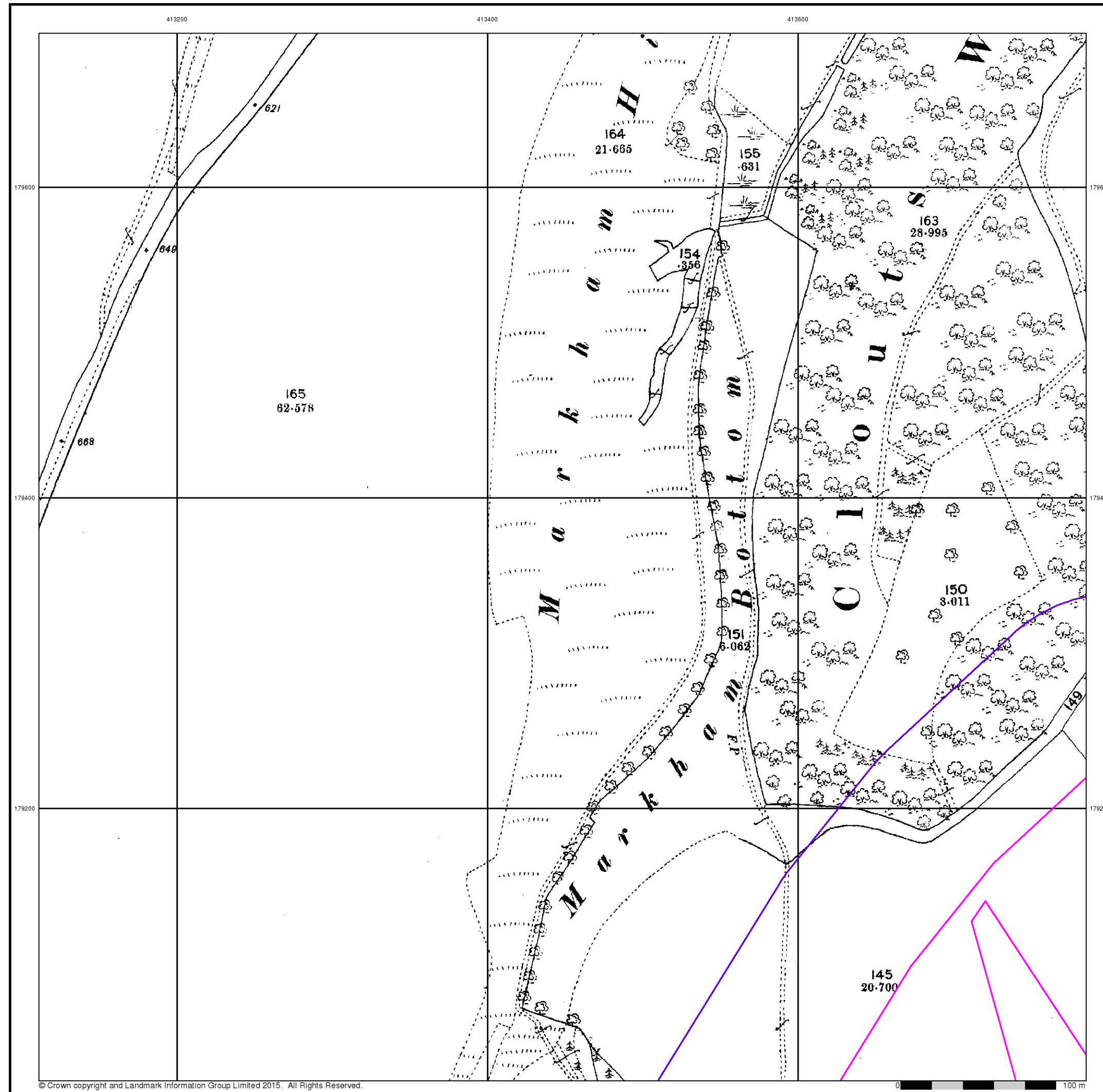
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU

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



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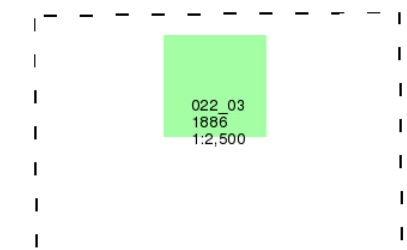
Wiltshire

Published 1886

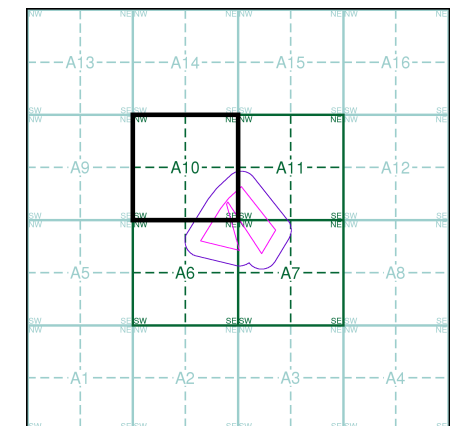
Source map scale - 1:2,500

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.

Map Name(s) and Date(s)



Historical Map - Segment A10

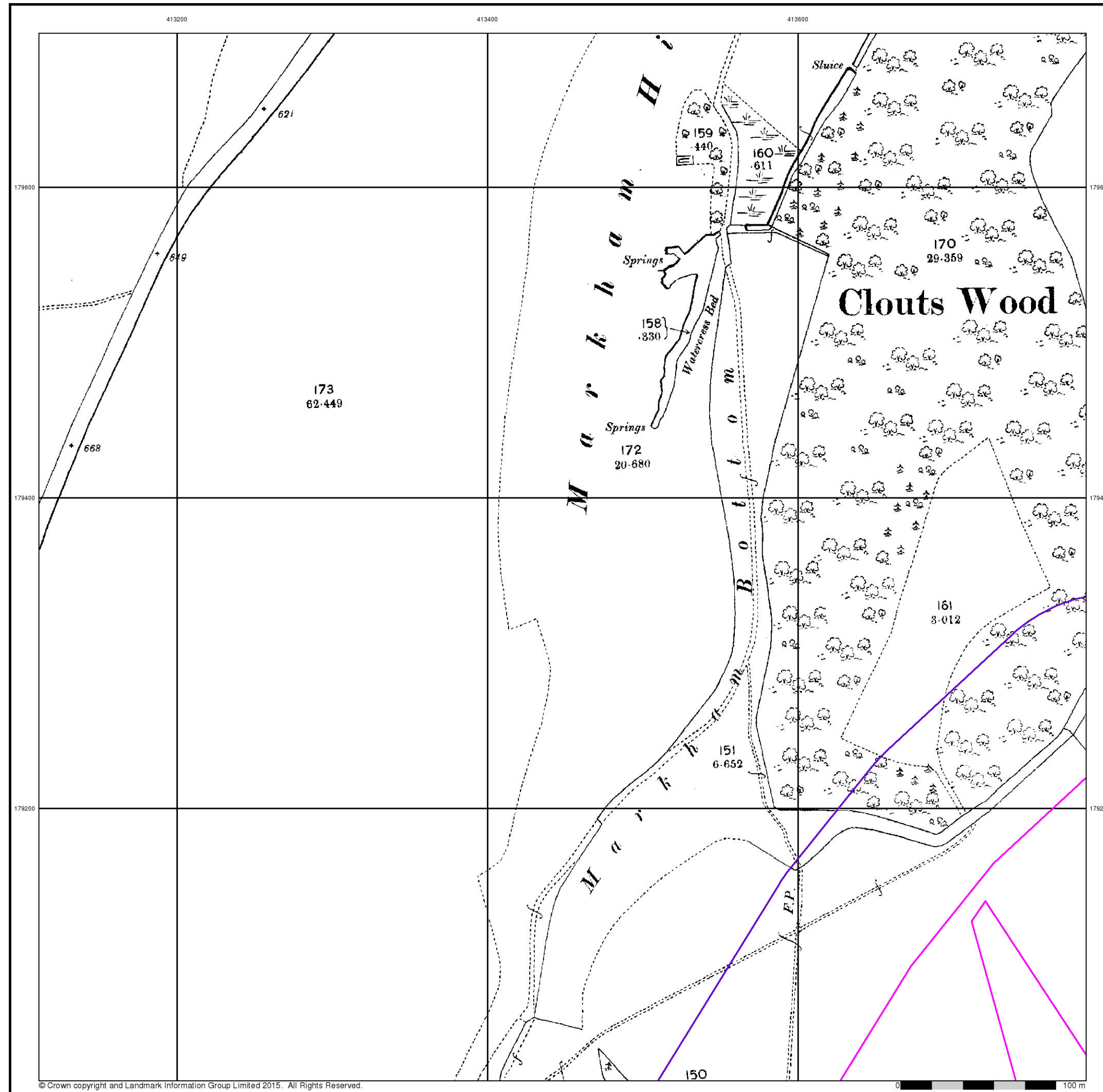


Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU



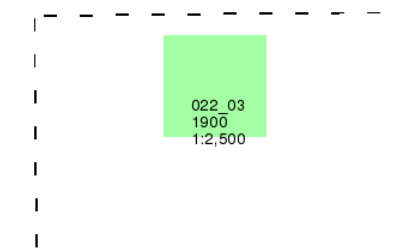
Wiltshire

Published 1900

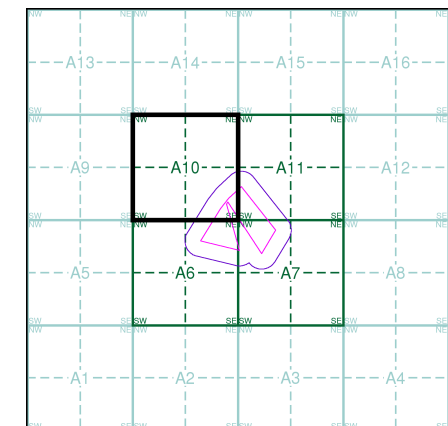
Source map scale - 1:2,500

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 A10

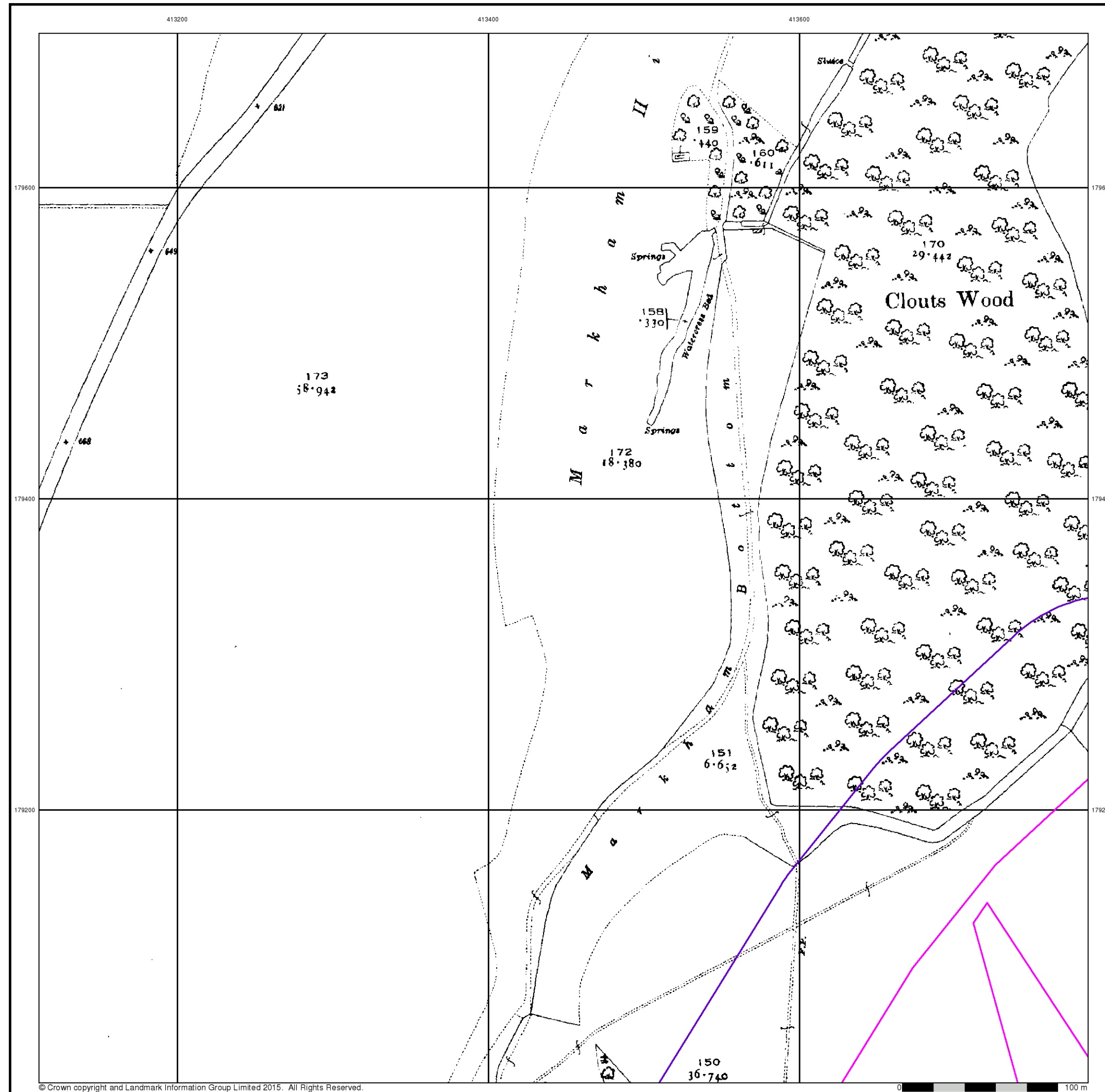


Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU



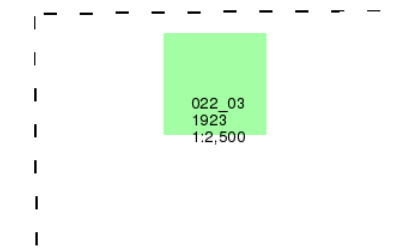
Wiltshire

Published 1923

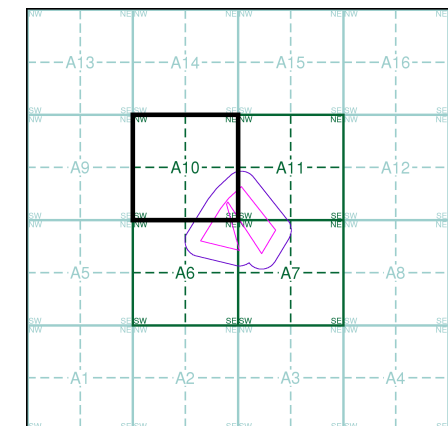
Source map scale - 1:2,500

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 A10

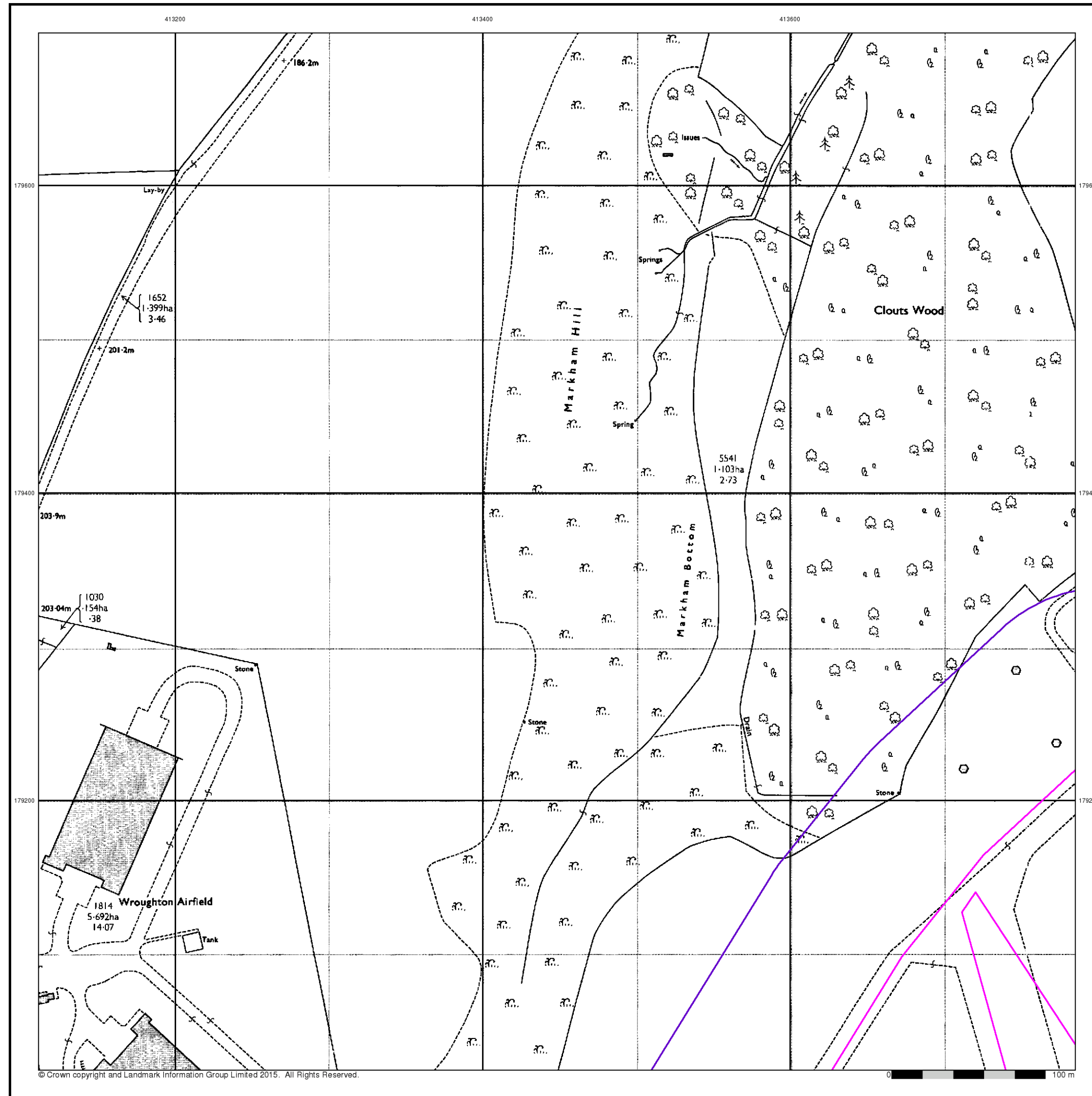


Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU



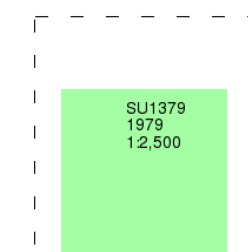
Ordnance Survey Plan

Published 1979

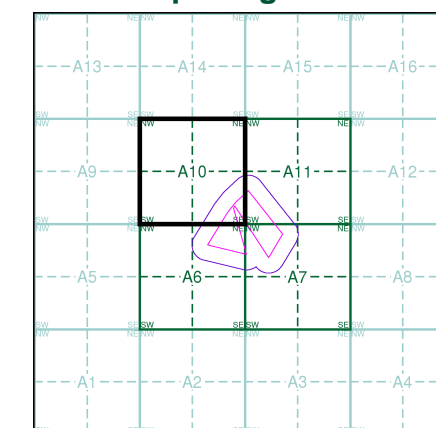
Source map scale - 1:2,500

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 A10

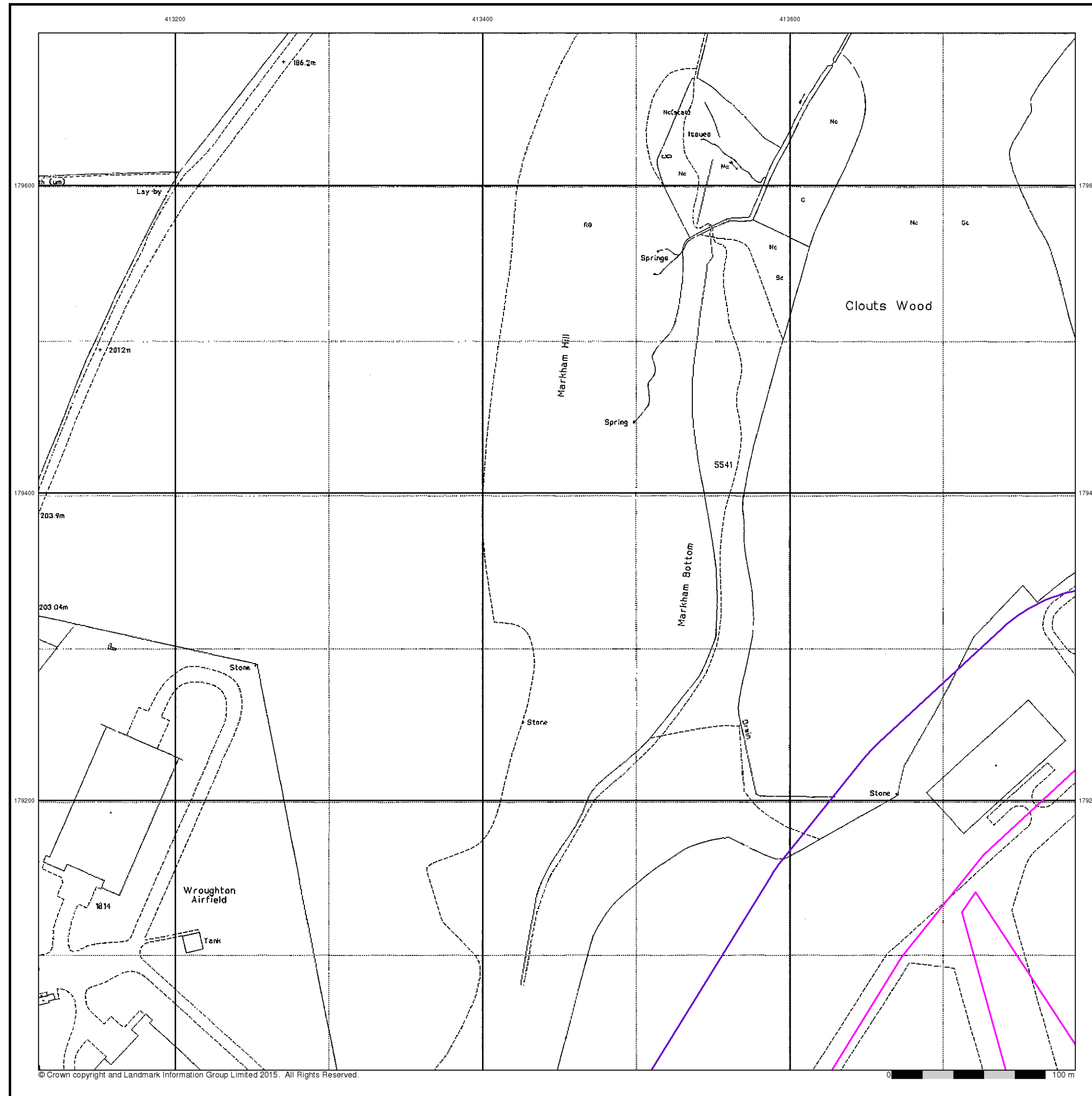


Order Details

Order Number:	143521870_1_1
Customer Ref:	SMG One Collection Facility, Wroughton
National Grid Reference:	413790, 178990
Slice:	A
Site Area (Ha):	9.19
Search Buffer (m):	100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU



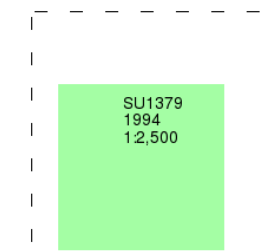
Large-Scale National Grid Data

Published 1994

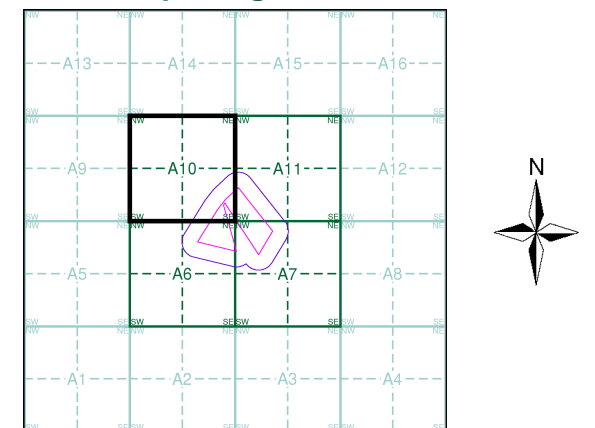
Source map scale - 1:2,500

'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 A10



Order Details

Order Number:	143521870_1_1
Customer Ref:	SMG One Collection Facility, Wroughton
National Grid Reference:	413790, 178990
Slice:	A
Site Area (Ha):	9.19
Search Buffer (m):	100

Site Details

SMG One Collection Facility, Science Museum, Wroughton,
SWINDON, SN4 9NU

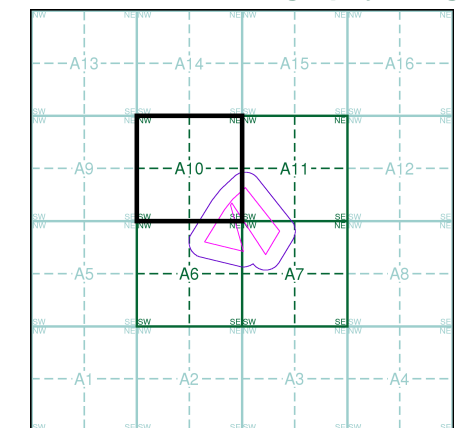


Historical Aerial Photography

Published 2000

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 A10



Order Details

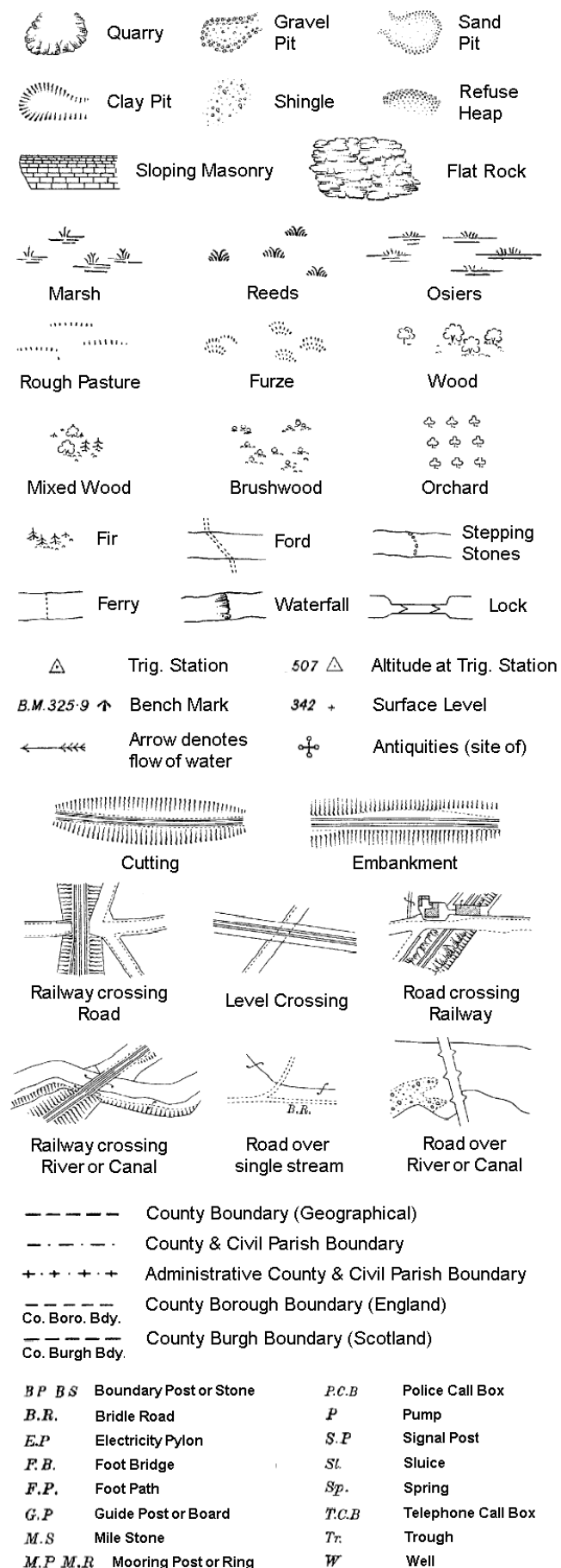
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility,
Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton,
SWINDON, SN4 9NU

Historical Mapping Legends

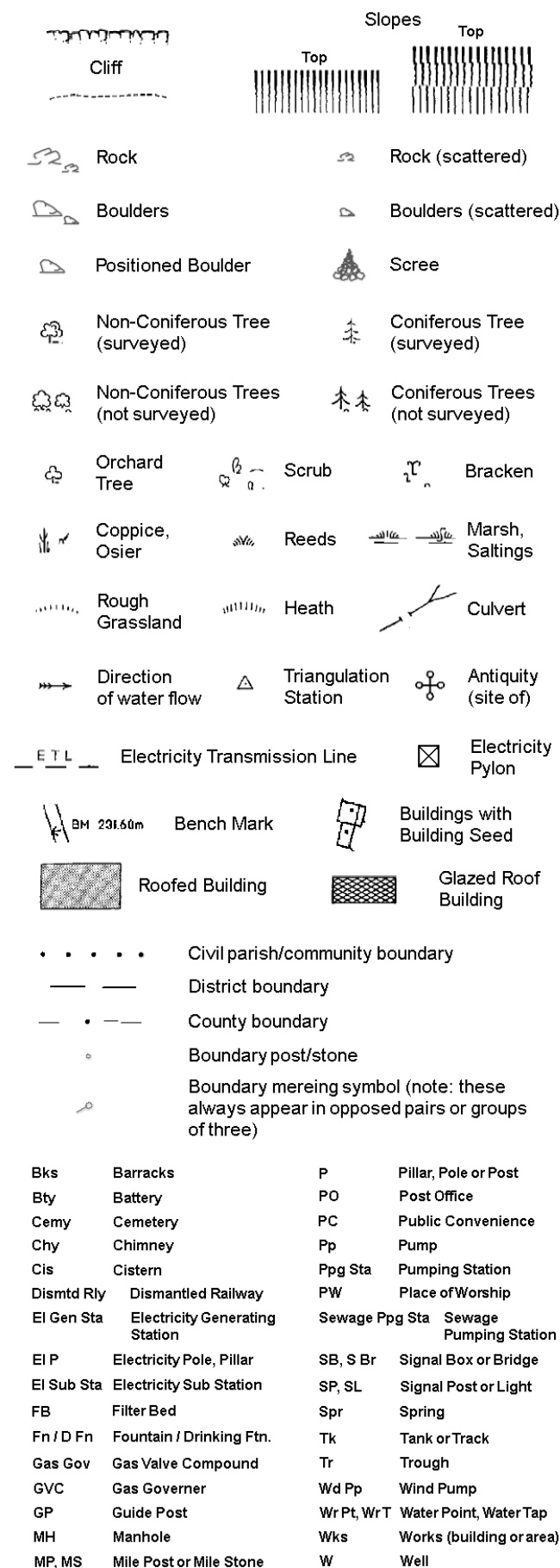
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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



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



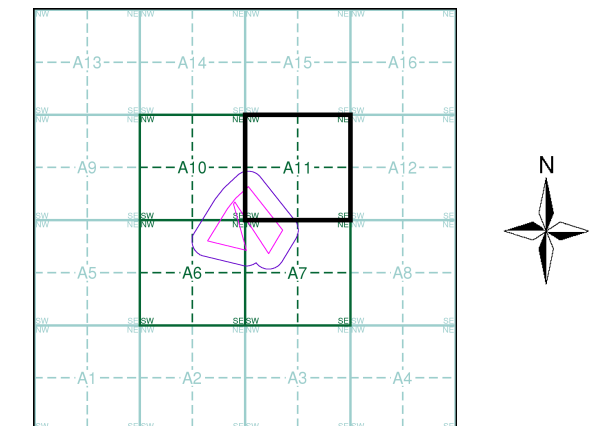
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Wiltshire	1:2,500	1886	2
Wiltshire	1:2,500	1900	3
Wiltshire	1:2,500	1923	4
Ordnance Survey Plan	1:2,500	1979	5
Large-Scale National Grid Data	1:2,500	1994	6
Historical Aerial Photography	1:2,500	2000	7

Historical Map - Segment A11



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990

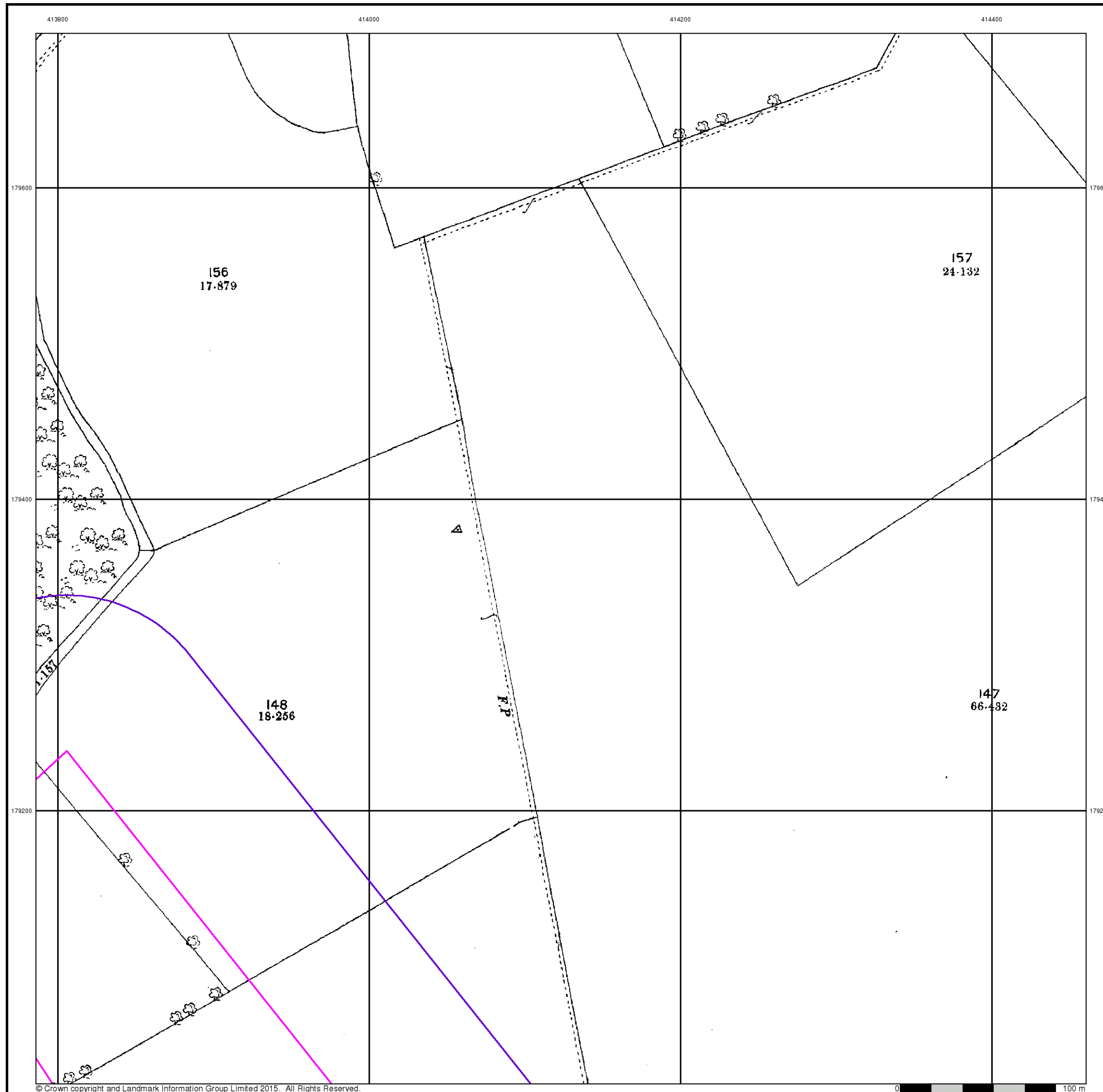
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU

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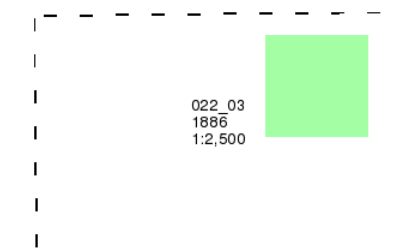
Wiltshire

Published 1886

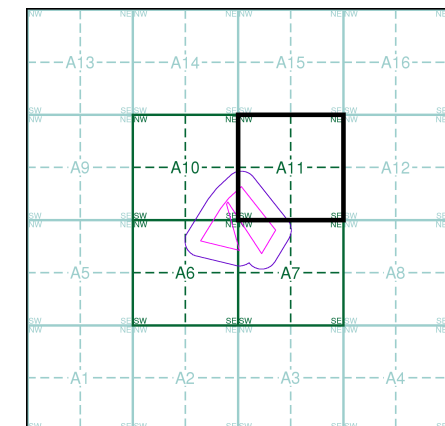
Source map scale - 1:2,500

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.

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility,
Wroughton

National Grid Reference: 413790, 178990

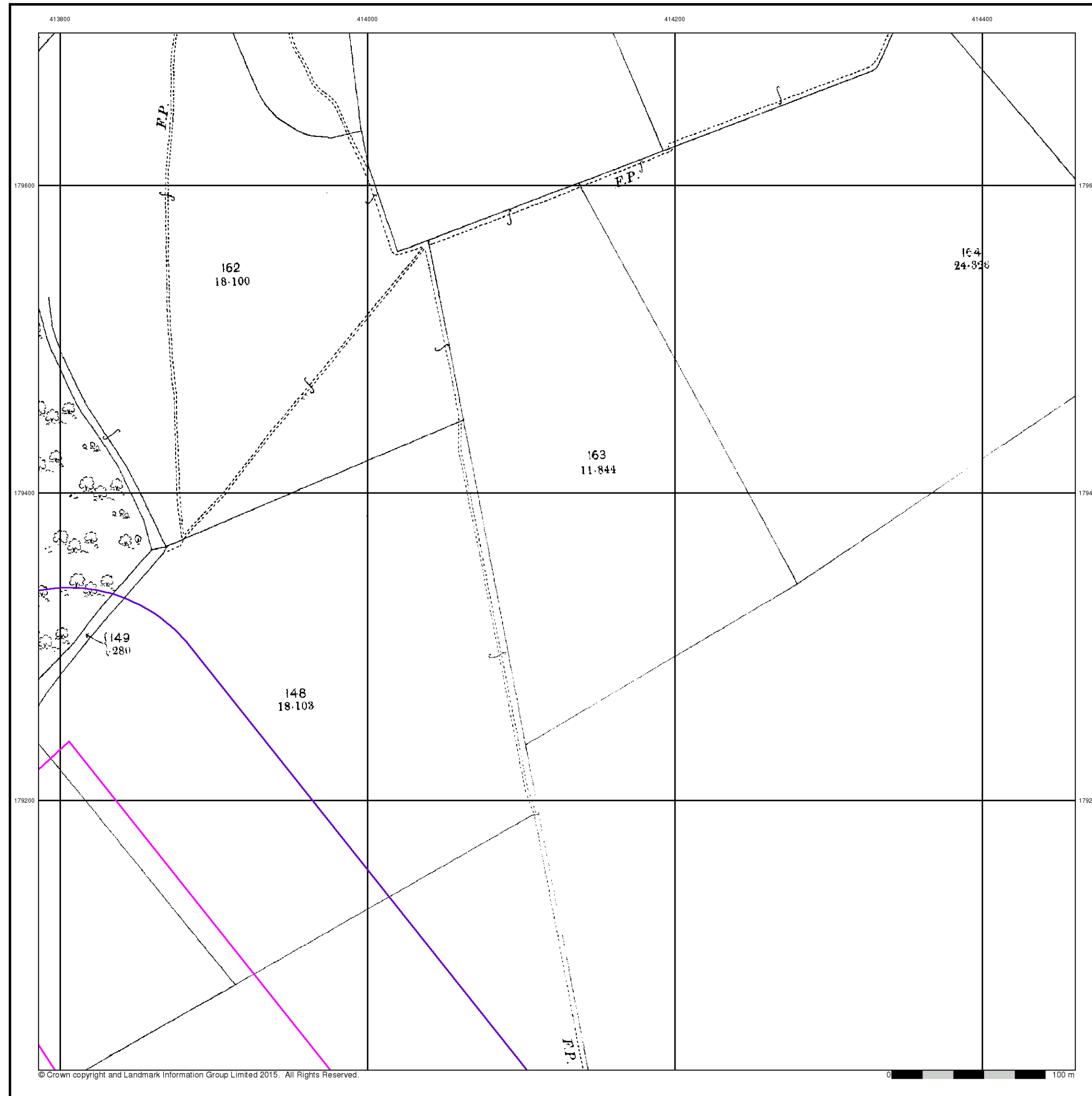
Slice:	A
Site Area (Ha):	9.19
Search Buffer (m):	100

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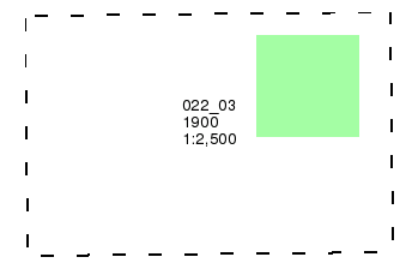
Wiltshire

Published 1900

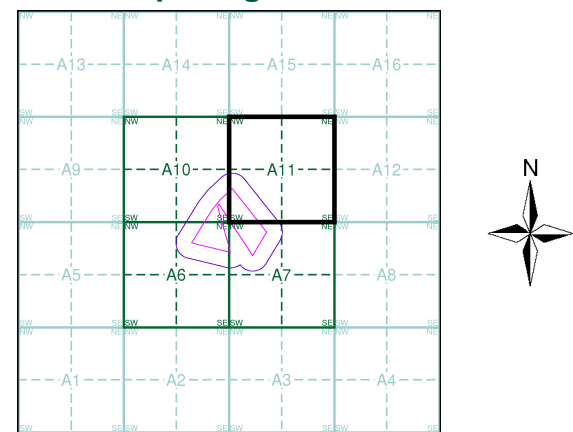
Source map scale - 1:2,500

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 A11

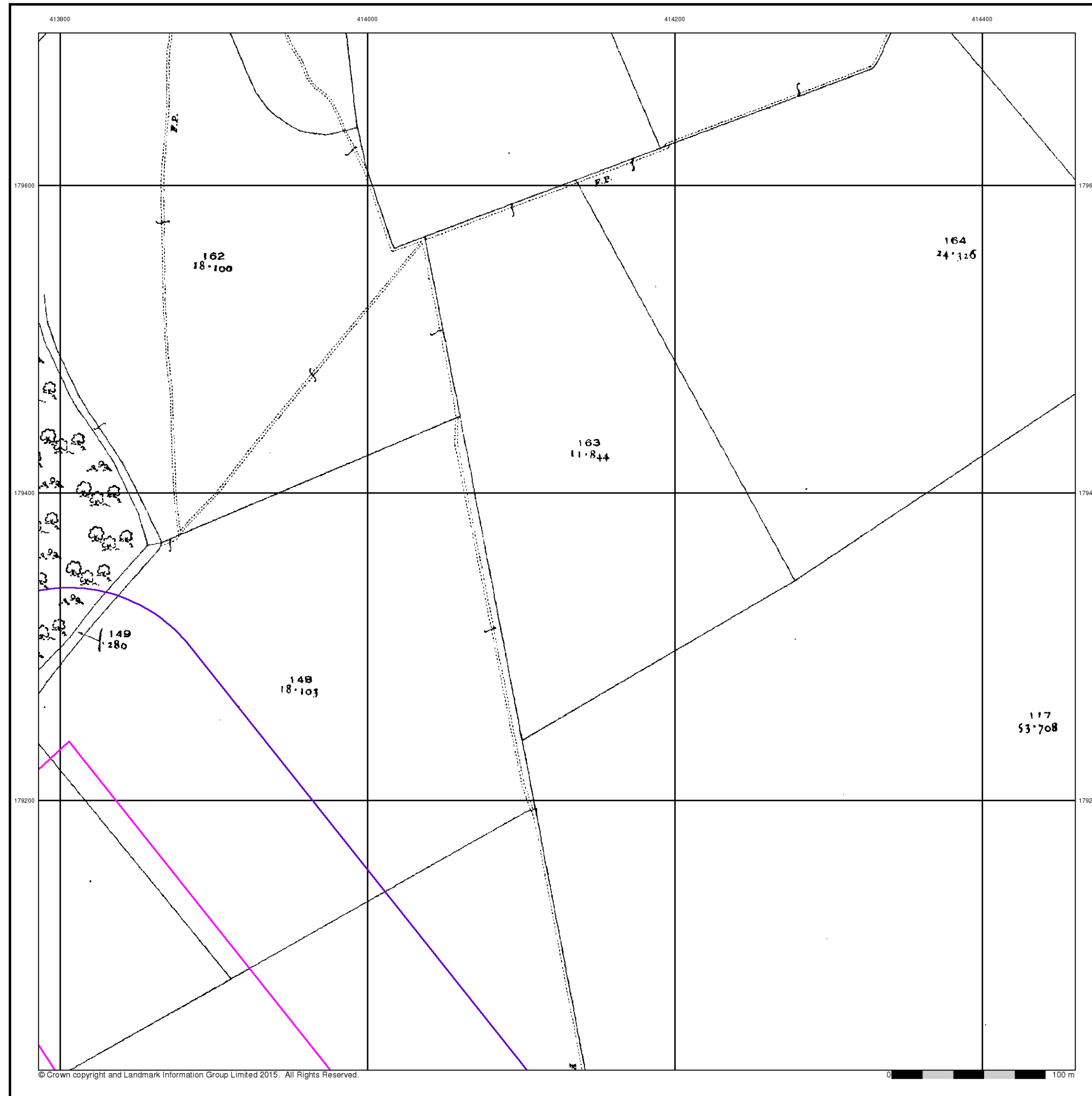


Order Details

Order Number:	143521870_1_1
Customer Ref:	SMG One Collection Facility, Wroughton
National Grid Reference:	413790, 178990
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Search Buffer (m):	100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU



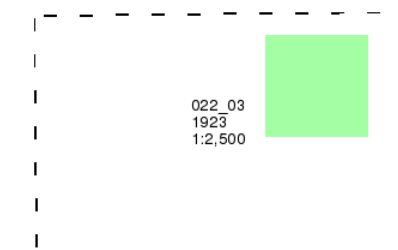
Wiltshire

Published 1923

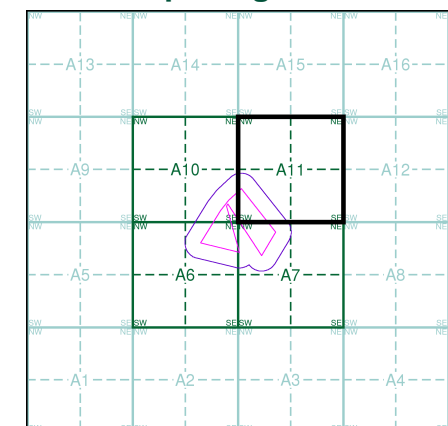
Source map scale - 1:2,500

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 A11



Order Details

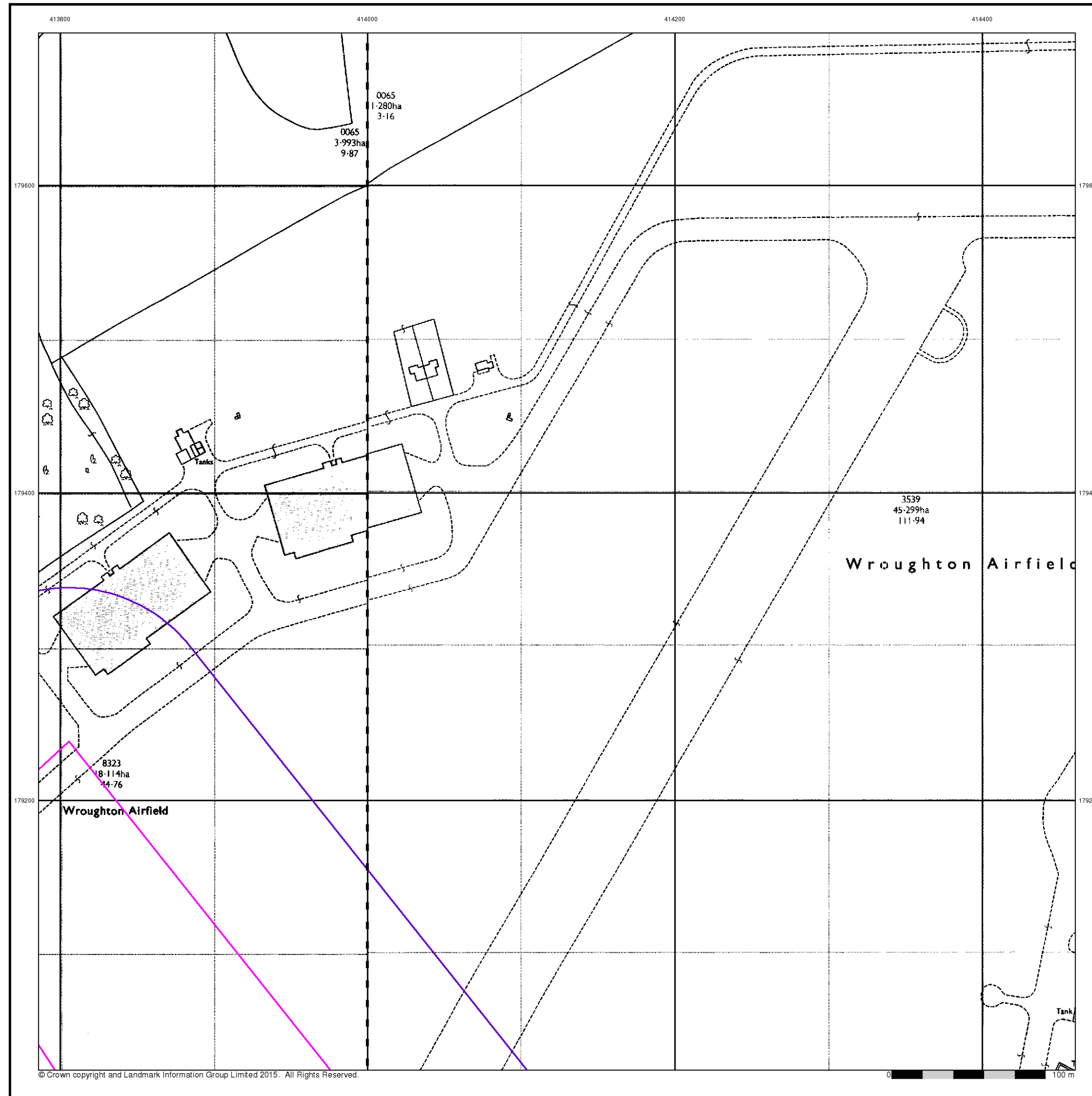
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990

Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU



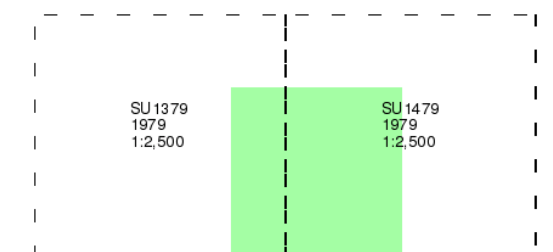
Ordnance Survey Plan

Published 1979

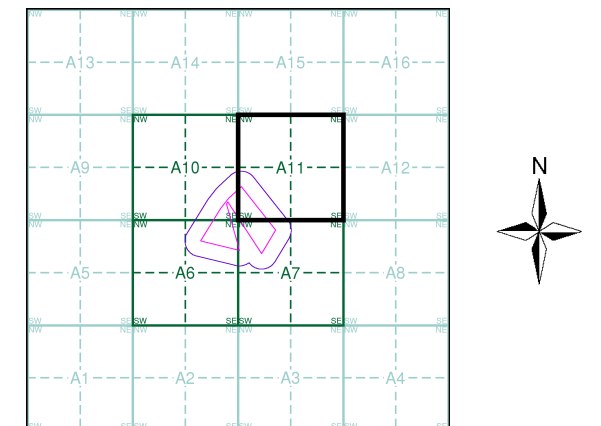
Source map scale - 1:2,500

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 A11

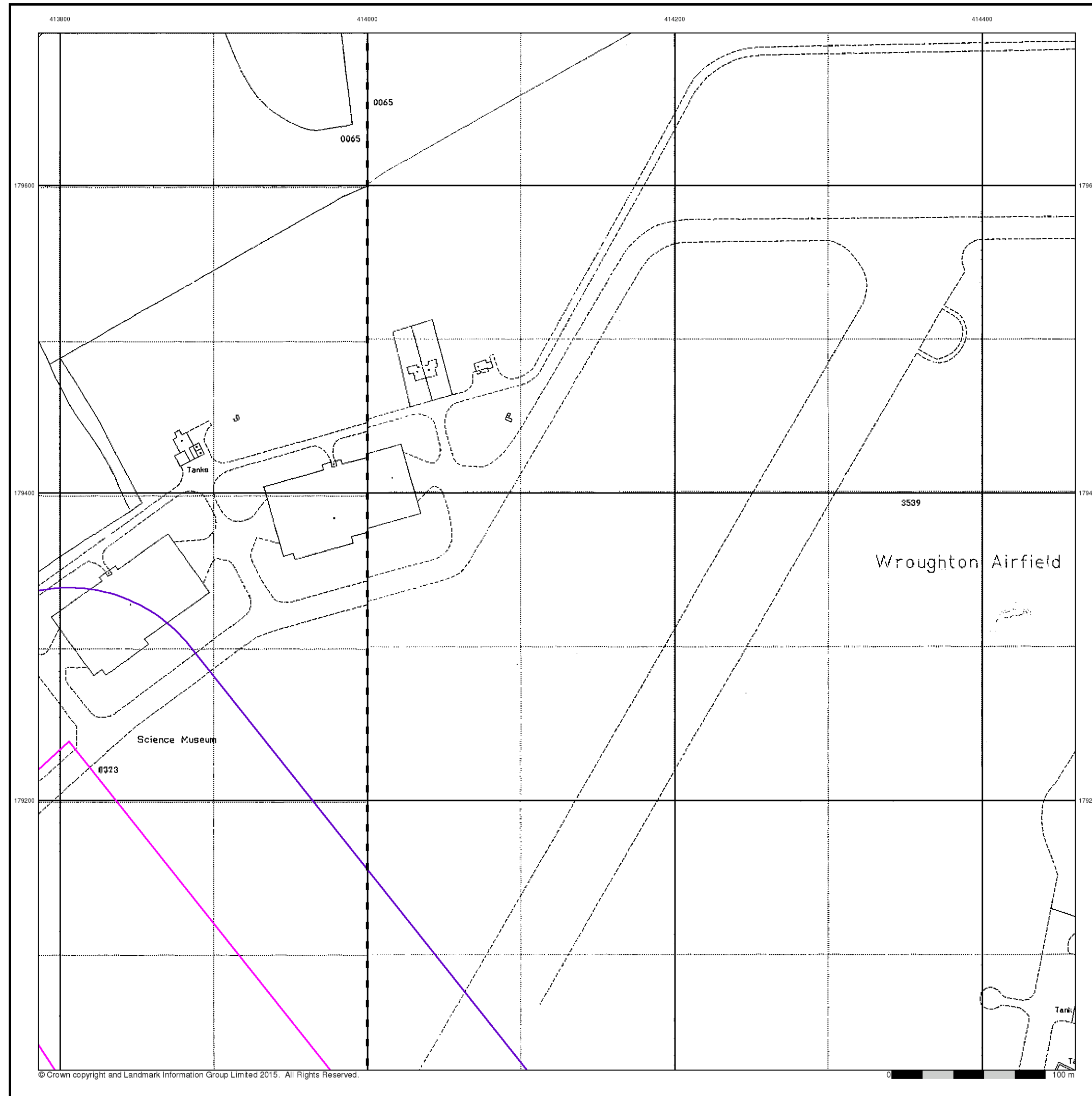


Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
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Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU



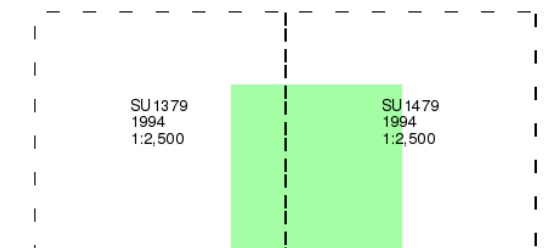
Large-Scale National Grid Data

Published 1994

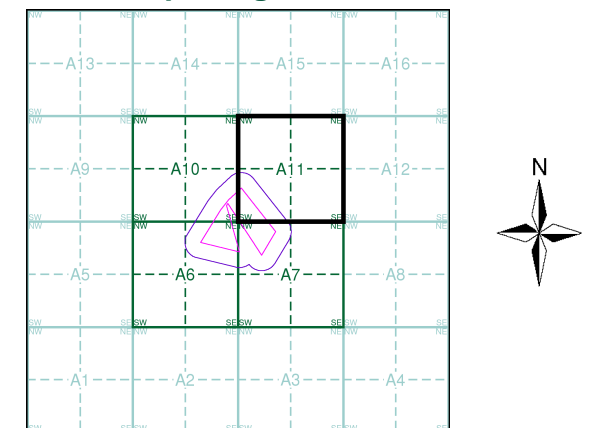
Source map scale - 1:2,500

'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 A11



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton

National Grid Reference: 413790, 178990

Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 100

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU

413800

414000

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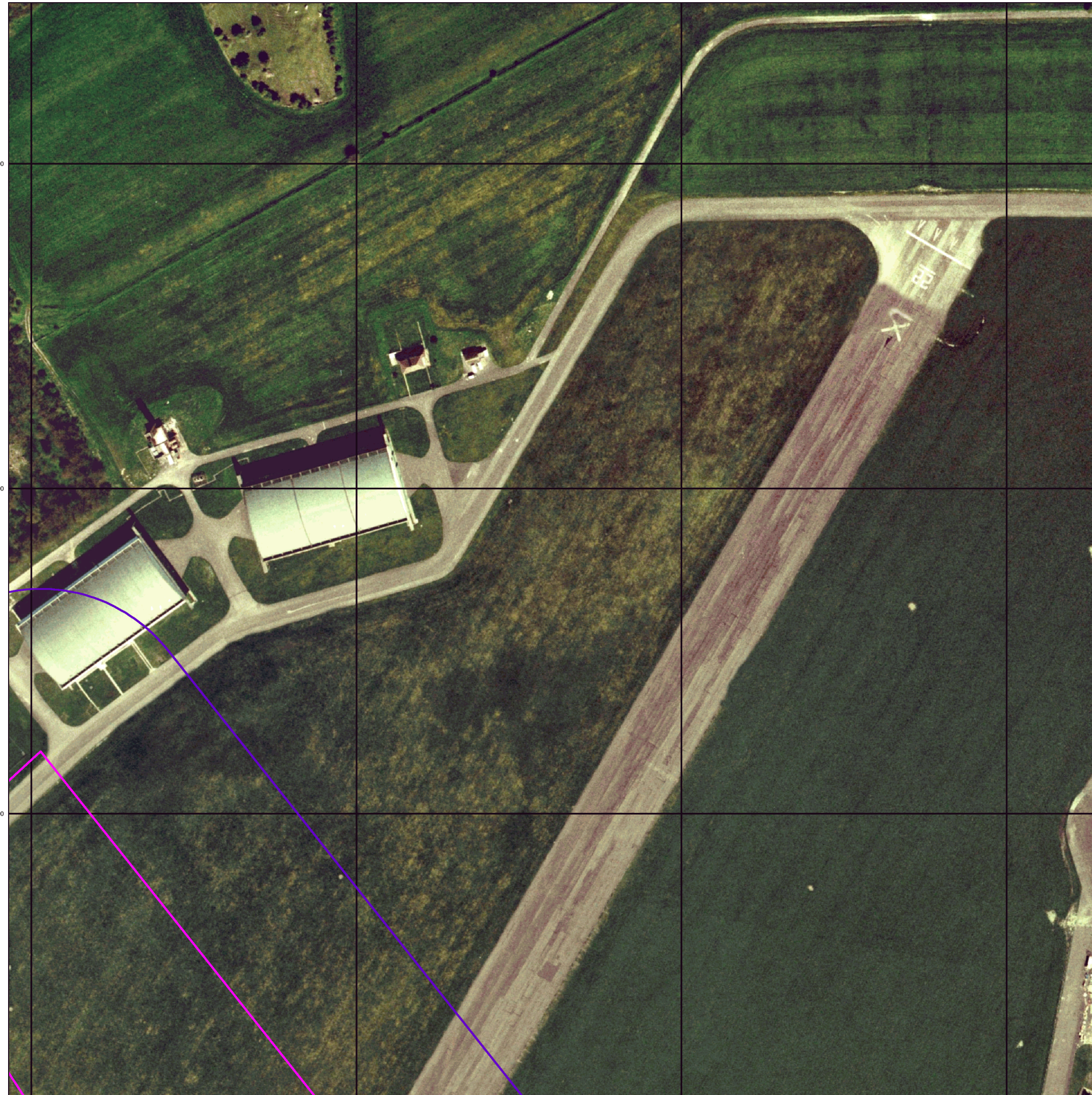
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179400

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179200



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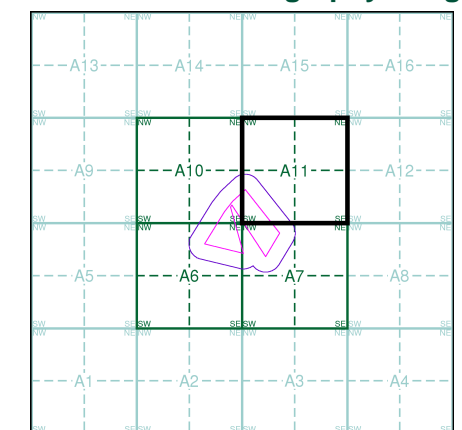
● LANDMARK INFORMATION GROUP[®]

Historical Aerial Photography

Published 2000

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 A11



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility,
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National Grid Reference: 413790, 178990

Slice: A
Site Area (Ha): 9.19
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Site Details

SMG One Collection Facility, Science Museum, Wroughton,
SWINDON, SN4 9NU

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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		Minor Roads		
	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				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	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
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	Standard Gauge Multiple Track		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
	Civil Parish		
	BP, BS Boundary Post or Stone		Police Station
	Church		Post Office
	Club House		Public Convenience
	Fire Engine Station		Public House
	Foot Bridge		Signal Box
	Fountain		Spring
	Guide Post		Telephone Call Box
	Mile Post		Telephone Call Post
	Mile Stone		Well

1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	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
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	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

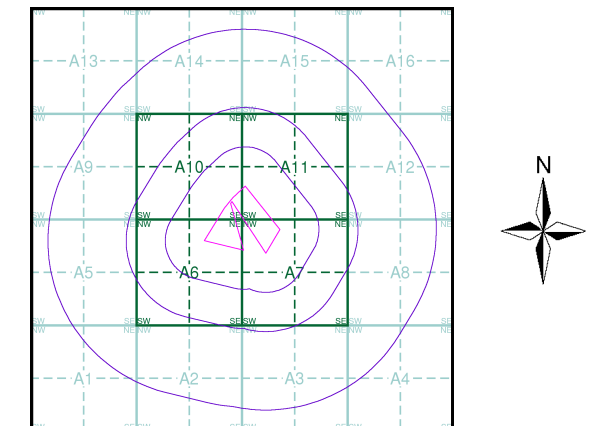
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Wiltshire	1:10,560	1888 - 1889	2
Wiltshire	1:10,560	1901	3
Wiltshire	1:10,560	1925	4
Wiltshire	1:10,560	1938	5
Historical Aerial Photography	1:10,560	1947 - 1950	6
Ordnance Survey Plan	1:10,000	1960	7
Ordnance Survey Plan	1:10,000	1973 - 1977	8
Ordnance Survey Plan	1:10,000	1981 - 1987	9
Ordnance Survey Plan	1:10,000	1988	10
10K Raster Mapping	1:10,000	1999	11
10K Raster Mapping	1:10,000	2006	12
VectorMap Local	1:10,000	2017	13

Historical Map - Slice A



Order Details

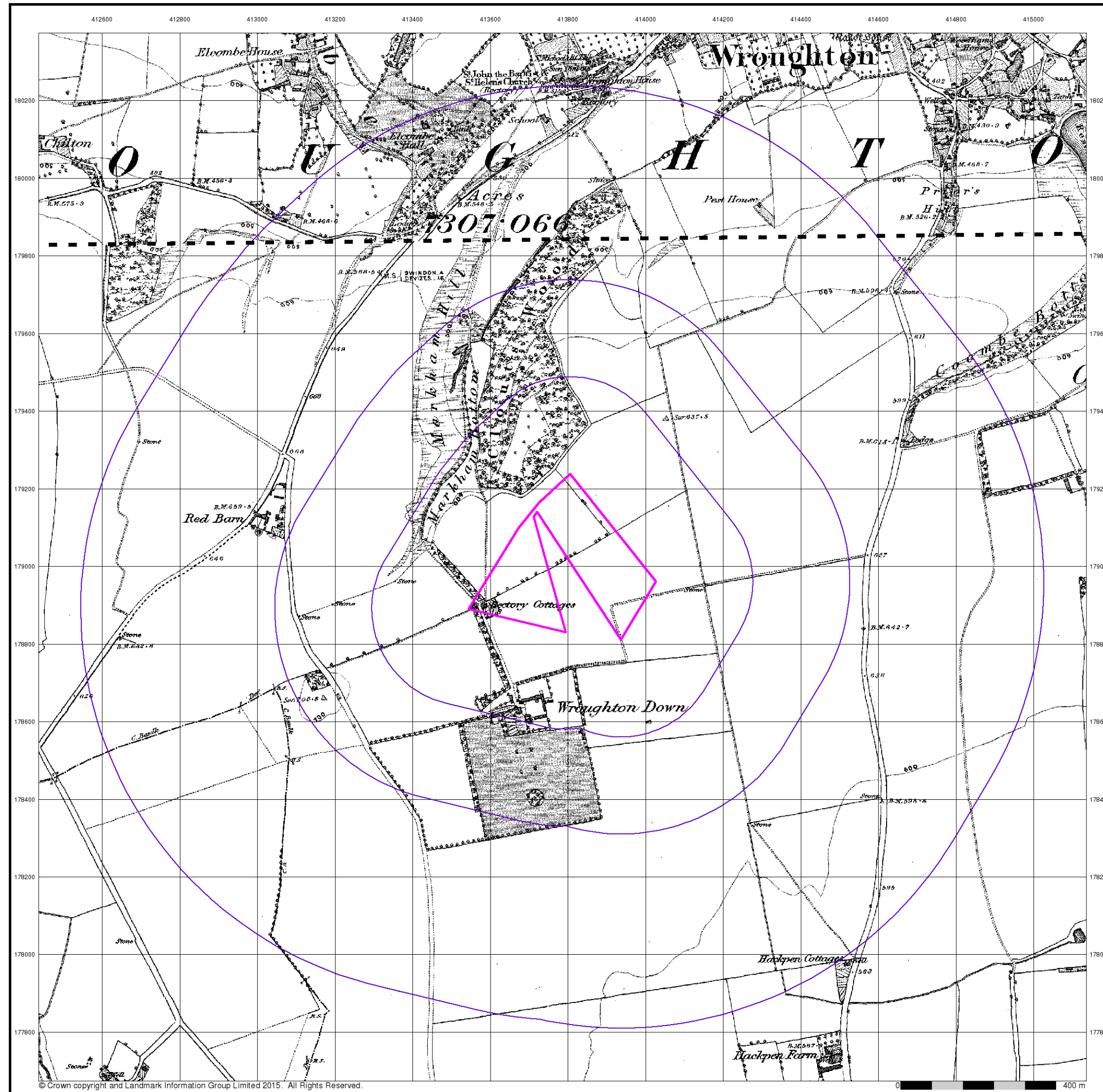
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

Site Details

SMG One Collection Facility, Science Museum, Wroughton, SWINDON, SN4 9NU

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Wiltshire

Published 1888 - 1889

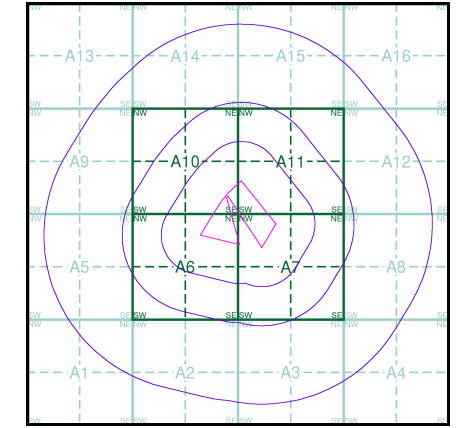
Source map scale - 1:10,560

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)

01500
1889
1:10,560
02200
1888
1:10,560

Historical Map - Slice A



Order Details

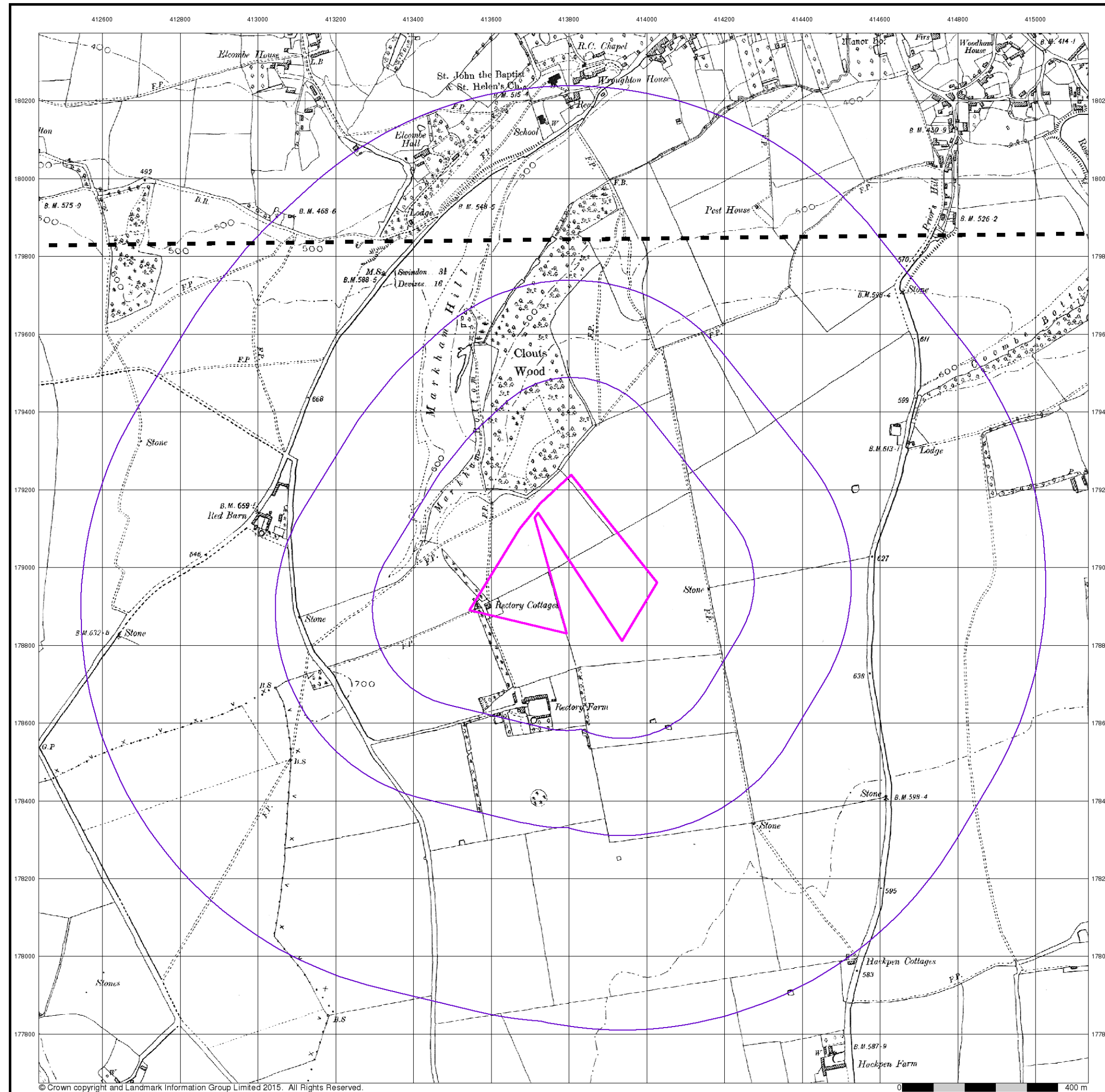
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

Site Details

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Wiltshire

Published 1901

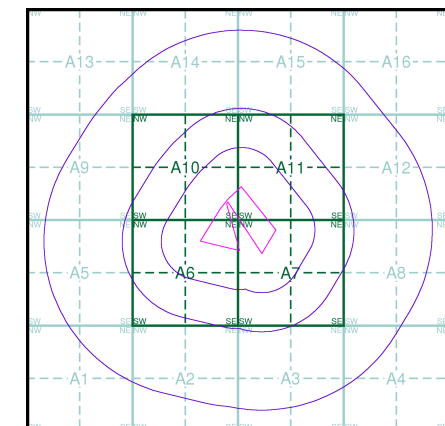
Source map scale - 1:10,560

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)

015SE
1901
1:10,560
022NE
1901
1:10,560

Historical Map - Slice A



Order Details

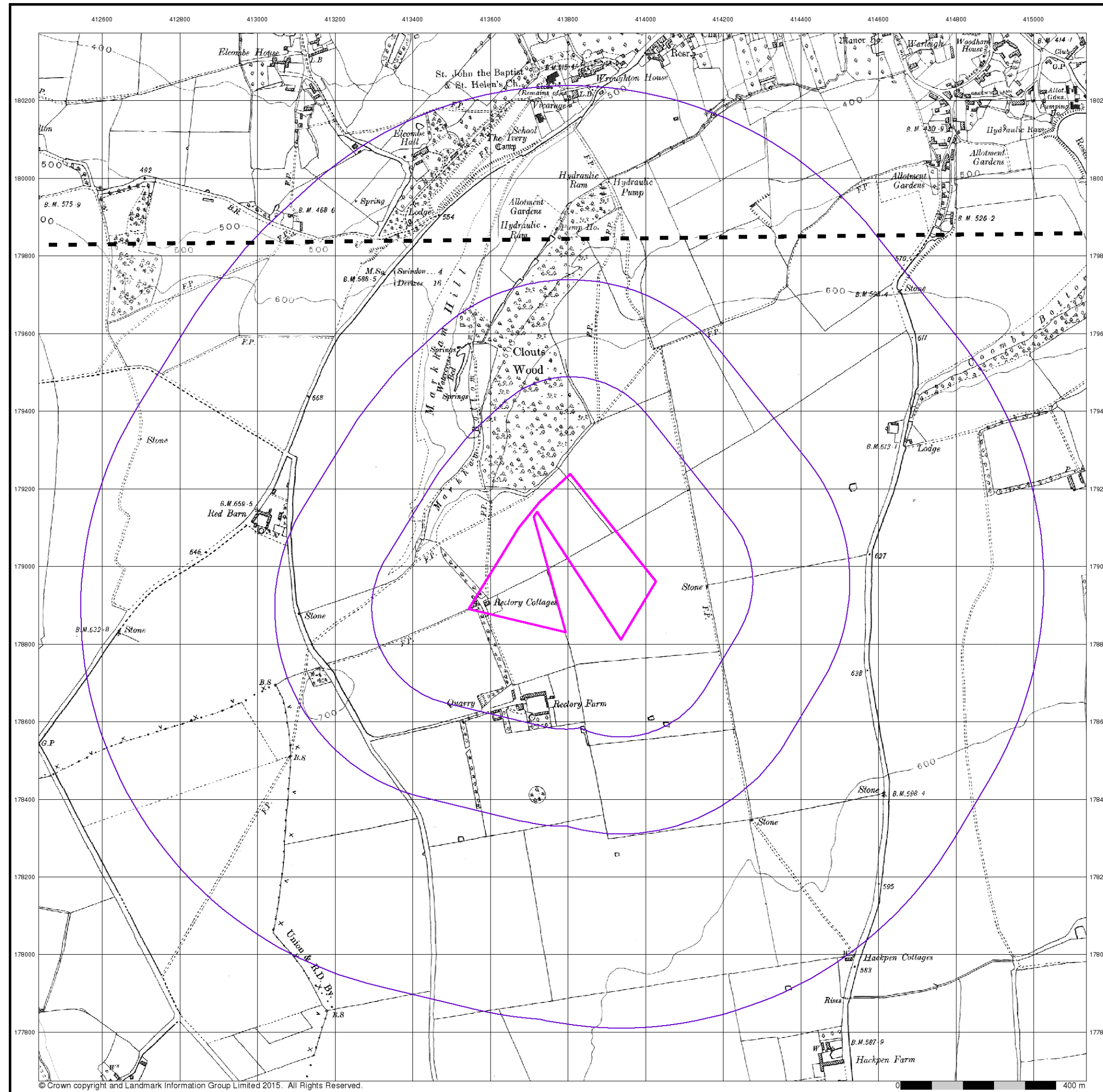
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

Site Details

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Wiltshire

Published 1925

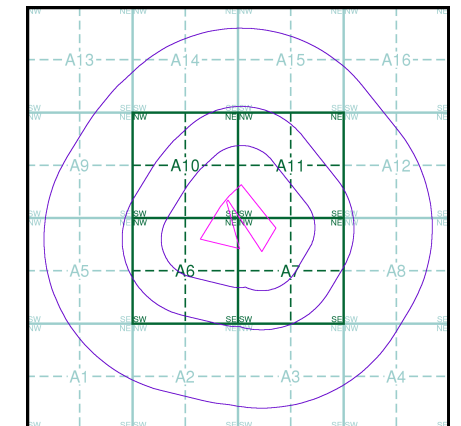
Source map scale - 1:10,560

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)

015SE
1925
1:10,560
022NE
1925
1:10,560

Historical Map - Slice A



Order Details

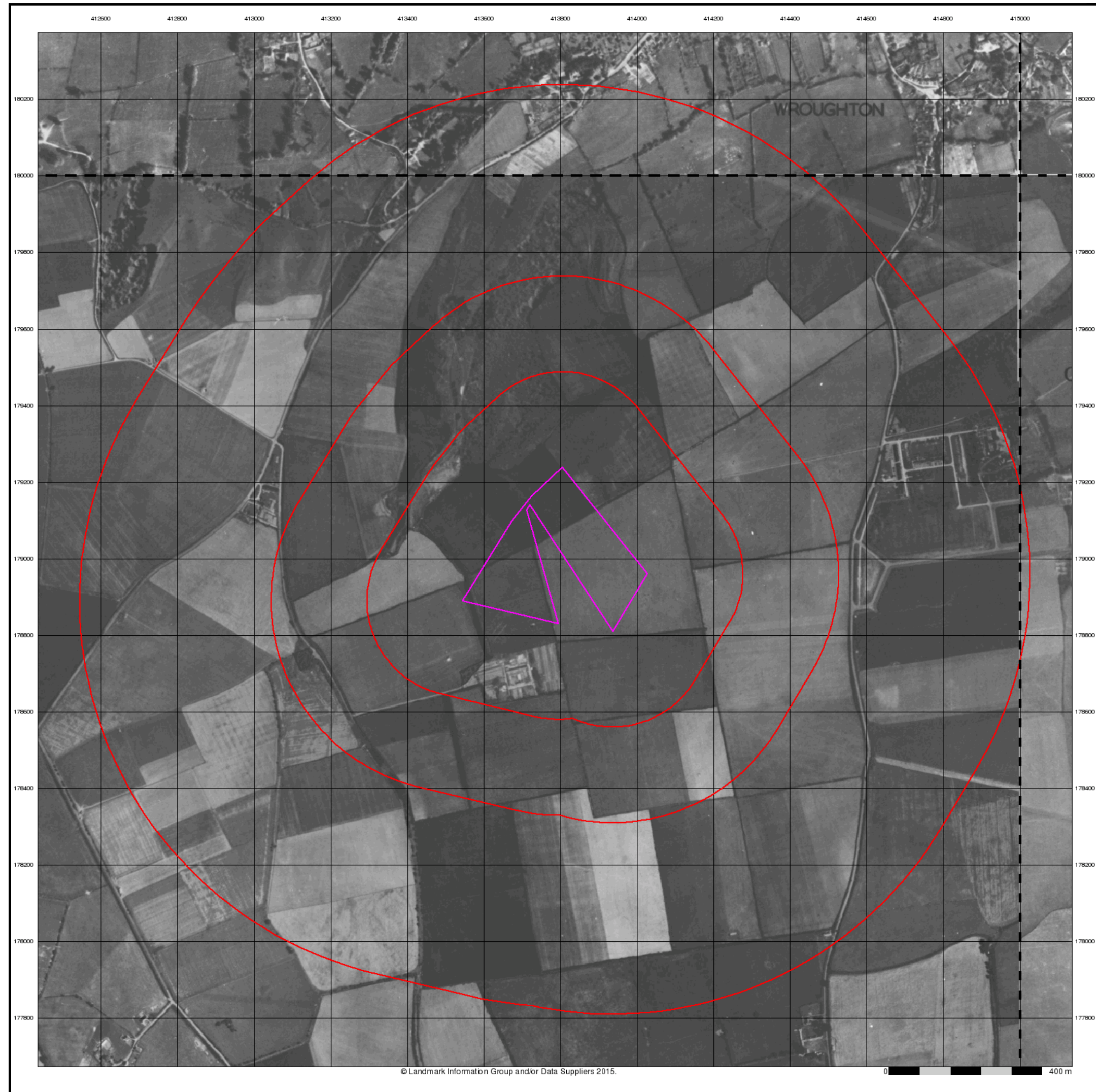
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

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Historical Aerial Photography

Published 1947 - 1950

Source map scale - 1:10,560

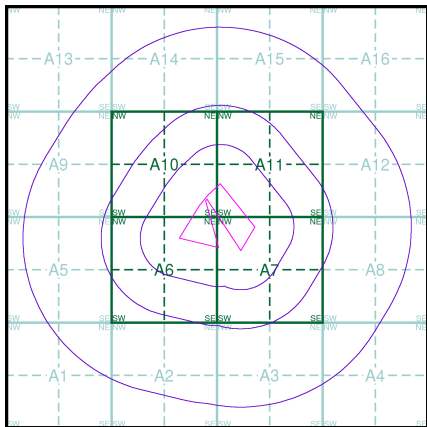
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 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.

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Map Name(s) and Date(s)

SU18SW 1948 1:10,560	SU18SE 1950 1:10,560
SU17NW 1950 1:10,560	SU17NE 1947 1:10,560

Historical Aerial Photography - Slice A



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HSILIRB

Order Details

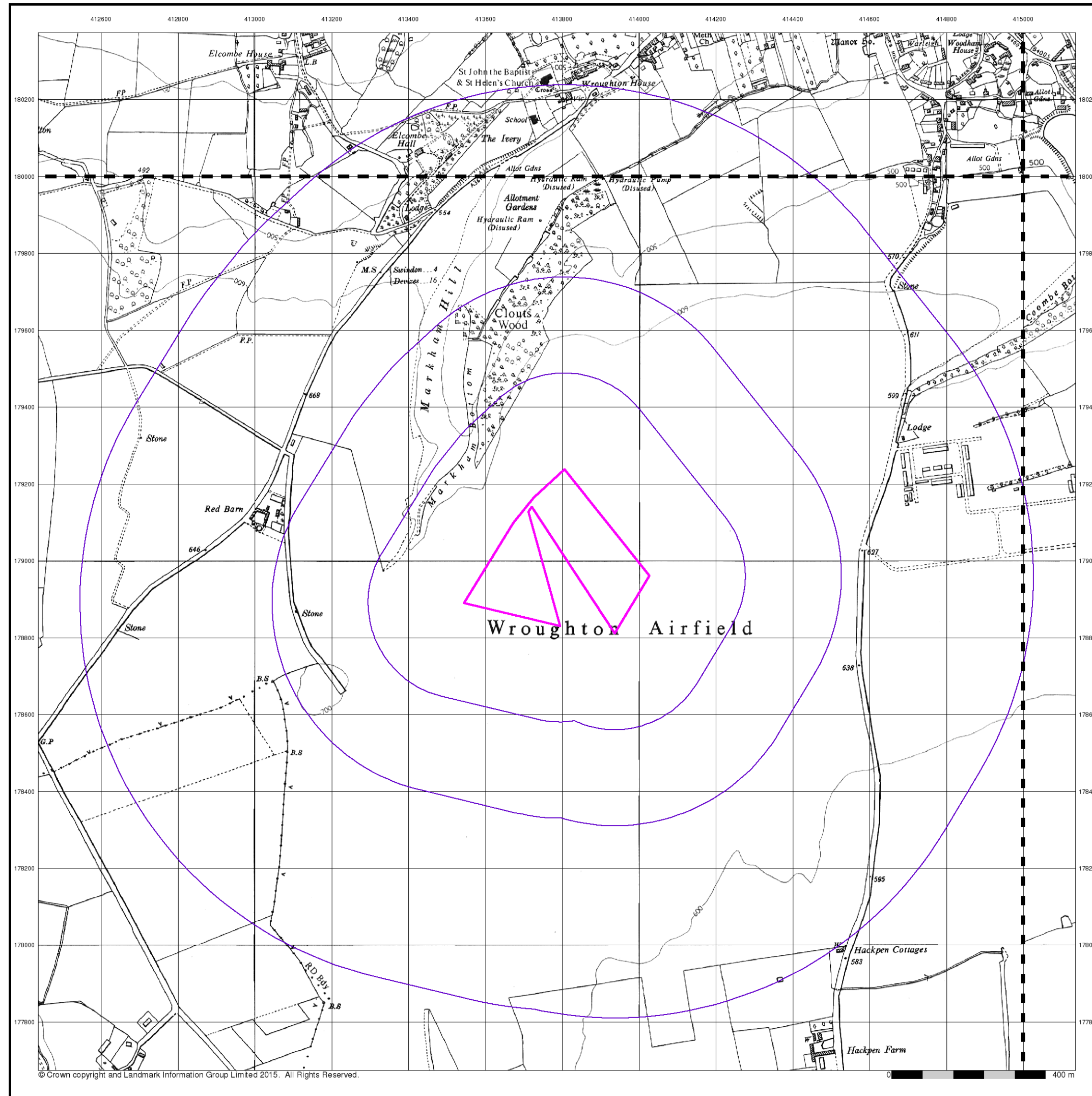
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility,
Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

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Ordnance Survey Plan

Published 1960

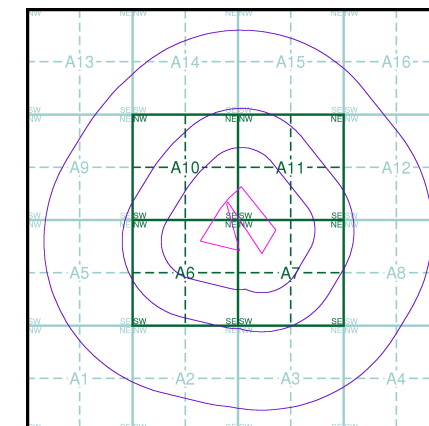
Source map scale - 1:10,000

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.

Map Name(s) and Date(s)

SU18SW	SU18SE
1960	1960
1:10,560	1:10,560
SU17NW	SU17NE
1960	1960
1:10,560	1:10,560

Historical Map - Slice A



Order Details

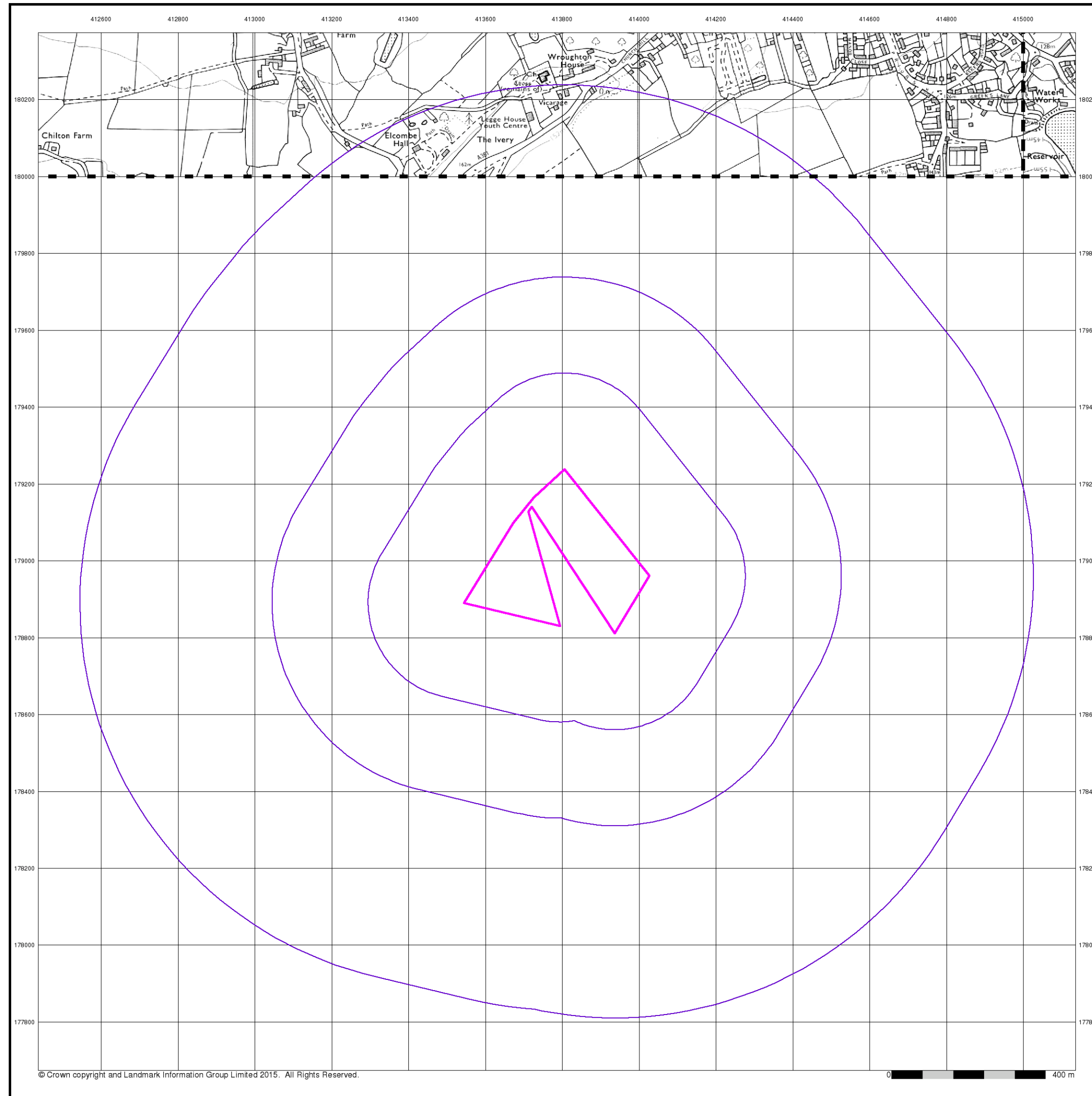
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

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Ordnance Survey Plan

Published 1973 - 1977

Source map scale - 1:10,000

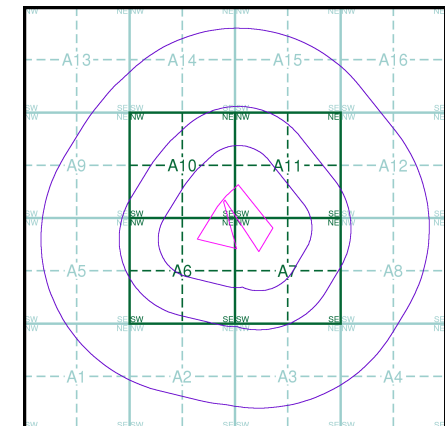
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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.

Map Name(s) and Date(s)

SU18SW	SU18SE
1973	1977
1:10,000	1:10,000



Historical Map - Slice A



Order Details

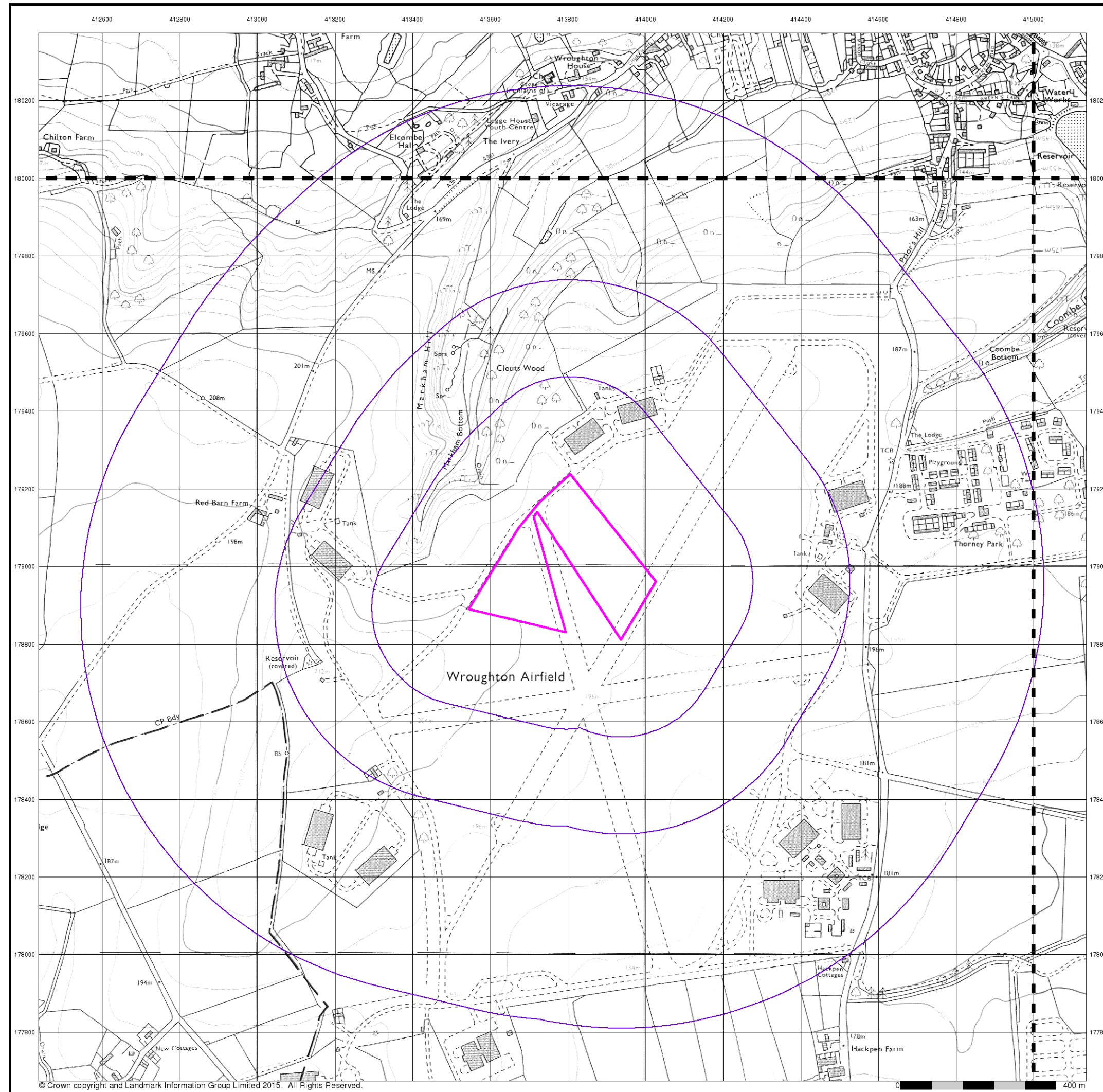
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
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Ordnance Survey Plan

Published 1981 - 1987

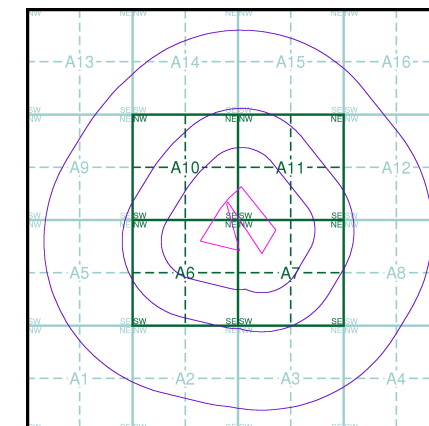
Source map scale - 1:10,000

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.

Map Name(s) and Date(s)

SU18SW	SU18SE
1981	1987
1:10,000	1:10,000
SU17NW	SU17NE
1982	1983
1:10,000	1:10,000

Historical Map - Slice A



Order Details

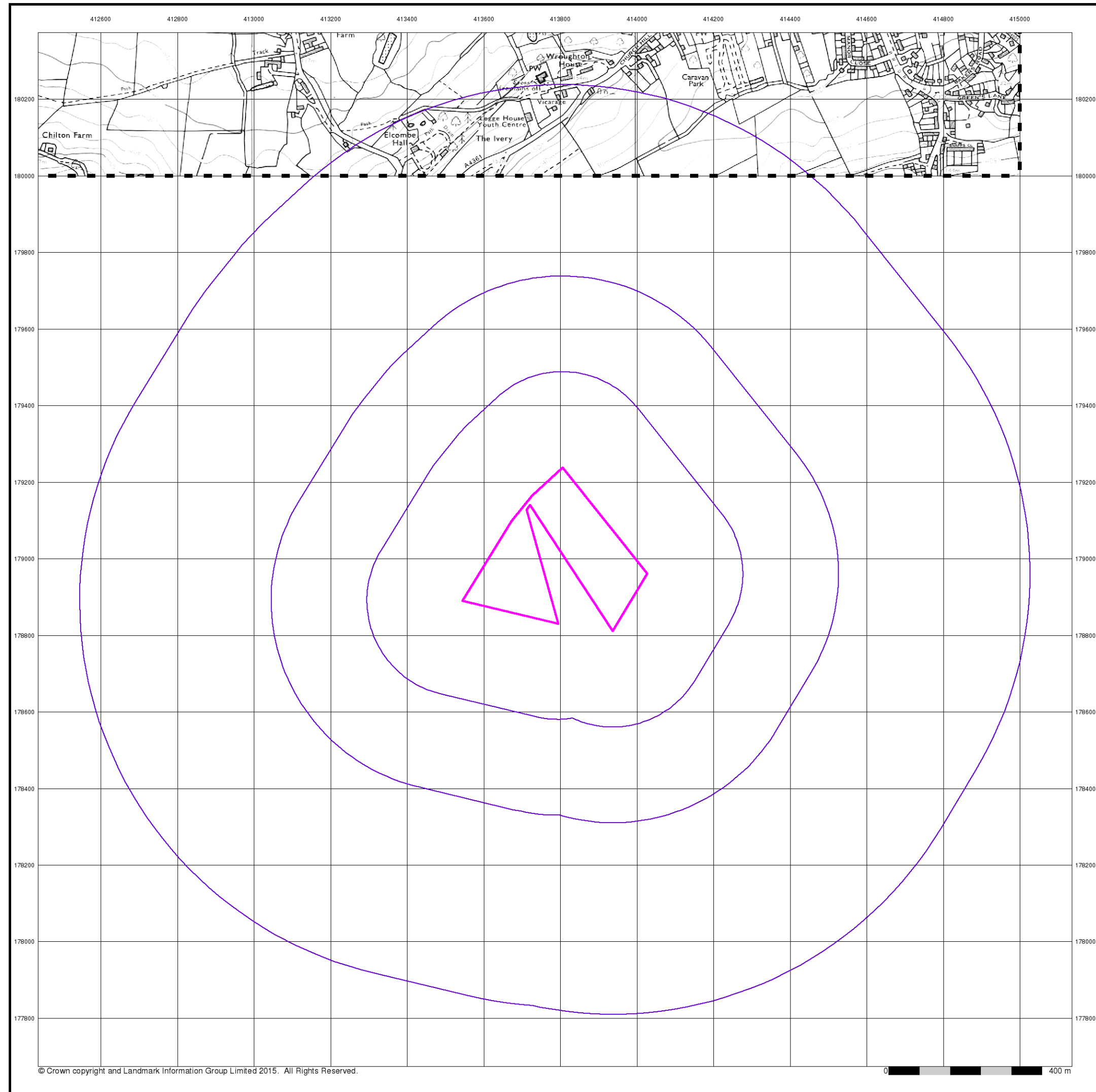
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
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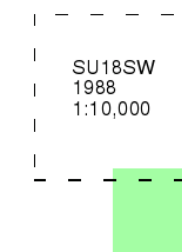
Ordnance Survey Plan

Published 1988

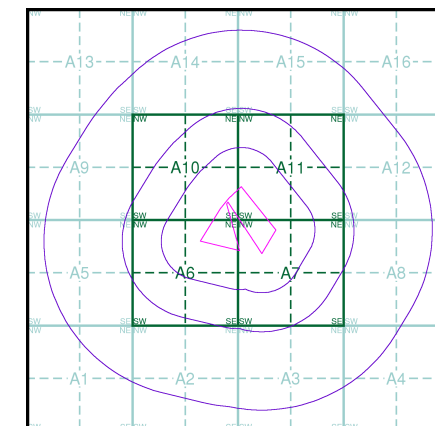
Source map scale - 1:10,000

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.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

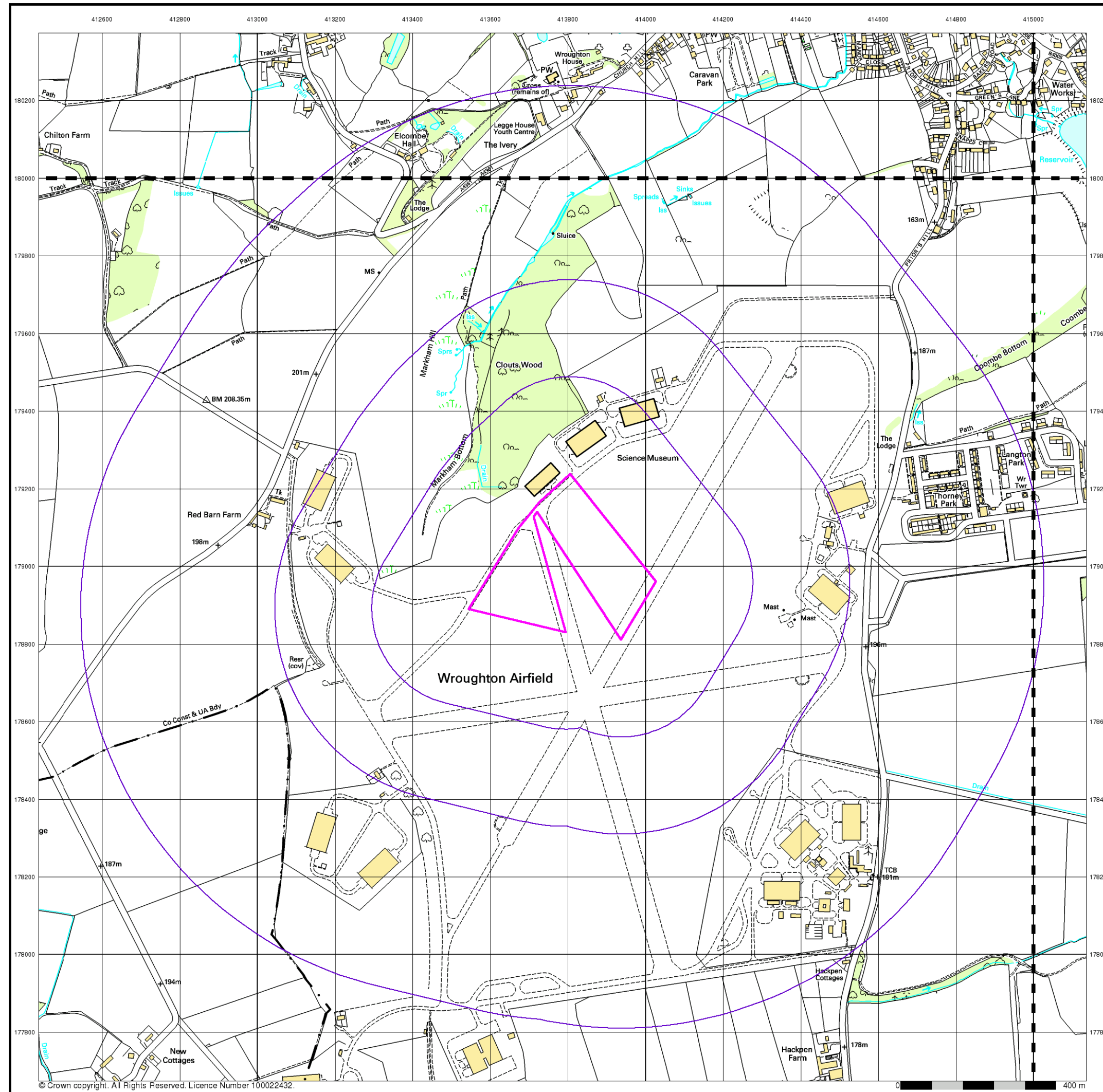
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

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10k Raster Mapping

Published 1999

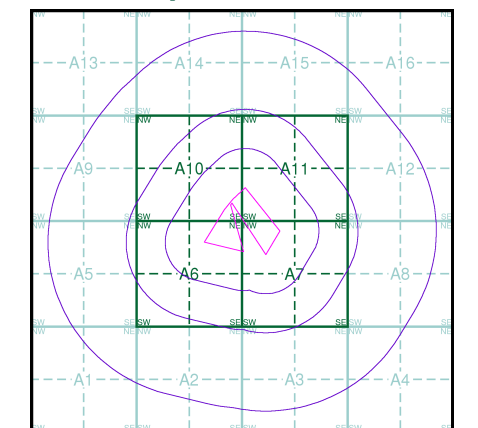
Source map scale - 1:10,000

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)

SU18SW	SU18SE
1999	1999
1:10,000	1:10,000
SU17NW	SU17NE
1999	1999
1:10,000	1:10,000

Historical Map - Slice A



Order Details

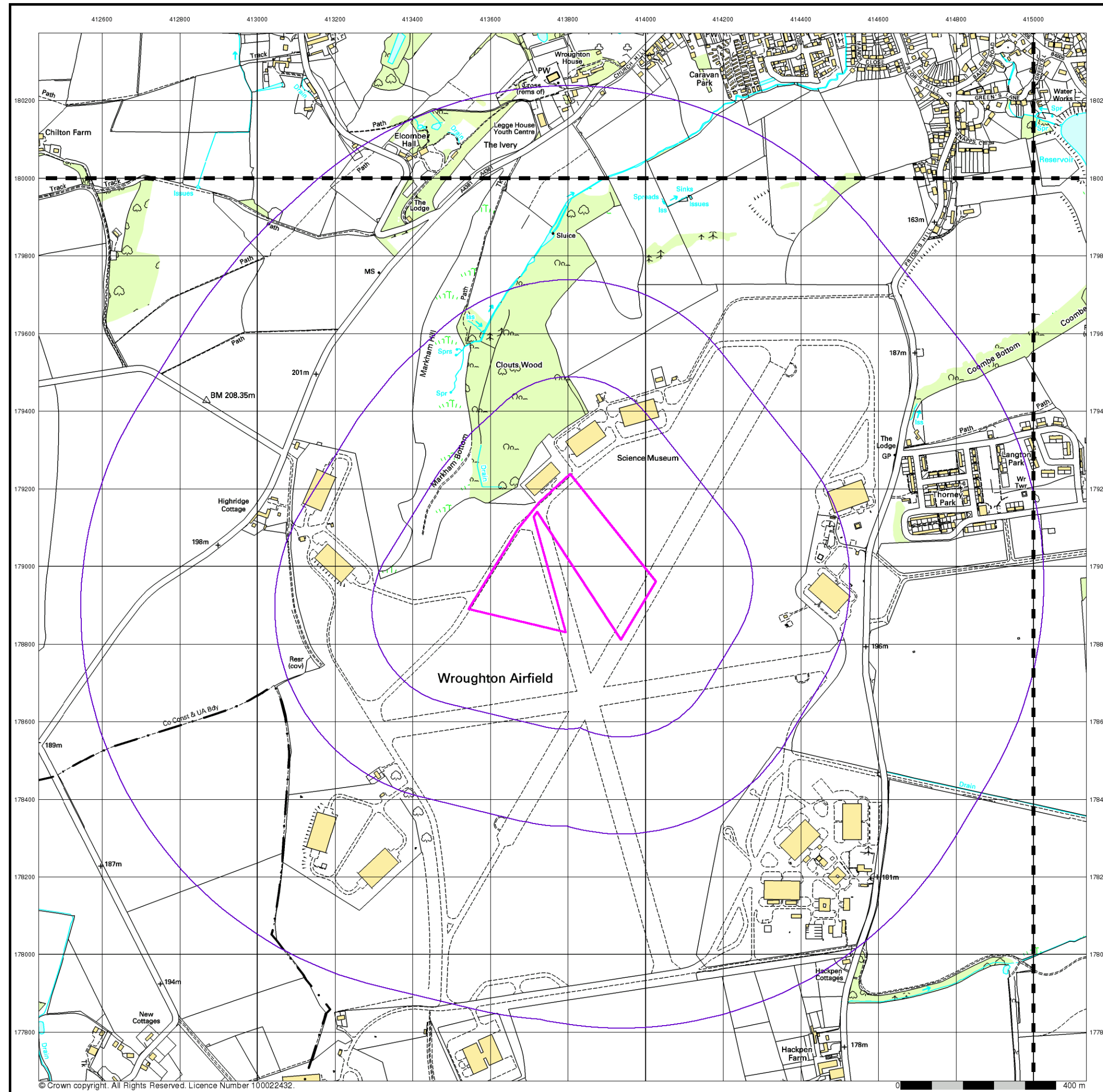
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
Search Buffer (m): 1000

Site Details

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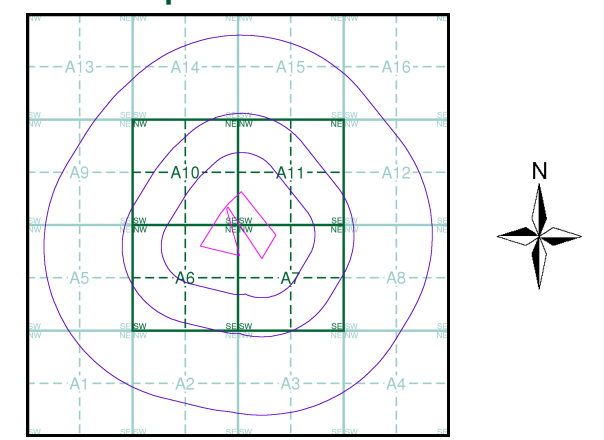
10k Raster Mapping
Published 2006
Source map scale - 1:10,000

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)

SU18SW	SU18SE
2006	2006
1:10,000	1:10,000
SU17NW	SU17NE
2006	2006
1:10,000	1:10,000

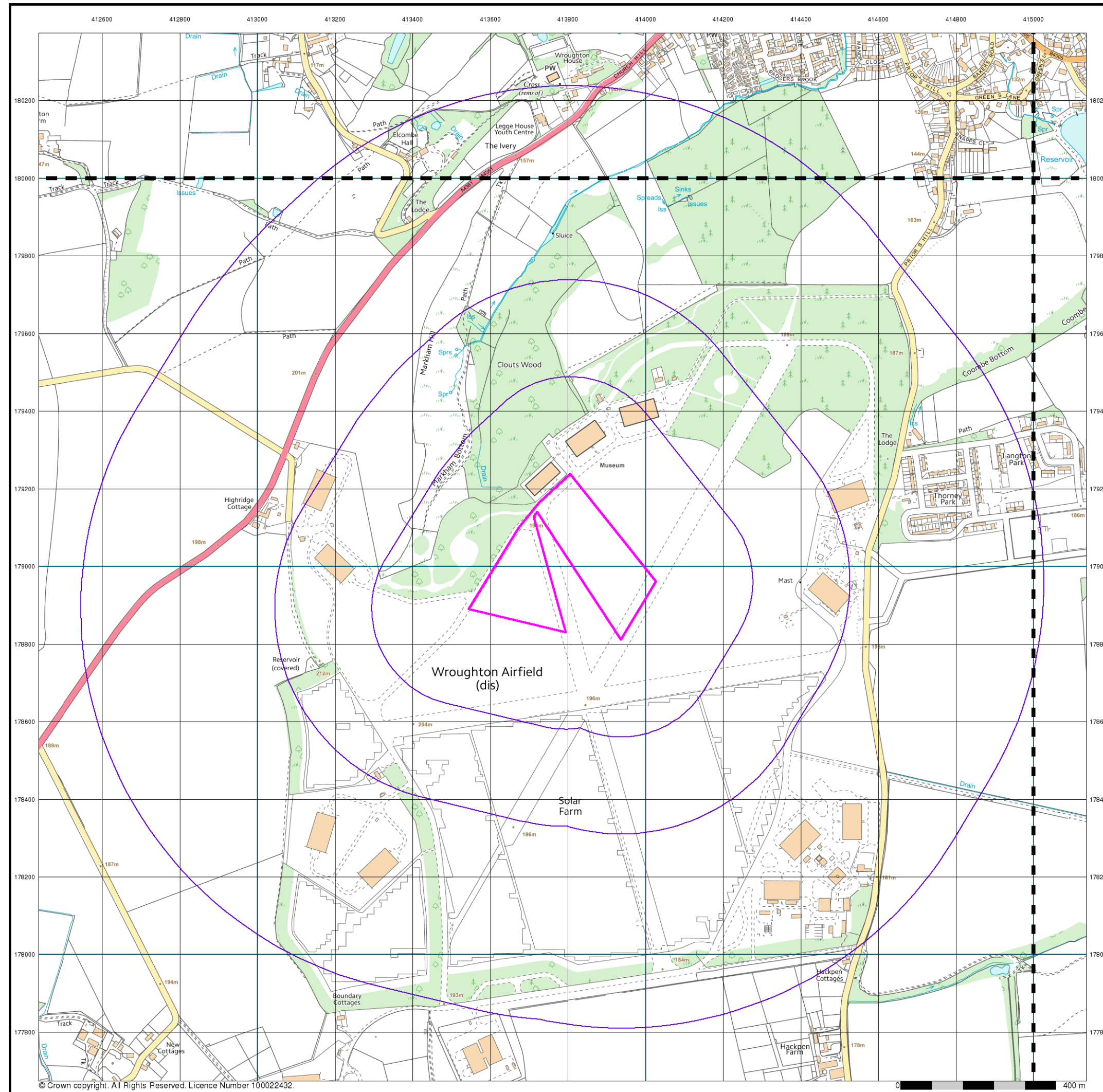
Historical Map - Slice A



Order Details
Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
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VectorMap Local

Published 2017

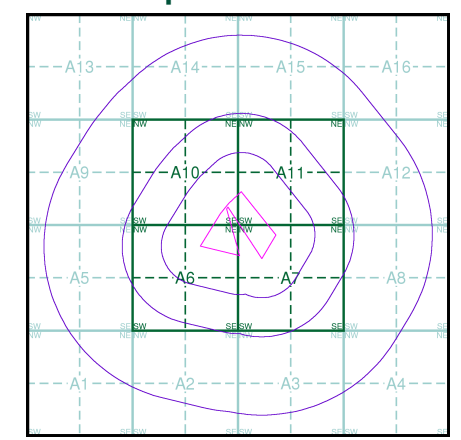
Source map scale - 1:10,000

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)

SU18SW 2017 Variable	SU18SE 2017 Variable
SU17NW 2017 Variable	SU17NE 2017 Variable

Historical Map - Slice A



Order Details

Order Number: 143521870_1_1
Customer Ref: SMG One Collection Facility, Wroughton
National Grid Reference: 413790, 178990
Slice: A
Site Area (Ha): 9.19
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