



Hollins Strategic Land

Desk Study Report

For

Land off Berry Hill Road, Adderbury,
Banbury

July 2017

REPORT NO: 17HSL004/DS

- *Desk Studies and Site Walkovers*
- *Intrusive Contaminated Land Investigations*
- *Geotechnical Appraisals and Ground Investigations*
- *Landfill Gas Assessments and Remedial Design*
- *Remediation Design and Implementation*
- *Remediation Project Management and Supervision*
- *Site Abnormal Assessments (Foundations and Contaminated Land)*

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CONTENTS

| | | |
|---|---|----|
| 1 | EXECUTIVE SUMMARY | 3 |
| 2 | SITE DESCRIPTION | 5 |
| | 2.1 Introduction | |
| | 2.2 Site Location | |
| | 2.3 Site Description | |
| 3 | SITE HISTORY | 7 |
| | 3.1 Site History from Ordnance Survey Maps | |
| | 3.2 Summary of Site History | |
| 4 | GEOLOGY | 9 |
| | 4.1 Published Geology | |
| | 4.2 Geological Features | |
| | 4.3 Hydrogeological and Hydrological Features | |
| 5 | ENVIRONMENTAL DATA | 14 |
| | 5.1 Waste | |
| | 5.2 Industrial Land Uses | |
| 6 | SUMMARY OF ENVIRONMENTAL SENSITIVITY | 16 |
| | 6.1 Sources | |
| | 6.2 Pathways and Receptors | |
| 7 | INITIAL CONTAMINATION CONCEPTUAL MODEL | 18 |
| | 7.1 Source-Pathway-Receptor-Linkages | |
| | 7.2 Contamination Summary | |
| | 7.3 Geotechnical Constraints | |
| 8 | SCOPE OF GROUND INVESTIGATION | 21 |
| | 8.1 Objectives of the Ground Investigation | |
| | 8.2 Proposed Ground Investigation Scope | |
| 9 | REFERENCES | 22 |

APPENDIX A

- i) Site Location Plan
- ii) Site Photographs

APPENDIX B

- i) Historical Mapping

APPENDIX C

- i) Envirocheck Report

APPENDIX D

- i) Conceptual Model

APPENDIX E

- i) Notes on Limitations

1 EXECUTIVE SUMMARY

Note – The following summary is not exhaustive and is to be used for guidance purposes only. The full report should be consulted for full details.

Site Location

The site is located north of Berry Hill Road, Adderbury, Banbury, OX17 3HF. The coordinates on National Grid are centred on 446940, 234860. The proposed site is approximately 4.02 hectares (Ha) in total.

Proposed Development

The proposed construction of residential dwellings with associated infrastructure, gardens and public open space.

Site Description:

On Site

The site is rectangular in shape and can be accessed via a metal gate off Berry Hill Road. The site is mainly undeveloped and consists of a number of agricultural fields separated by electric fencing. The fields are used for both growing hay and horse grazing. A stable area and menagerie are located along the eastern boundary of site. Areas of localised Made Ground were noted within the stable area.

The topography of the site dips in a northerly direction. Levels along the northern border of site range between 97m AOD – 100m AOD and levels along the southern border of site range between 109m AOD – 100m AOD.

Overhead services were present in the very north western corner of site. A few old tyres were noted across the site.

Site History

The site has remained undeveloped until circa 2006, where a path and horse stables are shown on the eastern half of site. A small area along the very western site boundary is also shown to be fenced off. Circa 2017, the field boundaries are altered.

Surrounding Area

The surrounding area has a history of allotments immediately east and west and 30m south between circa 1900/1922 – 1977, a gas works 20m south west between circa 1922 – 1977 and a sewage works 20m north between circa 1922 – 1999. Residential development began to the west circa 1977. A pumping station is shown 50m north east circa 1999 – present.

Published Geology

The BGS map (1:10,000 SP43NE 1957 and SP43SE 1973) shows the geology beneath the site as the following:

- Drift – No superficial deposits recorded.
- Bedrock - Very north of site – Dyrham Formation – Siltstone and Mudstone, Interbedded. Rest of site – Marlstone Rock Formation – Ferruginous Limestone and Ironstone.

Hydrogeology and Hydrology

- There are no superficial deposits recorded on site.
- The bedrock deposits of the Limestone and Ironstone across the majority of site are classed as a Secondary A Aquifer (Moderate Permeability) and the bedrock deposits of the Siltstone and Mudstone to the very north of the site are classed as a Secondary Undifferentiated Aquifer (Unproductive - Low Permeability).
- The site does not lie within a Groundwater Source Protection Zone as defined by the Environment Agency.
- The nearest surface water feature is an unnamed drain located 66m N. This drain leads onto the Sor Brook.

Radon

The site boundary is in a high probability radon area as greater than 30% of properties are above the action level. Full radon protective measures may be necessary in the construction of new dwellings or extensions.

Summary of Environmental Data

Possible Contamination Sources:

- Current Land Use - On Site – Unlikely.
- Historical Land Use - On Site – No.
- Allotments – 0m E and 0m W – Possible.
- Former Gas Works – 20m SW – Possible.

- Former Sewage Works – 20m N – Possible.
- Former Recorded Mineral Site – 100m E – Possible.
- Pollution Incidents into Watercourse – 163m NE – No.

Pathways and Receptors:

- Aquifers – Below Site – Possible.
- Watercourses – 66m N – No.

Qualitative Risk Assessment:

In this qualitative risk assessment, a Low - Moderate risk for ground gas and contamination exists across the site. It is likely that remedial action may be necessary at the site, the likes of which cannot be confirmed until the geotechnical and contamination ground investigation has been completed.

Proposed Ground Investigation Scope:

On assessing the potential risks on site, we have compiled the following recommendations for intrusive investigation:

- Two (2 No) days trial pitting to 3.00m - 4.00mbgl using a JCB 3CX.
- Eight (8 No) small diameter boreholes to 3.00mbgl installed with gas monitoring wells to assess risk of ground gas migration at anticipated foundation depth. Target areas of Made Ground on site, and former allotments, gas works and sewage works immediately off site.
- Six (6 No) ground gas monitoring visits over a period of at least 6 months with varying barometric pressures.
- Twenty five (25 No) soil samples (topsoil, made ground and natural) taken for chemical analysis to benchmark contamination levels across the site. Proposed testing will include but not be limited to the following: heavy metals suite (comprising; As, Cd (low level), Cr Vi, Pb, Hg, Se, Ni, Cu, Zn), Organic Matter, Sulphate, pH, speciated polycyclic aromatic hydrocarbons, TPH CWG. Asbestos testing within topsoil and Made Ground with quantification for positive samples.
- Geotechnical analysis of samples if clay strata is encountered for tree heave protection and concrete design classification.
- Should elevated determinant levels be encountered, additional leachate testing within soil and/or groundwater testing may be required.

The scope of works should be agreed with the Local Authority prior to the intrusive ground investigation and as such may change.

2 SITE DESCRIPTION

2.1 Introduction

This investigation was carried out on the instruction of Hollins Strategic Land. The purpose of the work was to carry out a Desk Study to provide geotechnical and contamination risk information for the proposed construction of residential dwellings with associated infrastructure, gardens and public open space. A Proposed Layout Plan can be seen below;



2.2 Site Location

The site is located north of Berry Hill Road, Abberbury, Banbury, OX17 3HF. The coordinates on National Grid are centred on 446940, 234860. The proposed site is approximately 4.0 hectares (Ha) in total. See Site Location Plan in Appendix A.

2.3 Site Description

2.3.1 On Site

The site was visited by a Geo-Environmental Engineer on the 27th June 2017 and photographs can be found in Appendix A.

The site is rectangular in shape and can be accessed via a metal gate off Berry Hill Road. The site is mainly undeveloped and consists of a number of agricultural fields separated by electric fencing. The fields are used for both growing hay and horse grazing. A stable area and menagerie are located along the eastern boundary of site. Areas of localised Made Ground were noted within the stable area. A number of metal gates allow access between the fields. A path leads from the metal gate at the entrance of site to the stable area.

The topography of the site dips in a northerly direction, with the central northern area of the site being the lowest point. Levels along the northern border of site range between 97m AOD – 100m AOD and levels along the southern border of site range between 109m AOD – 100m AOD.

Overhead services were present in the very north western corner of site. A few old tyres were noted across the site.

2.3.2 Surrounding Area

Surrounding land uses for the site are as follows:

- North – 0m – 250m N is a mixture of agricultural land, a dismantled railway and Sor Brook. 250m – 500m N is the village of Adderbury.
- East – 0m – 230m E is agricultural land followed by the A4260. 250m – 500m E is Station Yard Industrial Estate and Twyford Mill.
- South – Immediately S is Berry Hill Road followed by agricultural land to 500m S.
- West – 0m – 500m W are residential dwellings (village of West Adderbury).

3 SITE HISTORY

3.1 Site History from Ordnance Survey Maps

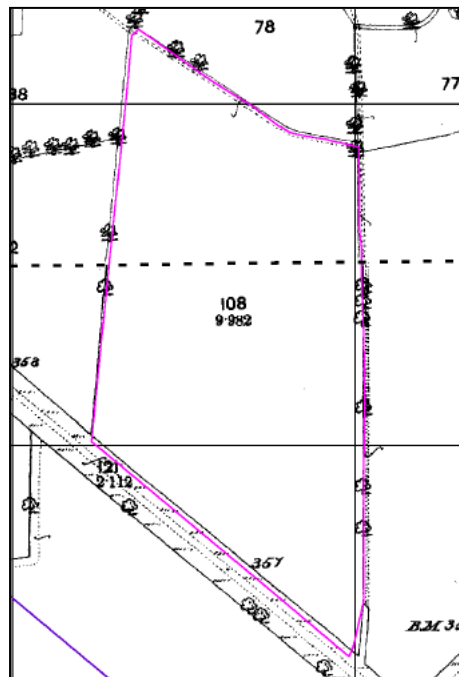
A search of available historic maps was undertaken to establish the land use history of the site. Extracts of the maps discussed below and can be found in full in Appendix B of this report. All maps are Ordnance Survey unless otherwise stated. All distances quoted on OS maps are taken from the site boundary, which is marked on the map.

3.2 Summary of Site History

3.2.1 On Site

The earliest map is the 1881 – 1882 1:2,500 map which shows the site as undeveloped and comprising of one (1 No) field. A number of trees are shown to outline the field. An extract of this map is shown below;

1881 – 1882 1:2,500 map



No significant changes are shown to occur on site until circa 2006, where a path and horse stables are shown on the eastern half of site. A small area along the very western site boundary is also shown to be fenced off.

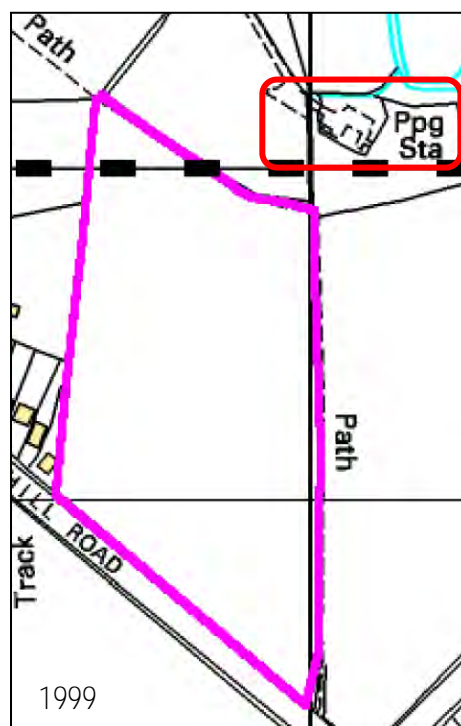
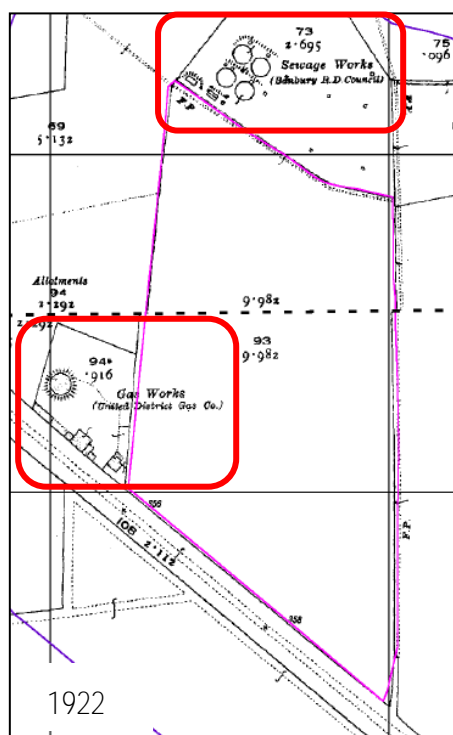
Circa 2017, the field boundaries are altered, and the site is now shown to comprise ten (10 No) individual fields.

3.2.2 Surrounding Area

The following table summarises the significant changes in historical use surrounding the site:

| Date First Shown | Land Uses |
|------------------|--|
| 1881 - 1882 | 200m N – Railway (shown as dismantled circa 1977). 220m N – Corn Mill (Shown as the 'Old Mill' circa 1977. Still present). 250m – 500m NW – Village of West Adderbury (still present). 250m – 500m N – Village of Abberbury (still present). |
| 1900 | 30m S – Allotments (no longer shown circa 1977). 150m SSE – Quarry (shown as part of tramway circa 1922. No longer shown circa 1977). |
| 1922 | 0m E – Allotments (no longer shown circa 1973). 0m W – Allotments (shown as residential circa 1977. Residential still present). 100m S – Tramway (no longer shown circa 1977). 20m SW – Gas Works (shown as residential circa 1977. Residential still present). 20m N – Sewage Works (expands circa 1993. No longer shown circa 1999). |
| 1955 | 175m – 250m W – Residential development (still present). 250m – 500m E – Twyford Mill (still present) (expands to show Station Yard Industrial Estate circa 1993. Industrial Estate still present). |
| 1977 - 1983 | 35m – 350m W - Residential development (still present). 300m NW – 500m NW - Residential development (still present). 500m NW – Burial Ground (still present). |
| 1993 - 1994 | No significant changes. |
| 1999 | 50m NE – Pumping Station (still present). |
| 2006 | No significant changes. |
| 2017 | 350m – 500m W – Residential development (still present). |

An extract of the 1922 1:2,500 map showing the gas works located 20m SW and the sewage works located 20m N can be seen below. An extract of the 1999 1:10,000 map showing the pumping station located 50m NE can also be seen below.



4 GEOLOGY

The following section details the published and available geological data available for the site and the surrounding area. All data is taken from the Envirocheck Data report located in Appendix C unless otherwise stated. This report should be referred to for full details.


4.1 Published Geology

The documented geology of the site is summarised on the British Geological Survey map principally, with further site specific details detailed below.


| Geology | Drift | Solid |
|---|-------------------------------------|--|
| 1:10,000 SP43NE 1957 and SP43SE 1973 | No superficial deposits recorded | Very north of site – Dyrham Formation – Siltstone and Mudstone, Interbedded Rest of site – Marlstone Rock Formation – Ferruginous Limestone and Ironstone |

Geology 1:10,000 Maps Legends







Artificial Ground and Landslip

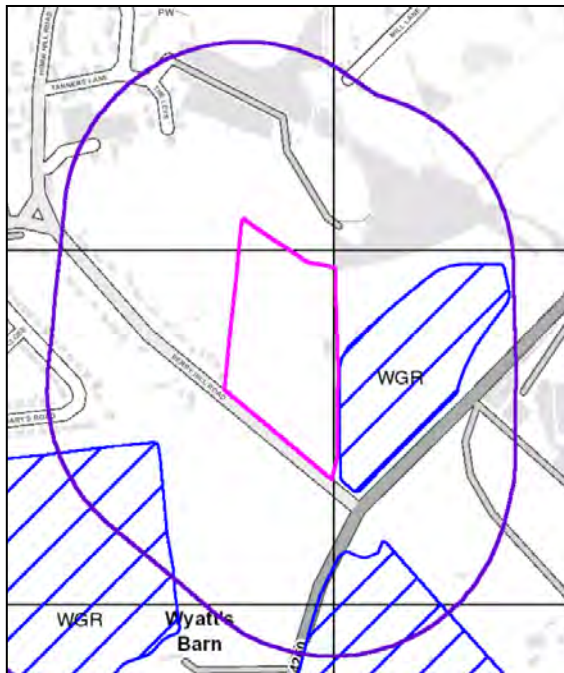
| Map Colour | Lex Code | Rock Name | Rock Type | Min and Max Age |
|---|----------|---------------------------|-----------|---------------------|
|  | WGR | Worked Ground (Undivided) | Void | Holocene - Holocene |

Superficial Geology

| Map Colour | Lex Code | Rock Name | Rock Type | Min and Max Age |
|---|----------|-----------|-----------------------------|-------------------------|
|  | ALV | Alluvium | Clay, Silt, Sand and Gravel | Flandrian - Pleistocene |

Bedrock and Faults

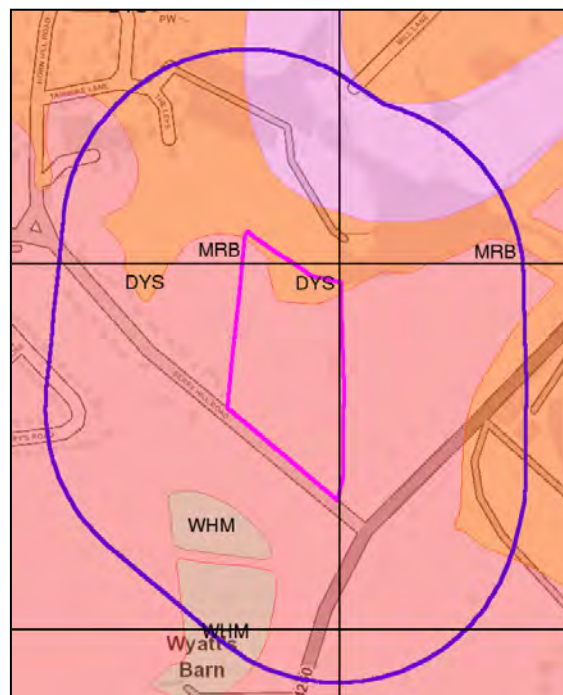
| Map Colour | Lex Code | Rock Name | Rock Type | Min and Max Age |
|---|----------|------------------------------|-------------------------------------|-------------------------------|
|  | NS | Northampton Sand Formation | Sandstone, Limestone and Ironstone | Aalenian - Aalenian |
|  | WHM | Whitby Mudstone Formation | Mudstone | Toarcian - Toarcian |
|  | DYS | Dyrham Formation | Siltstone and Mudstone, Interbedded | Pliensbachian - Pliensbachian |
|  | MRB | Marlstone Rock Formation | Ferruginous Limestone and Ironstone | Toarcian - Pliensbachian |
|  | CHAM | Charmouth Mudstone Formation | Mudstone | Pliensbachian - Sinemurian |
|  | Fault | | | |



Artificial Ground and Landslip



Superficial Geology



Bedrock Geology

4.1.1 Fault Lines

There are no fault lines located within 250m of site.

4.2 Geological Features

The table below summarises the presence/absence of recorded mining, extraction and natural cavities records within 500m of site. If entries are present within 250m, further details are provided in the relevant section below.

| Data Type | On Site | 0 – 250m | 250 – 500m |
|----------------------------|---------|----------|------------|
| Geological | | | |
| BGS Recorded Mineral Sites | - | 2 | 1 |
| Man Made Mining Cavities | - | - | - |
| Natural Cavities | - | - | - |

4.2.1 BGS Recorded Mineral Sites

There are two (2 No) BGS Recorded Mineral Sites within 250m of site as detailed below;

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|--|--|------------------------------|---------|------------------|
| 106 | BGS Recorded Mineral Sites Site Name: Berryhill Pit Location: West Adderbury, Adderbury, Banbury, Oxfordshire Source: British Geological Survey, National Geoscience Information Service Reference: 10603 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Jurassic Geology: Marlstone Rock Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m | A13SE (E) | 100 | 1 | 447105 234840 |
| 107 | BGS Recorded Mineral Sites Site Name: Wyatt's Barn Location: Oxford Road, Banbury, Oxfordshire Source: British Geological Survey, National Geoscience Information Service Reference: 57068 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Jurassic Geology: Marlstone Rock Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m | A8NE (S) | 188 | 1 | 447015 234490 |

4.2.2 Radon

The site boundary is in a high probability radon area as greater than 30% of properties are above the action level. Full radon protective measures may be necessary in the construction of new dwellings or extensions.

4.3 Hydrogeological and Hydrological Features

The table below summarises the presence/absence of any hydrological licences and incidents within 500m of the proposed site. If entries are present within 250m, further details are provided in the relevant subsection below;

| Data Type | On Site | 0 – 250m | 250 – 500m |
|--|---------|----------|------------|
| Hydrological | | | |
| Discharge Consents | - | 3 | 6 |
| Pollution Incidents to Controlled Waters | - | 6 | 5 |
| Water Abstractions | - | - | 2 |

4.3.1 Discharge Consents

There are three (3 No) Discharge Consents within 250m, all of which refer to the pumping station to the north east. The current Discharge Consent is detailed below;

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|--|--|------------------------------|---------|------------------|
| 1 | Discharge Consents Operator: Thames Water (S+W) Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Adderbury Stw, Adderbury, Oxon Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Cssc.2451 Permit Version: 1 Effective Date: 30th November 1985 Issued Date: 30th November 1985 Revocation Date: 18th September 1989 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Sor Brook Status: Transferred from COPA 1974 Positional Accuracy: Located by supplier to within 100m | A13NE (NE) | 159 | 2 | 447100 235100 |

4.3.2 Pollution Incidents to Controlled Waters

There are six (6 No) Pollution Incidents to Controlled Waters within 250m, only one (1 No) of which is classed as Category 2 – Significant Incident and is detailed below. For full details please refer to Appendix C;

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|---|--|------------------------------|---------|------------------|
| 8 | Pollution Incidents to Controlled Waters Property Type: Not Given Location: ADDERBURY Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 8th January 1992 Incident Reference: W1920009 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m | A13NE (NE) | 163 | 2 | 447105 235100 |

4.3.3 Hydrogeology:

- There are no superficial deposits recorded on site.
- The bedrock deposits of the limestone and Ironstone across the majority of site are classed as a Secondary A Aquifer (Moderate Permeability) and the bedrock deposits of the Siltstone and Mudstone to the very north of the site are classed as a Secondary Undifferentiated Aquifer (Unproductive – Low Permeability).
- The site does not lie within a Groundwater Source Protection Zone as defined by the Environment Agency.
- The nearest surface water feature is an unnamed drain located 66m N. This drain leads onto the Sor Brook.

5 ENVIRONMENTAL DATA

The following section details environmental data available for the site and the surrounding area. Full details can be found in the Envirocheck Report by Landmark located in Appendix C.

The table below summarises the presence/absence of any waste, hazardous substance sites of industrial land uses within 250m of the proposed site. If entries are present within 500m, further details are provided in the relevant section below.

| Data Type | On Site | 0 – 250m | 250 – 500m |
|--|---------|----------|------------|
| Pollution Controls/Registers | | | |
| Integrated Pollution Controls | - | - | - |
| Integrated/Local Authority Pollution Prevention and Controls | - | - | 1 |
| Prosecutions Relating to Authorised Processes | - | - | - |
| Registered Radioactive Substances | - | - | - |
| Substantiated Pollution Incident Register | - | - | - |
| Waste | | | |
| BGS Recorded Landfill Sites | - | - | - |
| Historic Landfill Sites | - | - | - |
| Integrated Pollution Control Registered Waste Sites | - | - | - |
| Licensed Waste Management Facilities (Landfill Boundaries and Locations) | - | - | 1 |
| Local Authority Recorded Landfill Sites | - | - | - |
| Potentially Infilled Land (Non-Water) | - | 2 | 1 |
| Potentially Infilled Land (Water) | - | - | - |
| Registered Landfill Sites | - | - | - |
| Registered Waste Transfer Sites | - | - | 1 |
| Registered Waste Treatment or Disposal Sites | - | - | - |
| Hazardous Sites | | | |
| COMAH/Explosive sites/NIHHS/Planning Hazardous Substances | - | - | - |
| Industrial Land Uses | | | |
| Contemporary Trade Directory Entries | - | 1 | 19 |
| Fuel Station Entries | - | - | - |
| Points of Interest – Commercial Services | - | - | 5 |
| Points of Interest – Education and Health | - | - | - |
| Points of Interest – Manufacturing and Production | - | 3 | 7 |
| Points of Interest – Public Infrastructure | - | - | 3 |
| Points of Interest – Recreational and Environmental | - | - | 2 |
| Gas Pipelines | - | - | - |

5.1 Waste

5.1.1 Potentially Infilled Land (Non- Water)

There are two (2 No) areas of Potentially Infilled Land (Non-Water) within 250m of site as detailed below;

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|--|--|------------------------------|---------|---------------|
| 102 | Potentially Infilled Land (Non-Water) Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1994 | A13SW (S) | 96 | - | 446897 234594 |
| 103 | Potentially Infilled Land (Non-Water) Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1994 | A13SE (SE) | 118 | - | 447069 234584 |

5.2 Industrial Land Uses

5.2.1 Contemporary Trade Directory Entries

There is one (1 No) Contemporary Trade Directory Entry within 250m of site, however this is classed as 'inactive'. This entry is detailed below;

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|---|--|------------------------------|---------|---------------|
| 110 | Contemporary Trade Directory Entries Name: Motec Location: 14, Twyford Mill, Oxford Road, Adderbury, Banbury, OX17 3SX Classification: Engine Rebuilding & Reconditioning Status: Inactive Positional Accuracy: Automatically positioned to the address | A13SE (E) | 247 | - | 447252 234814 |

5.2.2 Points of Interest – Manufacturing and Production

There are three (2 No) Points of Interest – Manufacturing and Production within 250m of site, as detailed below;

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|--------|--|--|------------------------------|---------|---------------|
| 127 | Points of Interest - Manufacturing and Production Name: Tank Location: OX17 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location | A13NE (NE) | 55 | 6 | 447013 235028 |
| 128 | Points of Interest - Manufacturing and Production Name: Works Location: OX17 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location | A13SE (E) | 240 | 6 | 447245 234804 |
| 128 | Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location | A13SE (E) | 242 | 6 | 447247 234807 |

6 SUMMARY OF ENVIRONMENTAL SENSITIVITY

The following section is a review of the environmental sensitivity of the site as discussed in Sections 2 – 5. Significant potential risks are discussed in the following subsections and will then be evaluated as part of the Site Conceptual Model in Section 7.

Sources are defined as where pollution comes from, pathways are a route in which the pollution travels and receptors are anything affected by a pollutant. Further details on Source-Pathway-Receptor methodology can be found in Appendix D.

The table below focuses on significant site specific sources, pathways and receptors. **More 'generic'** pathways and receptors (such as site end uses) will be covered as part of the full Site Conceptual Model in Section 7.

6.1 Sources

| Source | Distance/ Direction | Details | Significant Risk |
|--------------------------------------|------------------------|--|---------------------|
| Current Land Use | On Site | Site is currently undeveloped apart from a stables and outside menagerie located along the eastern border of site. Areas of localised Made Ground were identified in the vicinity of the stable buildings however, due to the size of the areas identified, the risk of any potential contamination is lowered. Ground investigation to confirm. | Unlikely |
| Historical Land Use | On Site | Site has remained historically undeveloped since historic maps began. No historic sources of contamination anticipated. | No |
| Allotments | 0m E and 0m W | Allotments present on the boundary E between circa 1922 – 1977 and on the boundary W between circa 1922 – 1977 before becoming residential. Due to use as allotments there is a possibility of imported soils which may contain heavy metals, TPH's, PAH's and asbestos . No superficial deposits anticipated on site. Ground investigation to confirm. | Possible |
| Former Gas Works | 20m SW | Gas works shown between circa 1922 – 1977 before being shown as residential. Possible ground gas source and possible contamination includes heavy metals, TPH's, PAH's and asbestos . Due to the former gas works being redeveloped to residential, the risk of contamination is lowered due to possible remediation. No superficial deposits anticipated on site. Ground investigation and ground gas monitoring to confirm. | Possible |
| Former Sewage Works | 20m N | Sewage works shown between 1992 – 1999 and expanded in 1993. Land is currently undeveloped. Risk of heavy metals, TPH's, PAH's, nitrates, leachates and asbestos . Also risk of ground gas due to date of demolition. No superficial deposits anticipated on site. Ground investigation and ground gas monitoring to confirm. | Possible |
| Former Recorded Mineral Site | 100m E | Berryhill Pit was recorded 100m E of site for the extraction of iron ore. The extraction is recorded as 'ceased' however the BGS geology map shows an area of worked ground in the vicinity. Depending on the backfill material there is a risk of heavy metals, TPH's, PAH's and asbestos . Also possible ground gas risk. No superficial deposits anticipated on site. Ground investigation and ground gas monitoring to confirm. | Possible |
| Pollution Incidents into Watercourse | 163m NE | One (1 No) significant pollution incident recorded within 250m of site circa 1992. Due to the age of the incident, and the receiving watercourse not coming into close proximity of the site, the pollutant/incidents poses no risk to the proposed site. | No |

6.2 Pathways and Receptors

| Pathways and Receptors | Distance/ Direction | Details | Significant Risk |
|------------------------|---------------------|--|------------------|
| Aquifers | Below Site | There are no superficial deposits recorded on site. The bedrock deposits across the majority of site are classed as a Secondary A Aquifer (Moderate Permeability) and the bedrock deposits to the very north of the site are classed as a Secondary Undifferentiated Aquifer (Unproductive – Low Permeability). Limited contamination anticipated on site, however some off site sources identified. | Possible |
| Watercourses | 66m N | The nearest surface water feature is an unnamed drain located 66m N. This drain leads onto the Sor Brook. Due to the distance from site, no risk is anticipated to the watercourse. | No |

7 INITIAL CONTAMINATION CONCEPTUAL MODEL

For details on how the conceptual model is evaluated please refer to Appendix D.

This section of the report aims to identify land which could potentially be affected by contamination, such that it could affect the value or re-use of the land, or such that mitigation would be required for certain proposed end uses of the land.

Potential contamination sources and environmentally sensitive receptors have been discussed in Section 6. Potentially significant risks are evaluated as part of the subsequent sub-sections.

7.1 Source-Pathway-Receptor-Linkages

The risk assessment uses a 'Source-Pathway-Receptor' methodology for assessing whether a source of contamination could potentially lead to harmful consequences. This means that there needs to be a pollutant linkage from source to receptor for harm to be caused, this linkage consisting of: a source of pollution; a pathway for the pollutant to move along; a receptor that is affected by the pollutant.

The current potential risks to site arising from various Source-Pathway-Receptor linkages are assessed below. A risk may be considered significant if all three of the stages are present and therefore providing a pollution linkage. The various sources, pathways and receptors are considered separately. The assessment is based on the future use, which is understood to be residential with home grown produce.



| Type of Contamination | Potential Sources | Potential Pathway | Potential Receptors | Pollution Linkage | Comment | Estimated Level of Risk |
|--|---------------------|--|-----------------------------------|--------------------|--|-------------------------|
| Ground Gas | See Table 6.1 above | Inhalation of Vapours | Construction/ Maintenance Workers | Potentially Active | Localised Made Ground identified on site could be potential ground gas source. Other ground gas sources identified immediately offsite (former gas works 20m SW and former sewage works 20m N. No recorded superficial deposits in the area. Ground Investigation to confirm. PPE to protect. | Low/Low - Moderate |
| | | Vapours Penetrating Unprotected Buildings | Future Site Users | Potentially Active | Localised Made Ground identified on site could be potential ground gas source. Other ground gas sources identified immediately offsite (former gas works 20m SW and former sewage works 20m N. No recorded superficial deposits in the area. Ground Investigation to confirm. Future site use to be residential. | Low - Moderate |
| Surface and Near Surface Contaminants Within Soils | See Table 6.1 above | Ingestion, Inhalation, Dermal Contact | Current Site Users | Potentially Active | Localised Made Ground identified on site could be potential contamination source. Other contamination sources identified immediately offsite (former gas works 20m SW and former sewage works 20m N. No recorded superficial deposits in the area. Current site use is agricultural/horse grazing and stable area. Ground Investigation to confirm. | Low |
| | | | Construction Workers | Potentially Active | Localised Made Ground identified on site could be potential contamination source. Other contamination sources identified immediately offsite (former gas works 20m SW and former sewage works 20m N. No recorded superficial deposits in the area. Ground Investigation to confirm. PPE to protect. | Low/Low - Moderate |
| | | | Future Site Users | Potentially Active | Localised Made Ground identified on site could be potential contamination source. Other contamination sources identified immediately offsite (former gas works 20m SW and former sewage works 20m N. No recorded superficial deposits in the area. Ground Investigation to confirm. Future site use to be residential with gardens. | Low - Moderate |
| | | | Adjacent Land Users | Potentially Active | Majority of surrounding area remains undeveloped. Residential development to the west of site. | Low/Low - Moderate |
| | | Direct Contact | Structures | Potentially Active | Possible sulphates within the localised Made Ground on site however bigger risk from immediate off site sources. No recorded superficial deposits in the area. Ground Investigation to confirm | Low - Moderate |
| | | Absorption in Root Zone | Plants | Potentially Active | Localised Made Ground identified on site could be potential contamination source. Other contamination sources identified immediately offsite (former gas works 20m SW and former sewage works 20m N. Gardens proposed as part of future end use. | Low - Moderate |
| Mobile Contaminants, Leachables e.g. from Pollution Sources Adjacent to Site/On Site | See Table 6.1 above | Leaching into Groundwater | Groundwater | Potentially Active | No superficial deposits recorded on site. The bedrock deposits across the majority of site are classed as a Secondary A Aquifer (Moderate Permeability) and the bedrock deposits to the very north of the site are classed as a Secondary Undifferentiated Aquifer (Unproductive – Low Permeability). Limited contamination anticipated on site, however some off site sources identified. | Low - Moderate |
| | | Off-site Migration in Surface Water/ Groundwater | Abstractions | Potentially Active | No groundwater abstractions within 500m. Two (2 No) surface water abstractions within 300m – 500m | Low |
| | | | Controlled Waters | Potentially Active | Nearest surface water feature is located 66m N. Due to the distance from site, no risk is anticipated to the watercourse from the proposed development site. | Low |
| Organic and Inorganic Contaminants Within Soils / Groundwater | See Table 6.1 above | Potable Water Supply Pipes | Utilities Workers | Potentially Active | Localised Made Ground identified on site could be potential contamination source. Other contamination sources identified immediately offsite (former gas works 20m SW and former sewage works 20m N. Ground investigation to confirm then liaison with local water supplier. | Low - Moderate |

7.2 Contamination Summary

In this qualitative risk assessment, a Low - Moderate risk for ground gas and contamination exists across the site, although the risk is largely from sources located immediately off site. It is likely that remedial action may be necessary at the site, the likes of which cannot be confirmed until the geotechnical and contamination ground investigation has been completed.

7.3 Geotechnical Constraints

- Existing and redundant services across site.
- Potential shallow bedrock.

8 SCOPE OF GROUND INVESTIGATION

8.1 Objectives of the Ground Investigation

The objectives of the intrusive ground investigation will be to:

- **Clarify the 'Initial Contamination Conceptual Model'.**
- Clarify the initial risk assessment.
- Benchmark the contamination status of the site.
- Provide data for the design of any remedial works that may be required.
- Provide a geotechnical appraisal for the site.

8.2 Proposed Ground Investigation Scope

On assessing the potential risks on site, we have compiled the following recommendations for intrusive investigation:

- Two (2 No) days trial pitting to 3.00m – 4.00mbgl using a JCB 3CX.
- Eight (8 No) small diameter boreholes to 3.00mbgl installed with gas monitoring wells to assess risk of ground gas migration at anticipated foundation depth. Target areas of Made Ground on site, and former allotments, gas works and sewage works immediately off site.
- Six (6 No) ground gas monitoring visits over a period of at least 6 months with varying barometric pressures.
- Twenty five (25 No) soil samples (topsoil, made ground and natural) taken for chemical analysis to benchmark contamination levels across the site. Proposed testing will include but not be limited to the following; heavy metals suite (comprising; As, Cd (low level), Cr Vi, Pb, Hg, Se, Ni, Cu, Zn), Organic Matter, Sulphate, pH, speciated polycyclic aromatic hydrocarbons, TPH CWG. Asbestos testing within topsoil and Made Ground with quantification for positive samples.
- Geotechnical analysis of samples if clay strata is encountered for tree heave protection and concrete design classification.
- Should elevated determinant levels be encountered, additional leachate testing within soil and/or groundwater testing may be required.

The scope of works should be agreed with the Local Authority prior to the intrusive ground investigation and as such may change.

9 REFERENCES

- 9.1 *BS 5930:2015 Code of Practice for Ground Investigation.*
- 9.2 Investigation of Potentially contaminated sites BS10175:2011 +A1:2013.
- 9.3 BS8576:2013 Guidance on investigations for ground gas.
- 9.4 R & D Publication CLR 8 (March 2002) Assessment of Risks to Human Health from Land Contamination: An Overview of the Development of Soil Guideline Values and Related Research. Environment Agency.
- 9.5 R & D Publication CLR 10 (March 2002) The Contaminated Land Exposure Assessment Model (CLEA): Technical basis and algorithms. Environment Agency.
- 9.6 Contaminated Land Risk Assessment; a Guide to Good Practice; CIRIA C552: 2001.
- 9.7 BRE 211 Radon: guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment) (2007 edition).
- 9.8 Assessment of risks to human health from land contamination: an overview of the development of guideline values and related research. EA, 2002.
- 9.9 Health and Safety in Construction, HSG150, HSE, 1996.
- 9.10 Baker W (1987), Investigation Strategy - lecture at City of Birmingham Development Department Symposium on Methane Generating Sites, 9 December 1987, Industrial Research Laboratories, Birmingham.
- 9.11 NHBC Standards, Chapter 4.2, 2017 Building Near Trees.
- 9.12 **'Guidance on Evaluation of Development Proposals on Sites Where Methane and Carbon Dioxide are Present'**, Report Edition No.04 March 2007 NHBC – designed for use with low rise residential properties.
- 9.13 **CIRIA C665 'Assessing risks posed by hazardous ground gases for buildings' 2007** - for high rise residential / flats.
- 9.14 **BS8485:2015 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'.**
- 9.15 **BRE 414 'Protective measures for housing on gas-contaminated land'** Roger Johnson, Parkman Environment 2001.
- 9.16 **BS 8500-2:2015+A1:2016 'Concrete British Standard to BS EN 206. Specification for constituent materials and concrete'.**
- 9.17 **CLR11 'Model Procedures for the Management of Land Contamination' DEFRA 2004.**

APPENDIX A

(i) Site Location Plan



Site Location Plan

The site is located north of Berry Hill Road, Abberbury, Banbury, OX17 3HF. The coordinates on National Grid are centred on 446940, 234860.

(ii) Site Photographs



Access onto site via a metal gate off Berry Hill Road.



Path leading from the site entrance to the stable area.



Metal gates allowing access across site.



Menagerie area located along the eastern boundary of site.



Stable area along the eastern boundary of site.



Localised Made Ground surrounding the stable area.



A few old tyres were noted across site.



Majority of site is used for growing hay.



Panorama showing the site levels dipping in the centre northern area of site.



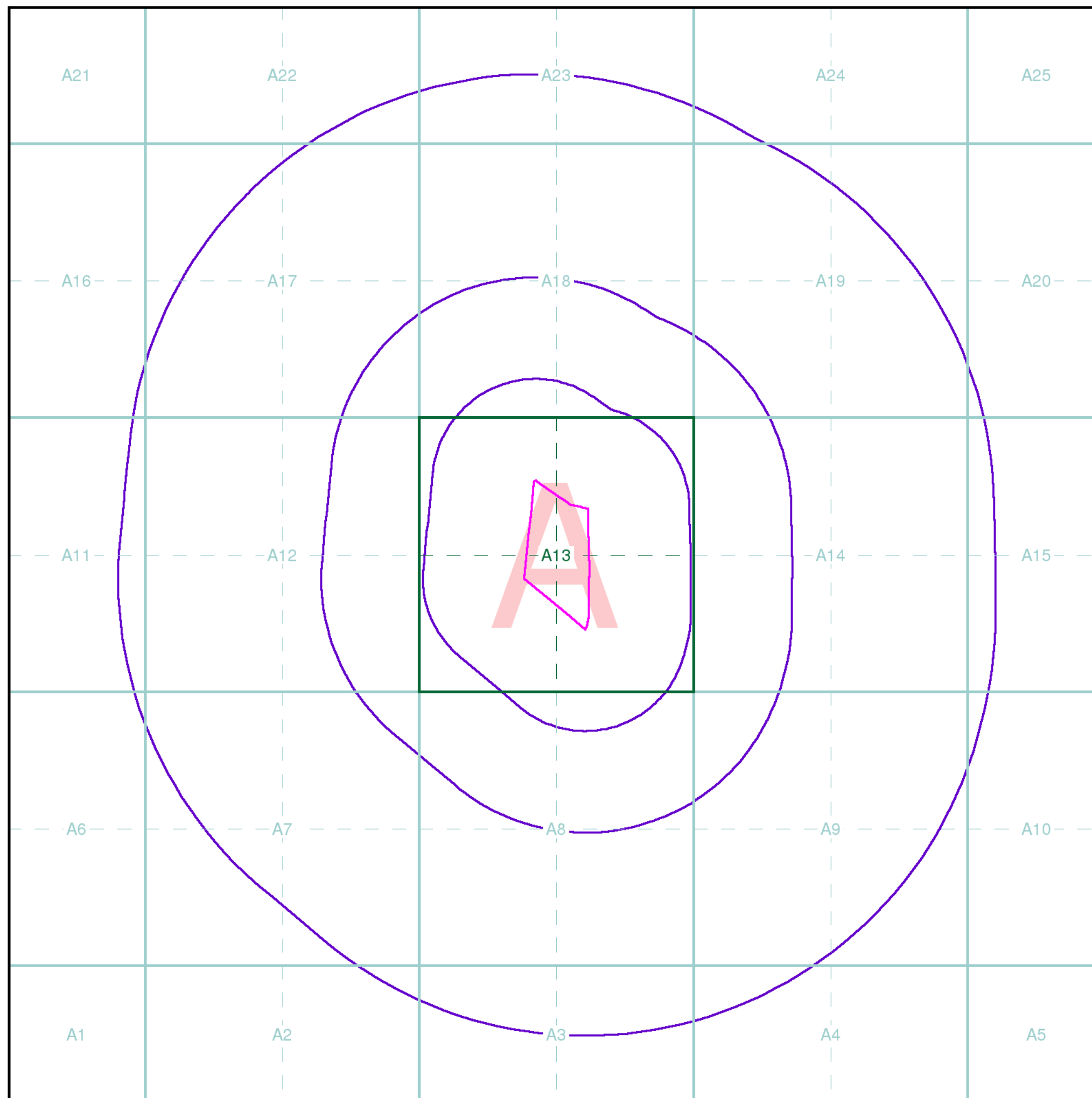
Electric fencing separates the individual fields.



Fields used for horse grazing.

APPENDIX B

(i) Historical Mapping



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.

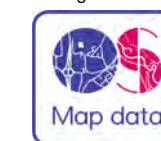
Segment

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

Mr M Fawcett, Betts Geo Environmental, Old Marsh Farm
Barns, Welsh Road, Sealand, Flintshire, CH5 2LY

Order Details

Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446930, 234860
Site Area (Ha): 4.02
Search Buffer (m): 1000

Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF

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

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



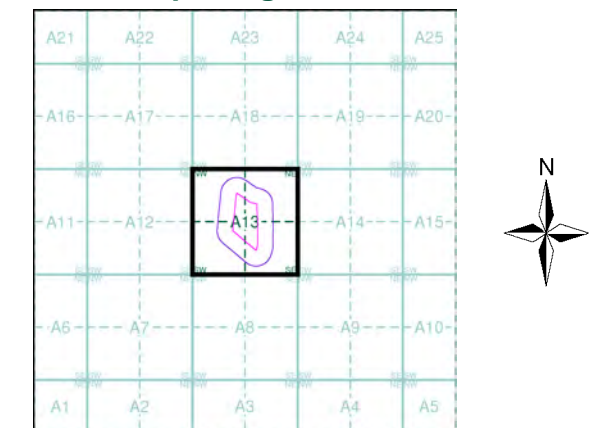
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Historical Mapping & Photography included:

| Mapping Type | Scale | Date | Pg |
|--------------------------------|---------|-------------|----|
| Oxfordshire | 1:2,500 | 1881 - 1882 | 2 |
| Oxfordshire | 1:2,500 | 1900 | 3 |
| Oxfordshire | 1:2,500 | 1922 | 4 |
| Ordnance Survey Plan | 1:2,500 | 1973 - 1974 | 5 |
| Additional SIMs | 1:2,500 | 1984 - 1990 | 6 |
| Additional SIMs | 1:2,500 | 1990 - 1992 | 7 |
| Large-Scale National Grid Data | 1:2,500 | 1994 | 8 |
| Historical Aerial Photography | 1:2,500 | 1999 | 9 |

Historical Map - Segment A13



Order Details

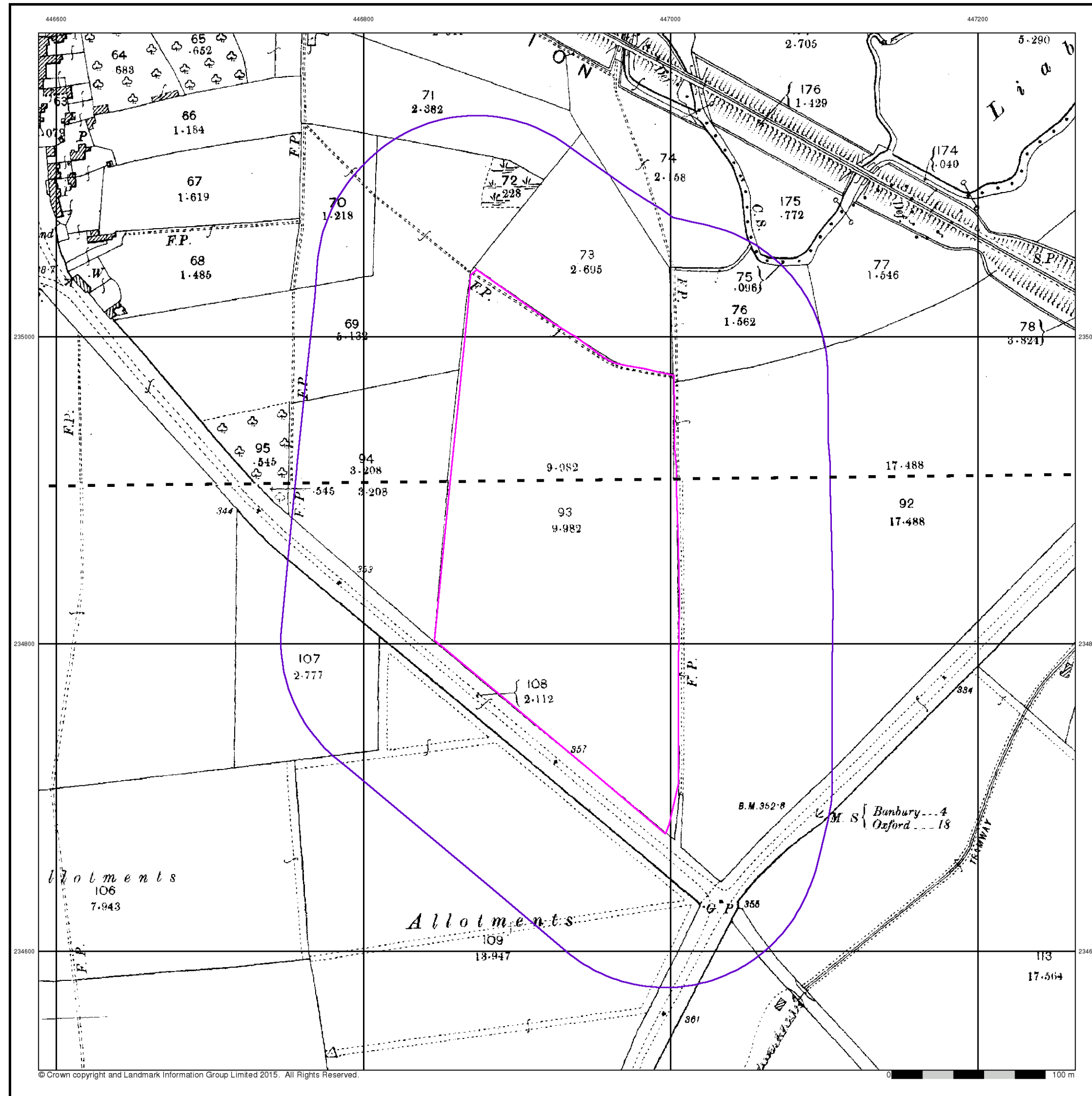
Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446940, 234860
Slice: A
Site Area (Ha): 4.02
Search Buffer (m): 100

Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF

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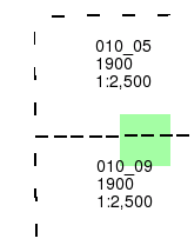
Oxfordshire

Published 1900

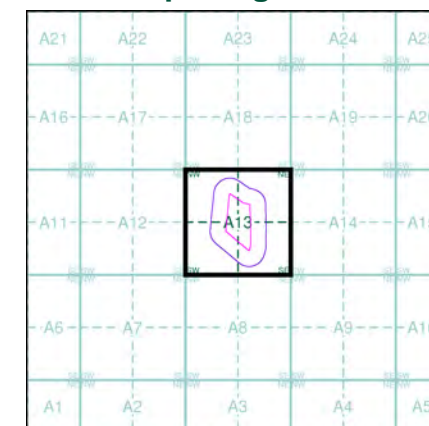
Source map scale - 1:2,500

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 A13



Order Details

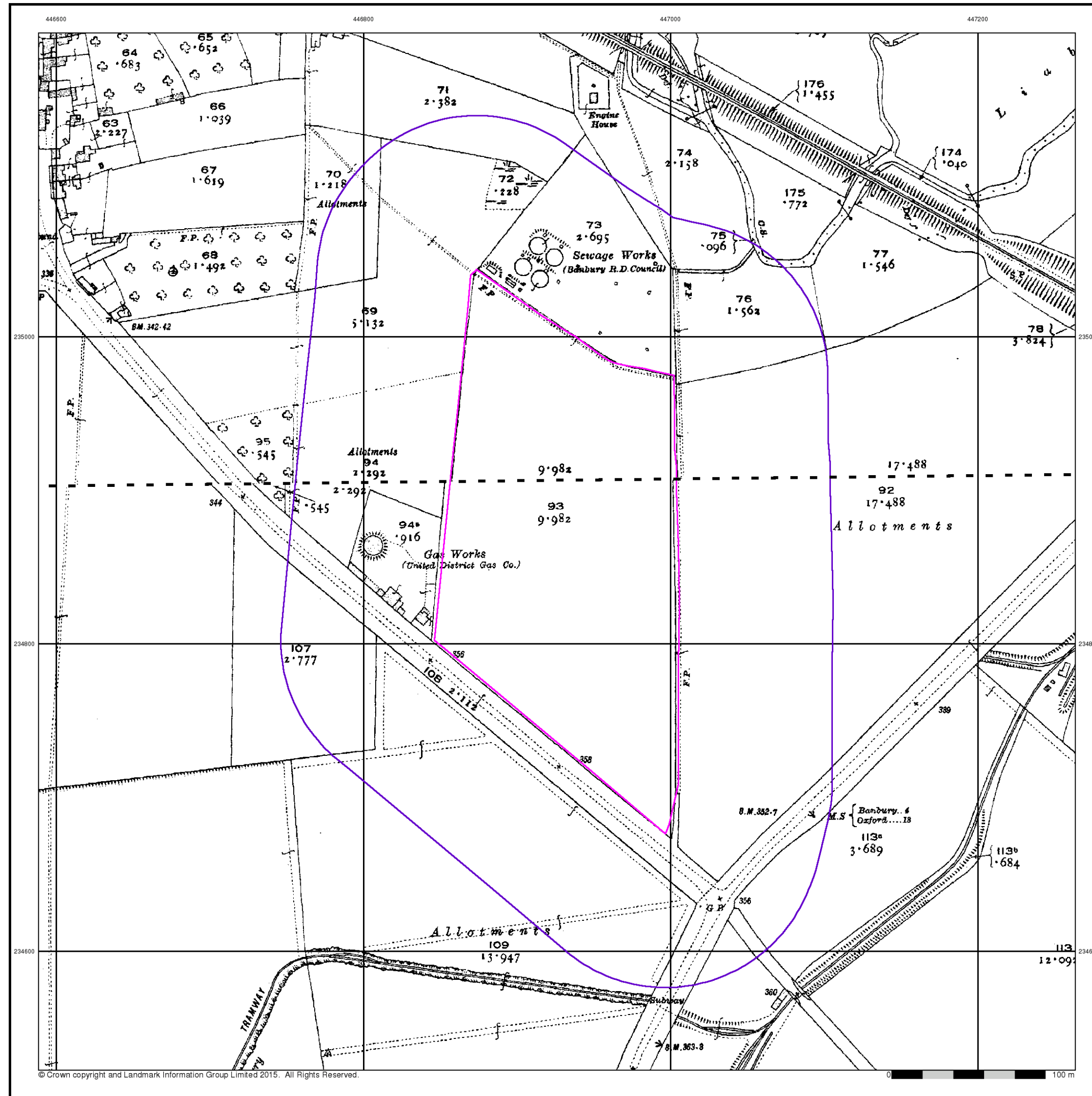
Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446940, 234860
Slice: A
Site Area (Ha): 4.02
Search Buffer (m): 100

Site Details

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Oxfordshire

Published 1922

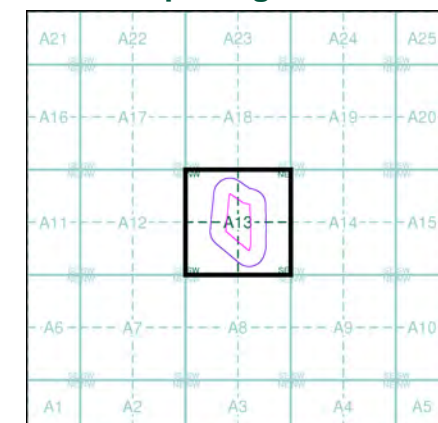
Source map scale - 1:2,500

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

Map Name(s) and Date(s)

| |
|---------|
| 010_05 |
| 1922 |
| 1:2,500 |
| 010_09 |
| 1922 |
| 1:2,500 |

Historical Map - Segment A13

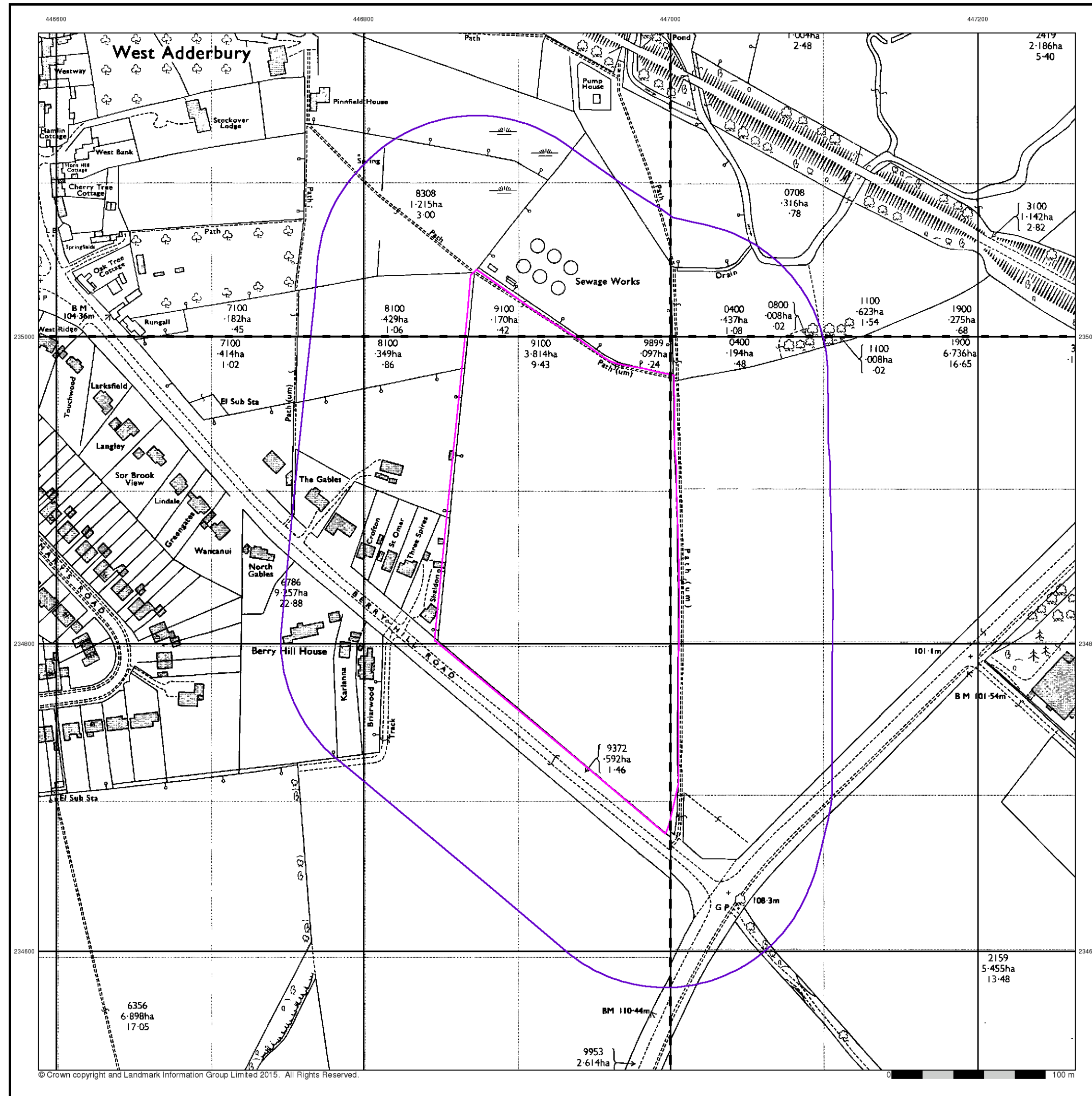


Order Details

Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446940, 234860
Slice: A
Site Area (Ha): 4.02
Search Buffer (m): 100

Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF



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Ordnance Survey Plan

Published 1973 - 1974

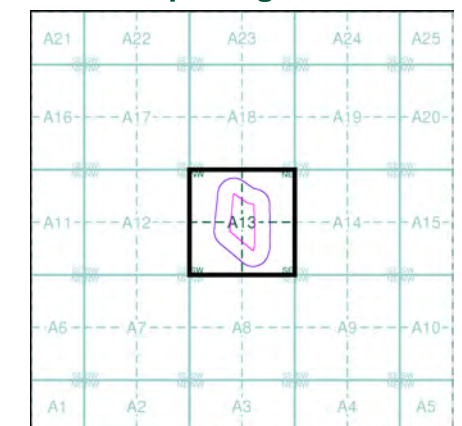
Source map scale - 1:2,500

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)

| | |
|--------|--------|
| SP4635 | SP4735 |
| 1973 | 1973 |
| 12,500 | 12,500 |
| SP4634 | SP4734 |
| 1974 | 1974 |
| 12,500 | 12,500 |

Historical Map - Segment A13

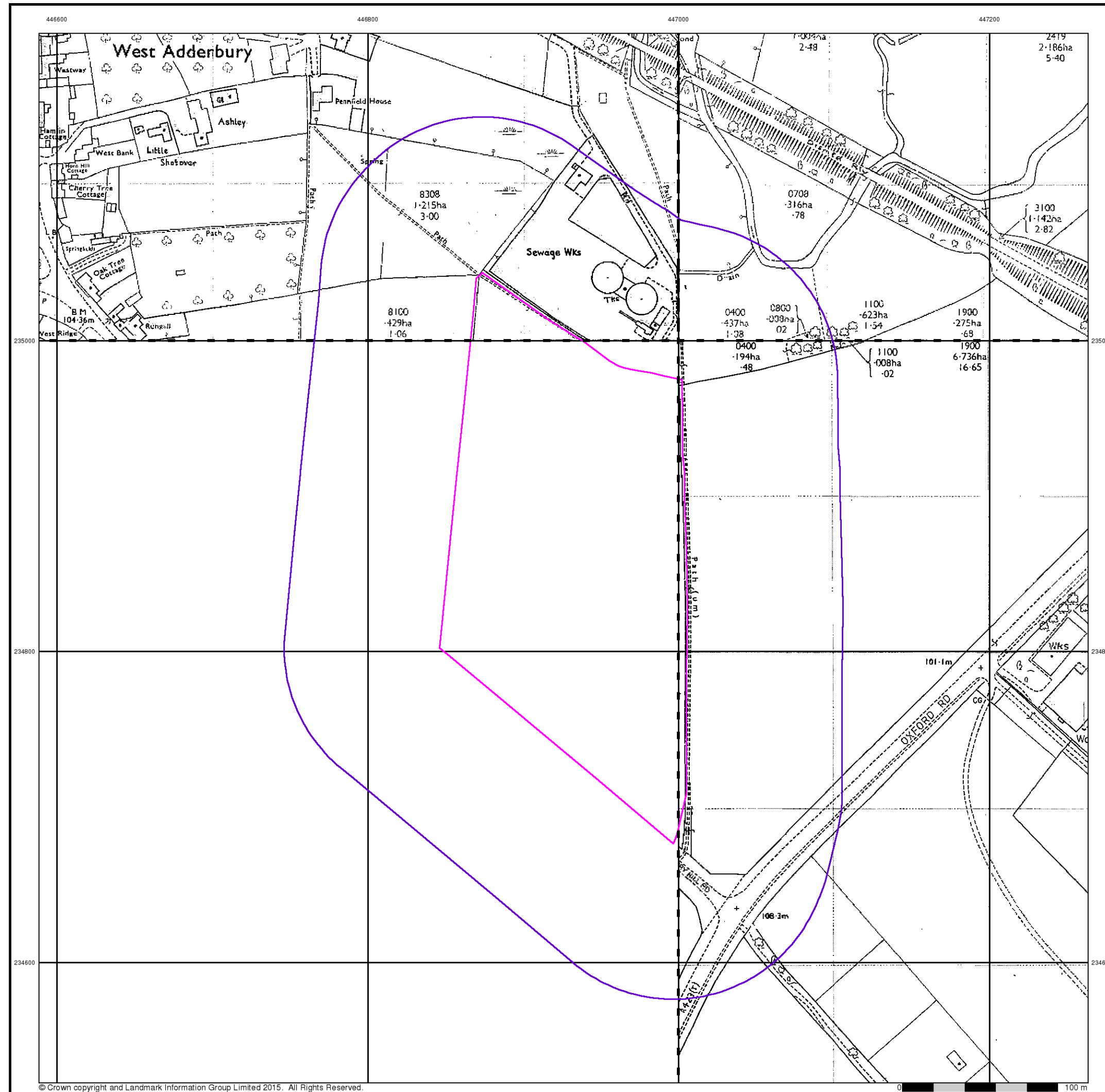


Order Details

Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446940, 234860
Slice: A
Site Area (Ha): 4.02
Search Buffer (m): 100

Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF



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Additional SIMs

Published 1984 - 1990

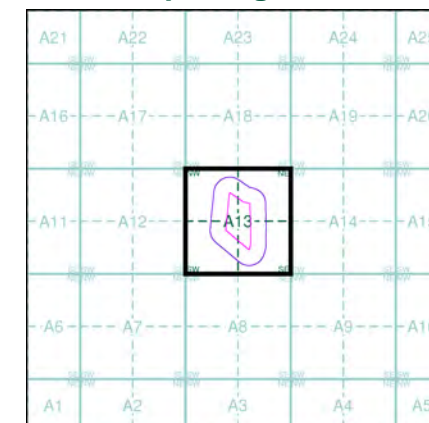
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

| | |
|---------------------------|---------------------------|
| SP4635 1986 1:2,500 | SP4735 1984 1:2,500 |
| | SP4734 1990 1:2,500 |

Historical Map - Segment A13



Order Details

Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446940, 234860
Slice: A
Site Area (Ha): 4.02
Search Buffer (m): 100

Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF



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Additional SIMs

Published 1990 - 1992

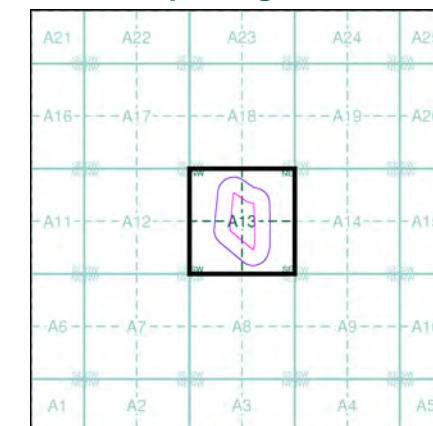
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

| | |
|---------------------------|---------------------------|
| SP4635 1992 1:2,500 | SP4735 1990 1:2,500 |
|---------------------------|---------------------------|

Historical Map - Segment A13

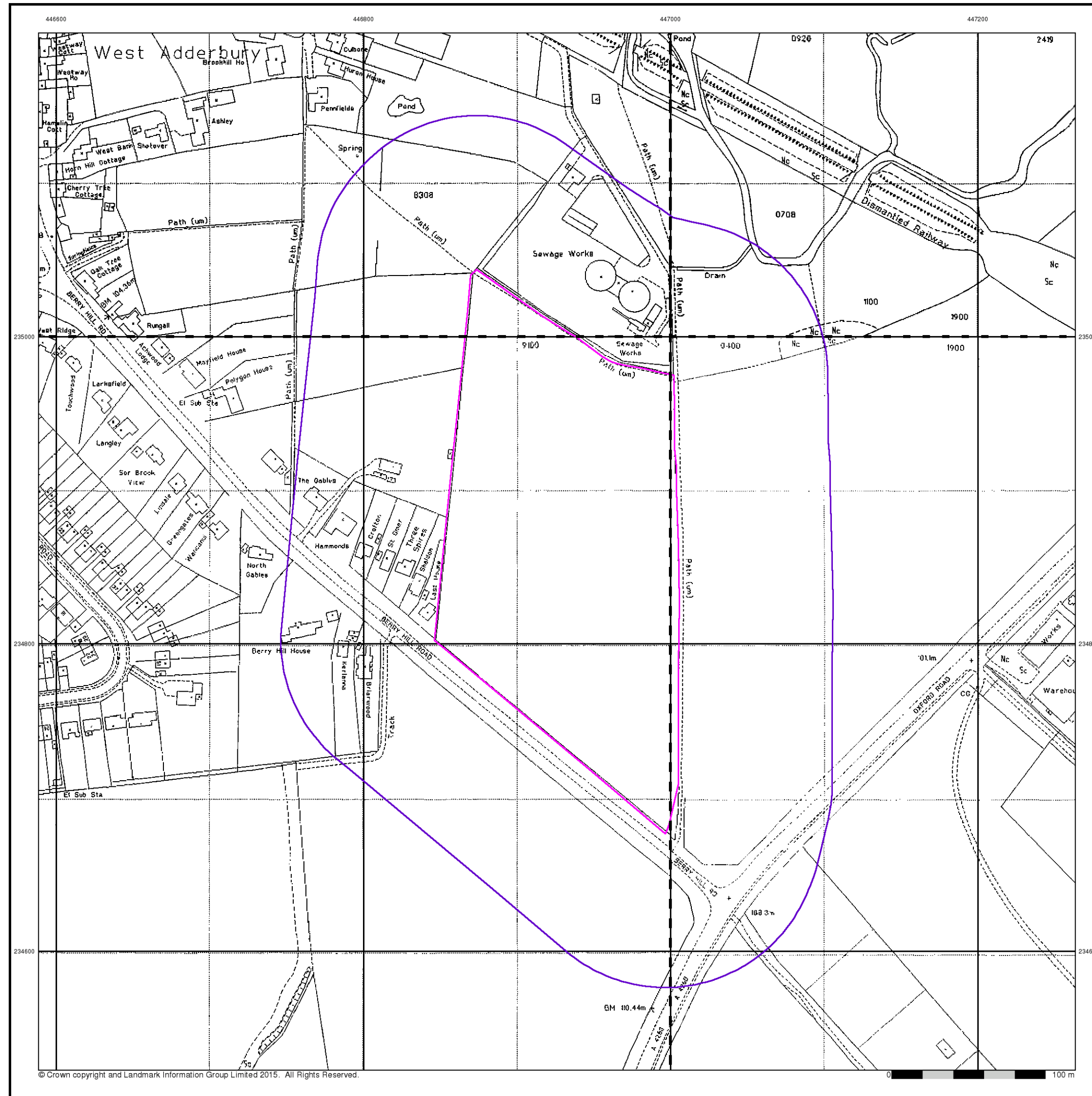


Order Details

Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446940, 234860
Slice: A
Site Area (Ha): 4.02
Search Buffer (m): 100

Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF



Large-Scale National Grid Data

Published 1994

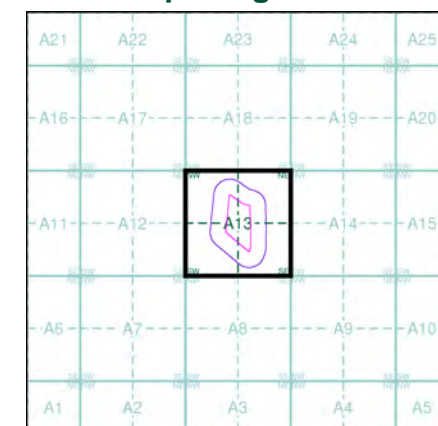
Source map scale - 1:2,500

'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)

| | |
|--------|--------|
| SP4635 | SP4735 |
| 1994 | 1994 |
| 12,500 | 12,500 |
| SP4634 | SP4734 |
| 1994 | 1994 |
| 12,500 | 12,500 |

Historical Map - Segment A13



Order Details

Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446940, 234860
Slice: A
Site Area (Ha): 4.02
Search Buffer (m): 100

Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF

446600

446800

447000

447200

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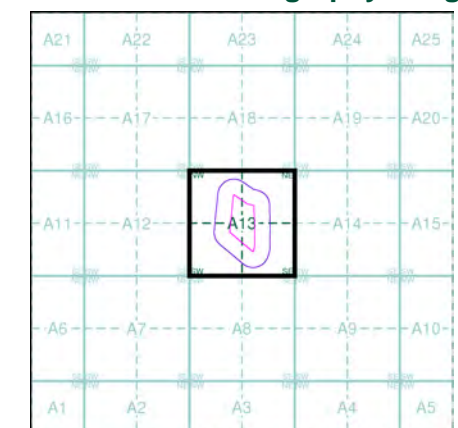
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Historical Aerial Photography

Published 1999

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

Historical Aerial Photography - Segment A13



Order Details

Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446940, 234860
Slice: A
Site Area (Ha): 4.02
Search Buffer (m): 100

Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF

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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 |
| | Ch Church | | Post Office |
| | CH Club House | | Public Convenience |
| | F E Sta Fire Engine Station | | Public House |
| | FB Foot Bridge | | Signal Box |
| | Fn Fountain | | Spring |
| | GP Guide Post | | Telephone Call Box |
| | MP Mile Post | | Telephone Call Post |
| | MS 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 |

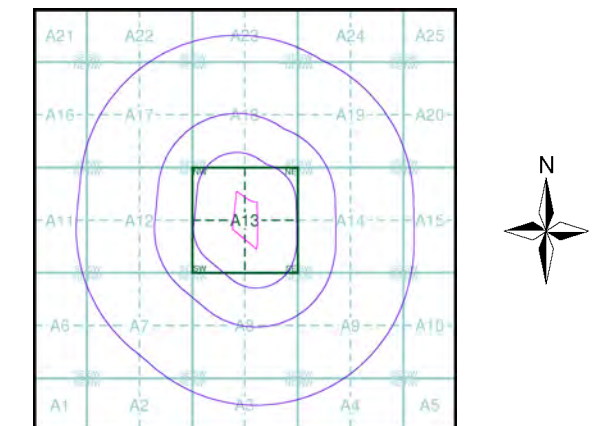
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Historical Mapping & Photography included:

| Mapping Type | Scale | Date | Pg |
|-------------------------------|----------|-------------|----|
| Northamptonshire | 1:10,560 | 1884 | 2 |
| Oxfordshire | 1:10,560 | 1886 | 3 |
| Oxfordshire | 1:10,560 | 1900 | 4 |
| Northamptonshire | 1:10,560 | 1923 | 5 |
| Historical Aerial Photography | 1:10,560 | 1948 | 6 |
| Ordnance Survey Plan | 1:10,000 | 1955 | 7 |
| Ordnance Survey Plan | 1:10,000 | 1977 | 8 |
| Ordnance Survey Plan | 1:10,000 | 1983 | 9 |
| Ordnance Survey Plan | 1:10,000 | 1993 - 1994 | 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

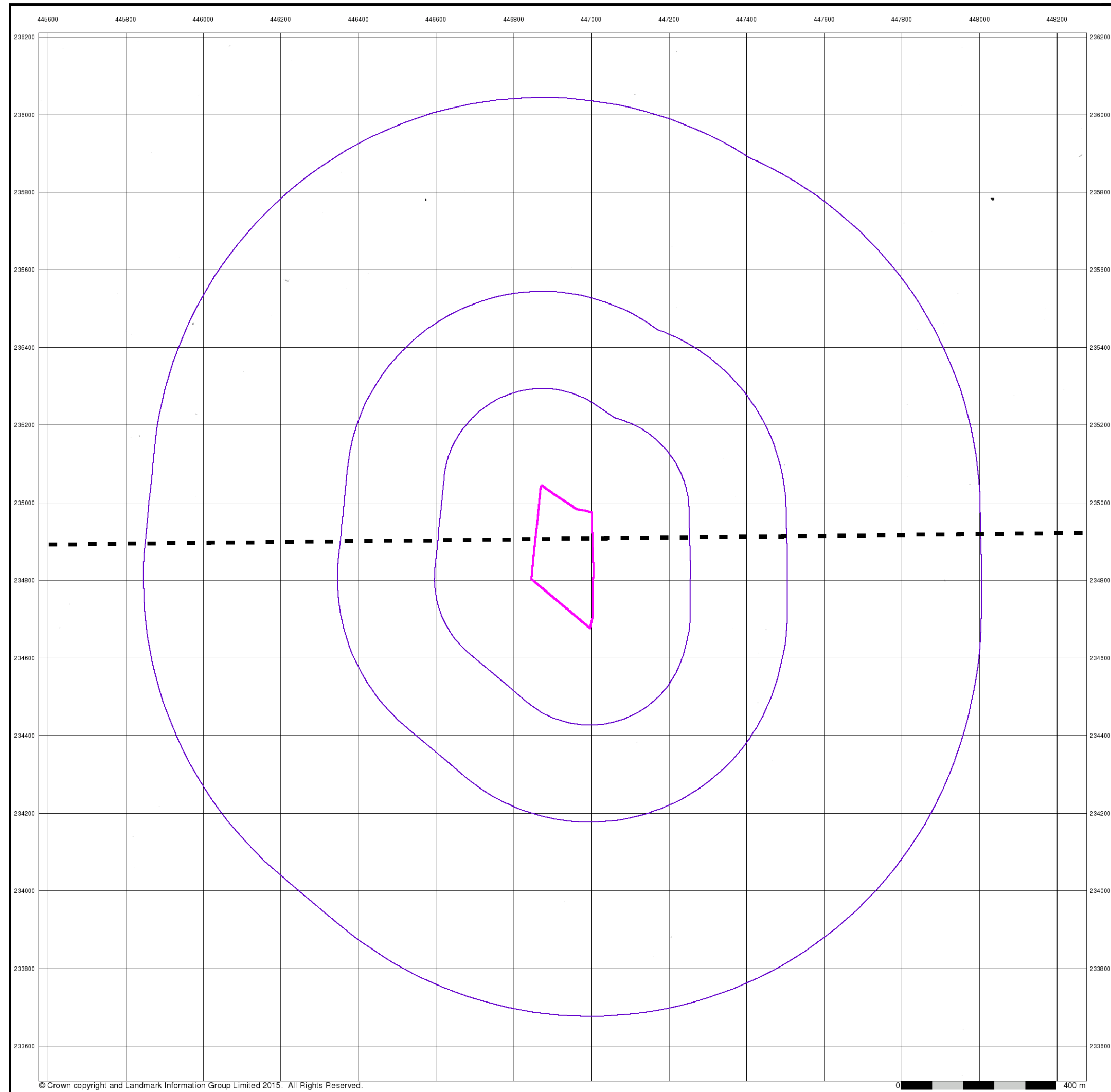
Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446940, 234860
Slice: A
Site Area (Ha): 4.02
Search Buffer (m): 1000

Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF

Landmark
INFORMATION GROUP

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



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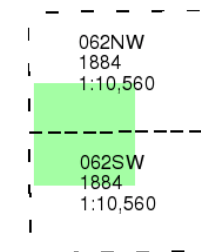
Northamptonshire

Published 1884

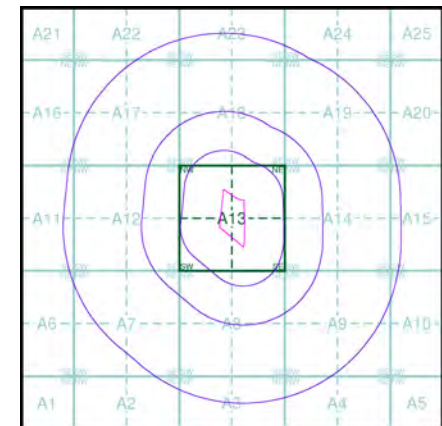
Source map scale - 1:10,560

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)



Historical Map - Slice A

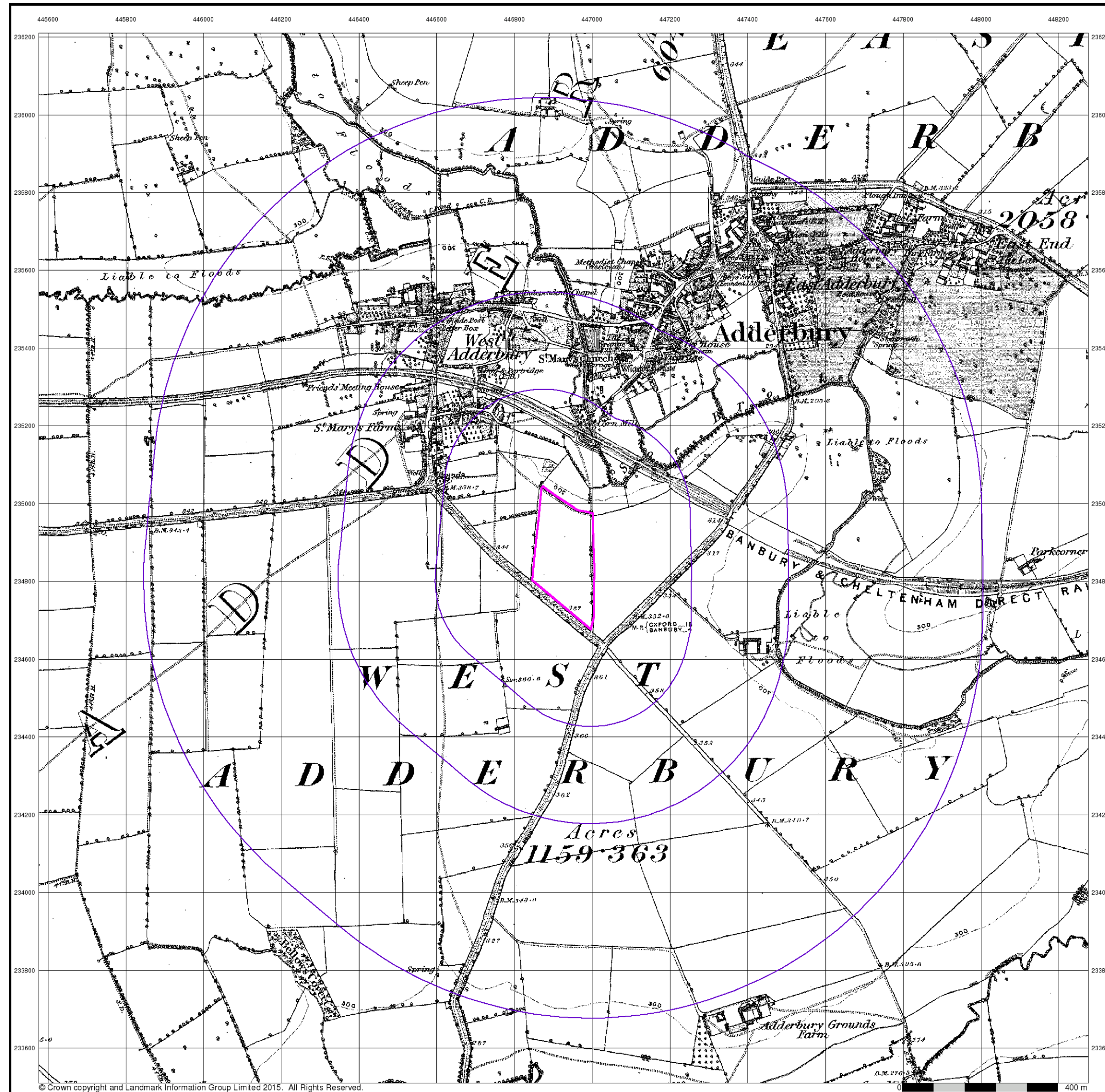


Order Details

Order Number: 129201624_1_1
Customer Ref: 17HSL004
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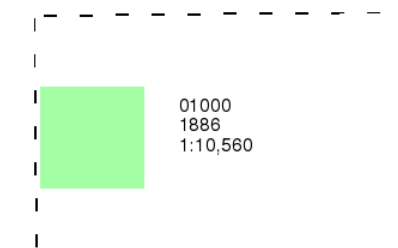
Oxfordshire

Published 1886

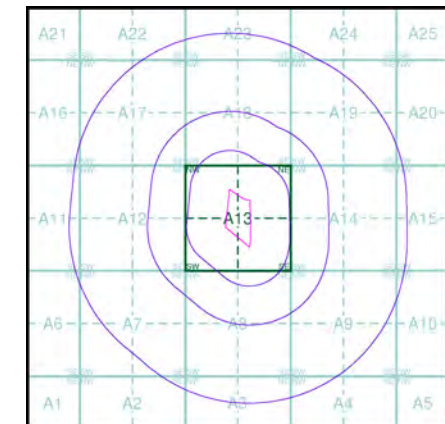
Source map scale - 1:10,560

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)



Historical Map - Slice A

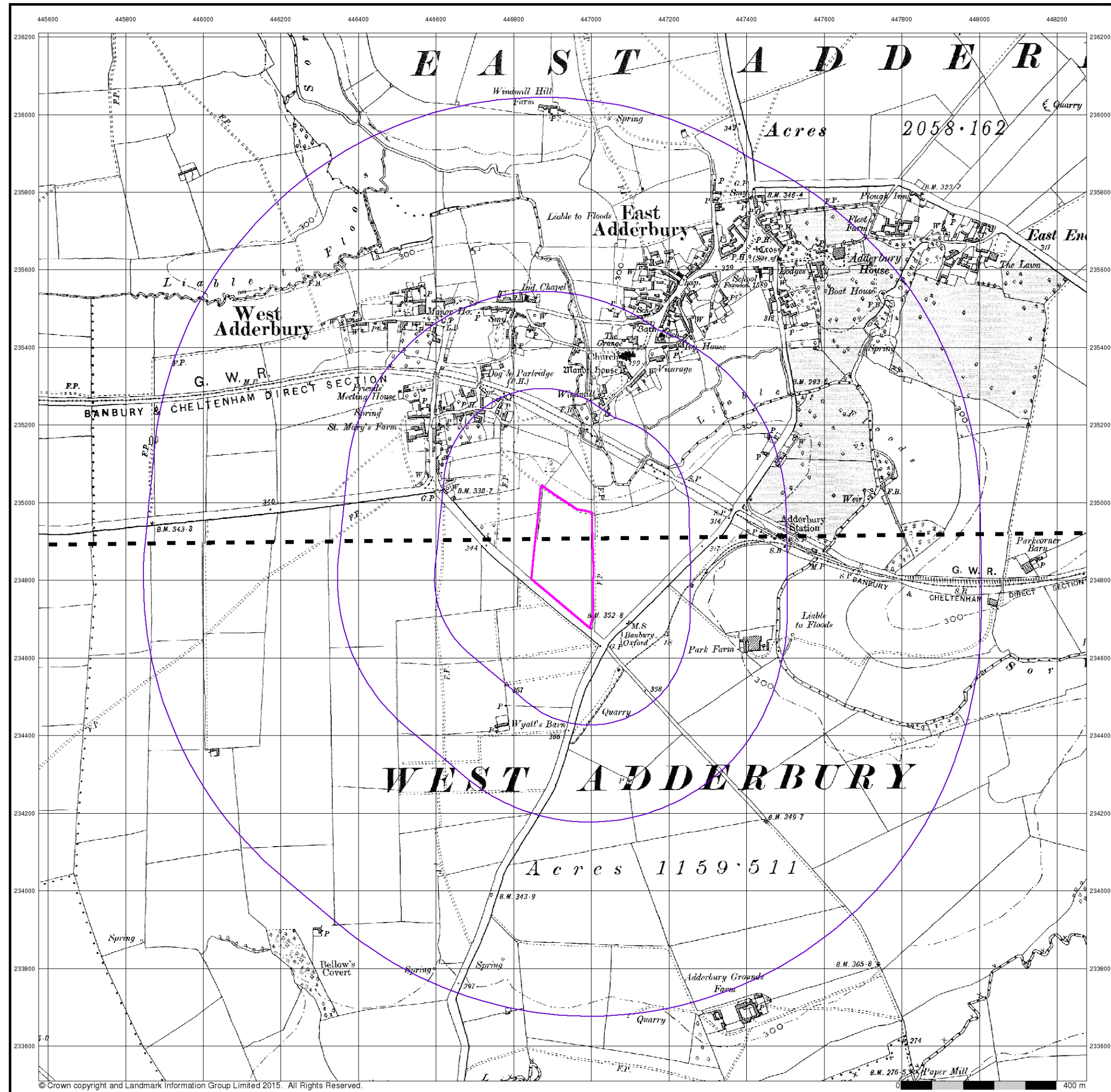


Order Details

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Site Area (Ha): 4.02
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Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF



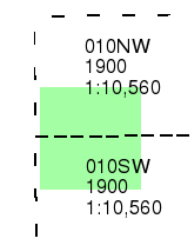
Oxfordshire

Published 1900

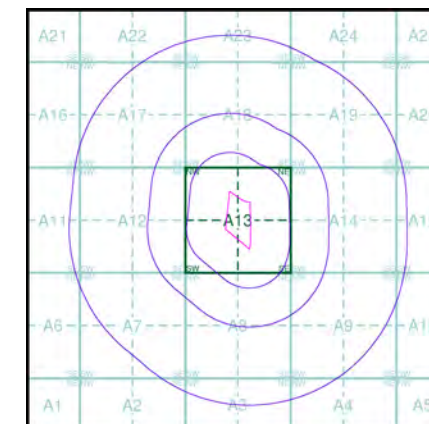
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps.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

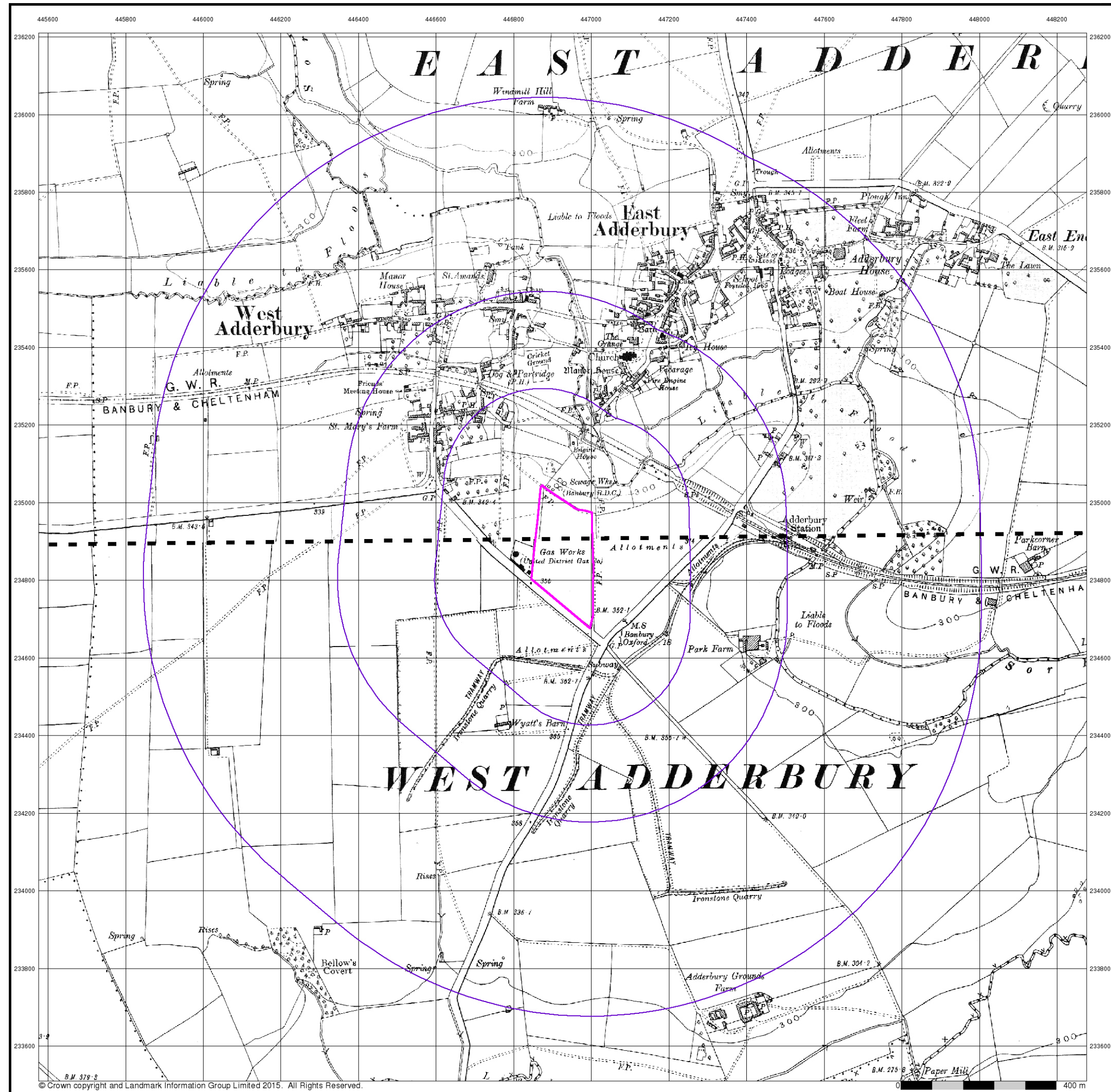


Order Details

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Site Details

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Northamptonshire

Published 1923

Source map scale - 1:10,560

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Map Name(s) and Date(s)

| | |
|----------|------|
| 062NW | 1923 |
| 1:10,560 | |
| 062SW | 1923 |
| 1:10,560 | |

Historical Map - Slice A

Order Details

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|--------------------------|----------------|
| Order Number: | 129201624_1_1 |
| Customer Ref: | 17HSL004 |
| National Grid Reference: | 446940, 234860 |
| Slice: | A |
| Site Area (Ha): | 4.02 |
| Search Buffer (m): | 1000 |

Site Details

Land off Berry Hill Road, Adderbury, BANBURY, OX17 3HF

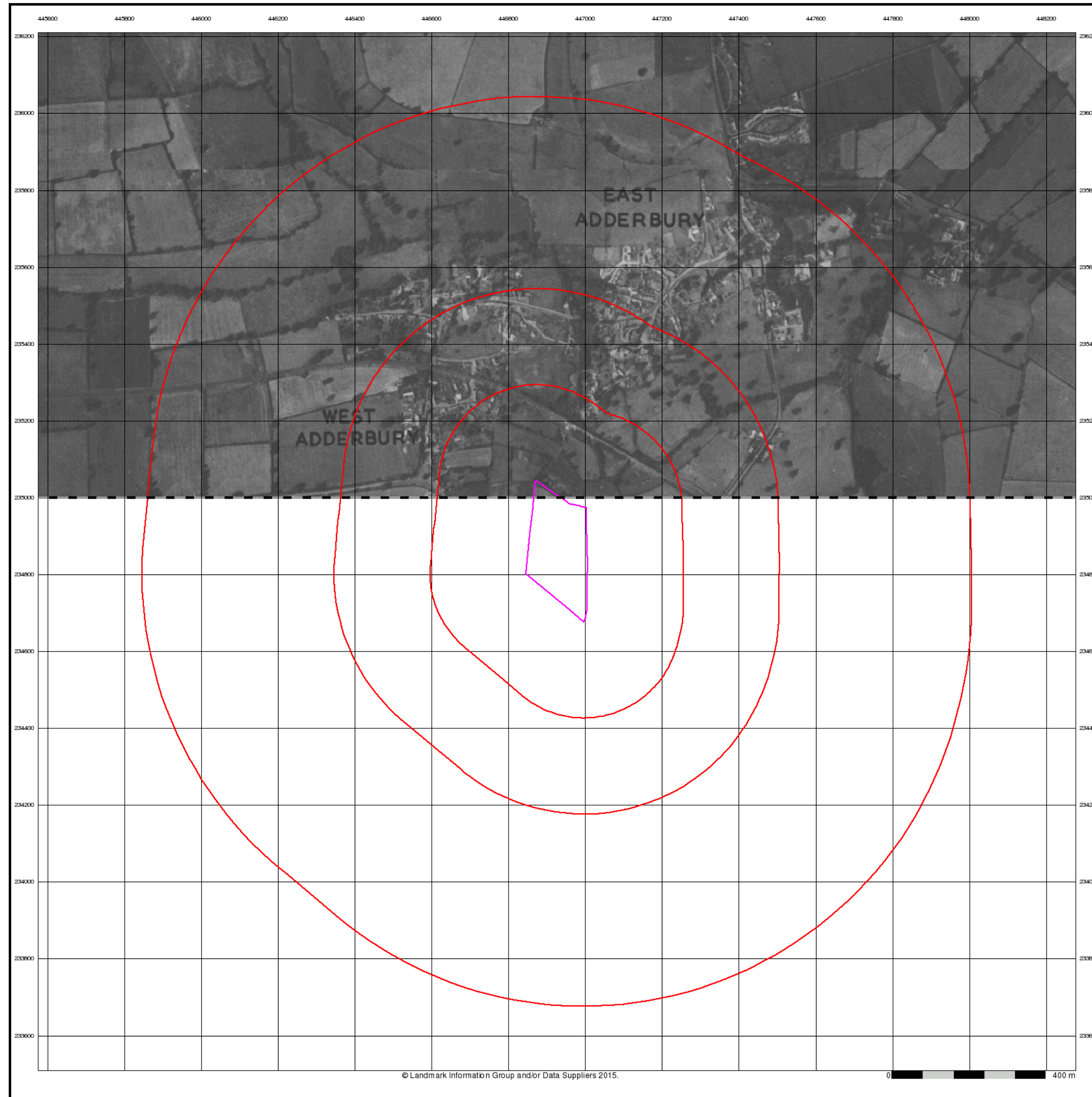
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A Landmark Information Group Service v50.0 20-Jun-2017 Page 5 of 13



Historical Aerial Photography

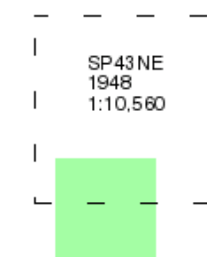
Published 1948

Source map scale - 1:10,560

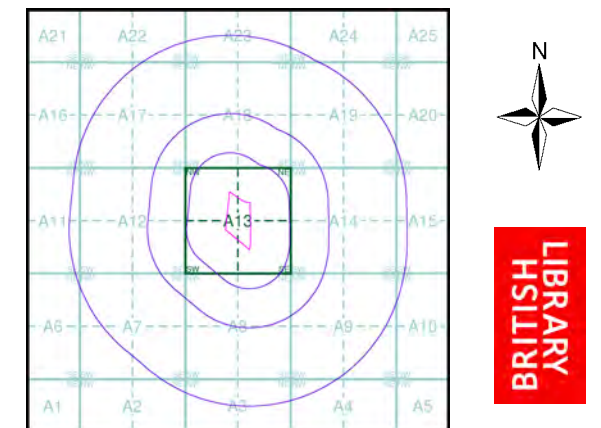
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the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



Historical Aerial Photography - Slice A

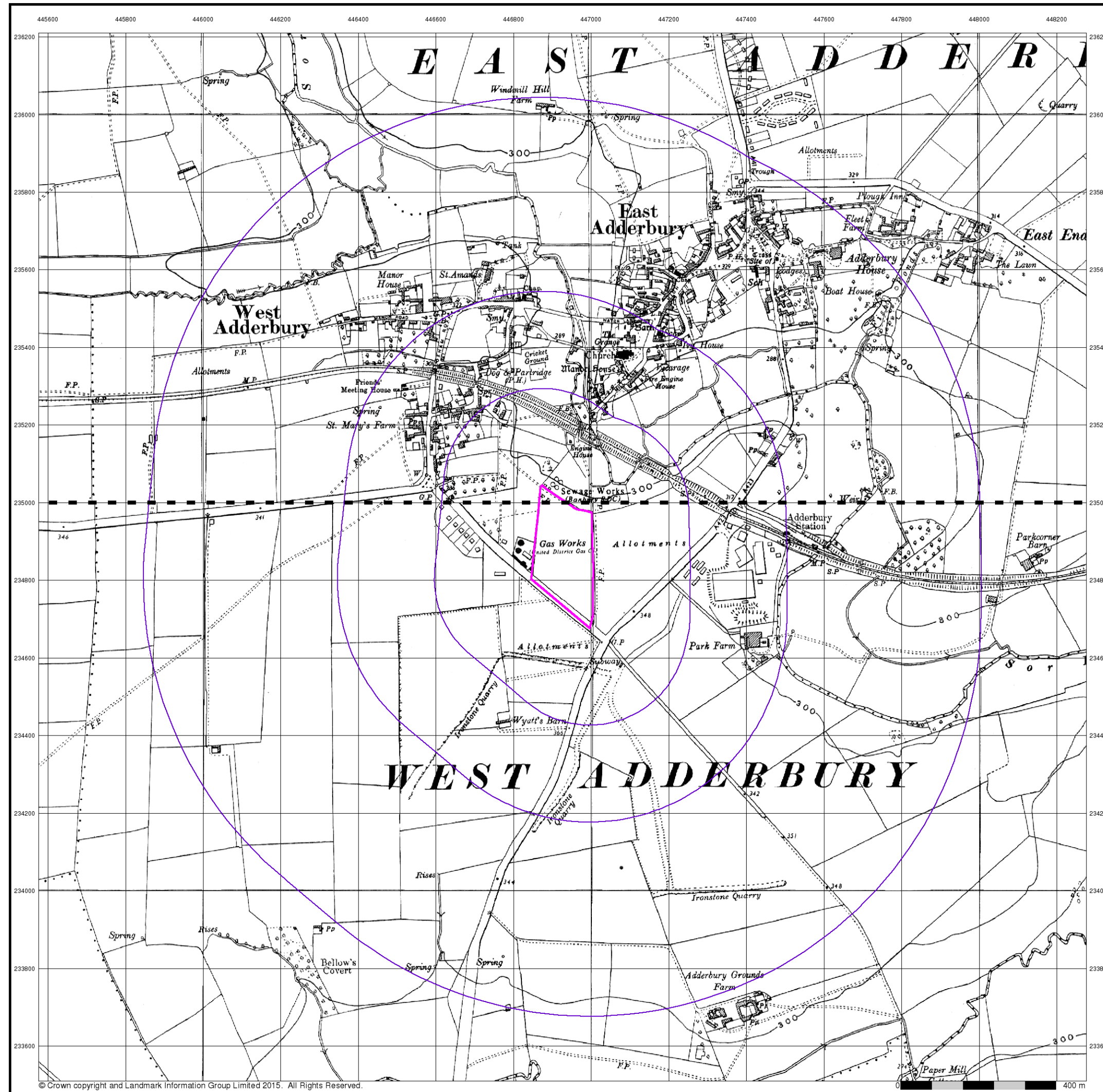


Order Details

Order Number: 129201624_1_1
Customer Ref: 17HSL004
National Grid Reference: 446940, 234860
Slice: A
Site Area (Ha): 4.02
Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1955

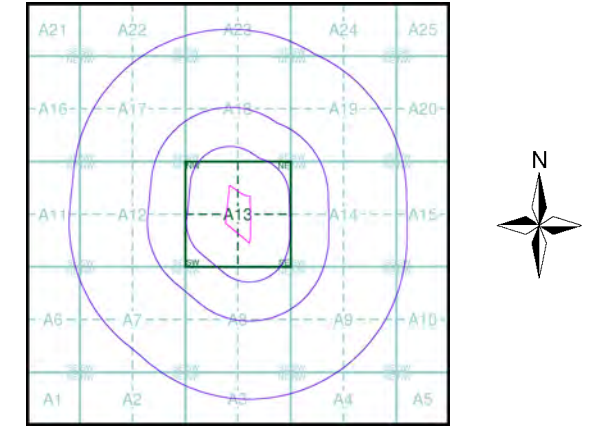
Source map scale - 1:10,000

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)

| | |
|----------|------|
| SP43NE | 1955 |
| 1:10,560 | |
| SP43SE | 1955 |
| 1:10,560 | |

Historical Map - Slice A



Order Details

| | |
|--------------------------|----------------|
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