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# Phase 1 Environmental Report

## Tollerton Park, Tollerton Lane, Nottingham NG12 4GD

October 2017

COUNTRYWIDE
PARK HOMES

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# Preface

| | |
|---|---|
| **Property Address:** | Tollerton Park, Tollerton Lane, Nottingham NG12 4GD |
| **NGR:** | E: 461400 N: 336490 |
| **Property Use:** | Holiday Park |
| **Site Area:** | 1.75 Hectares (4.32 Acres) |
| **Tenure:** | Freehold |
| **Date of Inspection:** | 27 September 2017 |
| **Inspection Conditions:** | Overcast / Dry |
| **Access Restrictions:** | All external areas of the site were inspected. |
| **Lead Surveyor:** | Helen Bayliss<br>DD: 0121 609 8872 Email: helen.bayliss@gva.co.uk |
| **Instruction Number:** | 01B714559 |

**Report Control:**

| **Status:** | | **Date:** |
|---|---|---|
| Version 1.0 Final | | October 2017 |
| | | |
| Prepared by: |  | Helen Bayliss BSc CSci MIEnvSc<br>Principal Due Diligence Consultant |
| Authorised by: |  | Gareth Condy BSc MSc PIEMA<br>Director |
| **For and on behalf of GVA Grimley Limited** | | |
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# 1. Scope of Instruction and Brief

## Objectives

1.1 Instructions were received from Countrywide Park Homes Ltd (the Client) to undertake a Phase 1 Environmental Report for the subject property. We understand that the Client intends to redevelop parts of the existing site with 9no. mobile homes for residential use. Our report is required to assist with the discharge of planning condition 4 of planning application 16/02400/FUL granted on 18 April 2017 by Rushcliffe Borough Council.

1.2 A copy of development proposal is presented in **Appendix I**.

1.3 Therefore, the primary objectives of our report are to identify those environmental issues which have the potential to affect value, site use or may lead to regulatory intervention and to provide comment on the suitability of the site from an environmental perspective.

## Background Data Sources

1.4 The findings of this report are based upon information provided to us and database information obtained from regulatory and statutory bodies (the Environment Agency, Local Authority, etc) as contained within the Landmark Envirocheck Report (Ref. 139430533_1_1). We have also undertaken enquiries with the Park Manager and the Client.

1.5 The findings and opinions conveyed in this report are based on information obtained from a variety of sources as detailed in the report and which GVA assumes to be reliable, but has not been independently confirmed. Therefore, GVA cannot and does not guarantee the authenticity or reliability of third party information it has relied upon.

1.6 All Ordnance Survey Mapping contained within this report is © Crown Copyright. All rights reserved, licence number 100000795.

## Report Preparation

1.7 This report is based on and prepared in general accordance with current best practice guidance documents concerning the assessment of potentially contaminated land including; British Standard (BS) 10175:2011: Investigation of Potentially Contaminated Sites, Environment Agency (2004): Model Procedures for the Management of Contaminated Land (CLR 11), DEFRA (2012): Environmental Protection Act 1990: Part 2A, Contaminated Land Statutory Guidance, the National Planning Policy Framework and the Royal Institution of Chartered Surveyors (RICS) Contamination, the Environment and Sustainability (GN13/2010).

1.8 This report has also been prepared in accordance with Rushcliffe Borough Council's A Guide to Developing Land within Nottinghamshire, produced by the Nottinghamshire Land Quality Group in 2013. In addition, we have completed enquiries the Environmental Health Officer at Rushcliffe Borough Council and their response is discussed further in Section 11, with a copy provided in **Appendix III**.

# 2. Site Location

| Item | Description | |
|---|---|---|
| **Site Location** | The property is situated on the outskirts of Nottingham and is accessed via Tollerton Lane via the A52 Gamston Lings Bar Road. Nottingham City Centre is located approximately 8.5km northwest of the site.<br>Site location and layout plans are provided below. | |
| **Surrounding Land Uses** | North | Agricultural land with the Grantham Canal and A52 Radcliffe Road beyond |
| | East | Agricultural land and Nottingham City Airport |
| | South | Open land associated with Nottingham City Airport with Spire Nottingham Hospital and agricultural land beyond |
| | West | Agricultural land with Tollerton Land A52 Gamston Lings Bar Road and residential properties beyond |

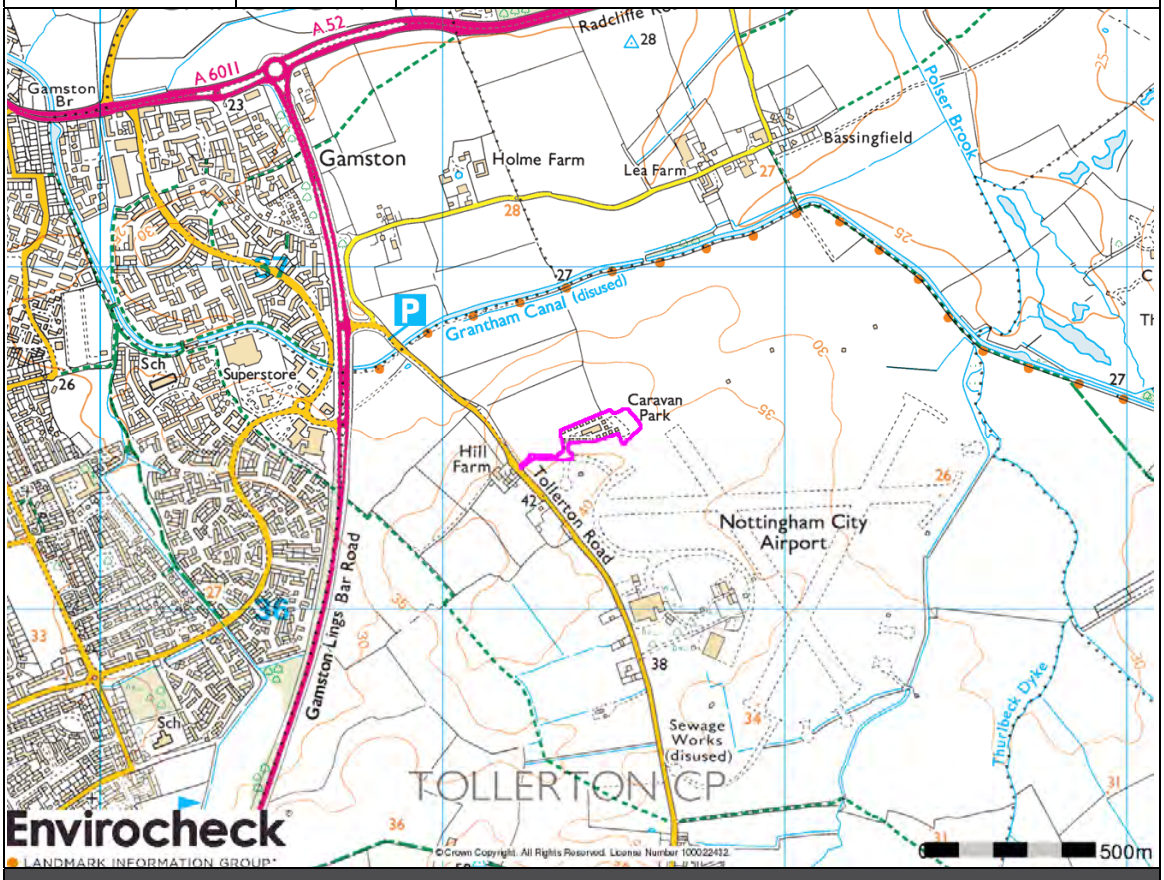



**Figure 1:** Site Location Plan (boundaries shown are indicative only)

# 3. Site Description

3.1 The following site layout plan and table provides a summary of the site's layout, usage and condition.

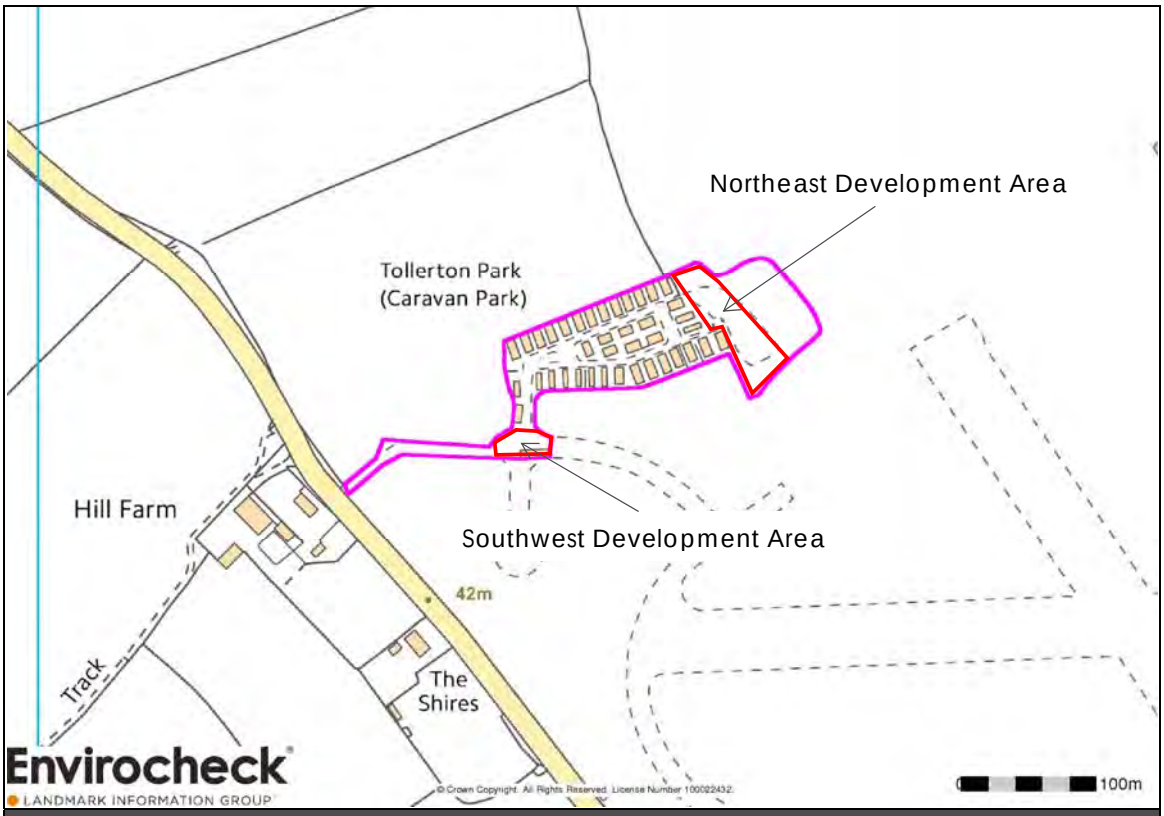



**Figure 2:** Site Layout Plan (boundaries shown are indicative only)

| Item | Description |
|---|---|
| **General Description** | Tollerton Park is occupied by residential park homes with proposals for expansion in the northeast and southwest of the site, as identified by the red lines on Figure 2 above. It is proposed under planning application reference 16/02400/FUL that 8no. mobile homes will be sited in the northeast with 1no. mobile home in the southwest. The boundaries of the park are marked by 1m high post and rail fencing with trees and hedgerows along sections of the boundary line.<br><br><u>Northeast Development Area</u><br><br>The larger development area in the northeast has been cleared and stripped back to expose Made Ground broadly described as red brown (locally brown black) sandy clay (reworked natural materials) containing a matrix of concrete, brick, quartz and fragments of tarmacadam. Some fine roots and rootlets were observed. |

| Item | Description |
|---|---|
| **General Description** | No visual or olfactory signs of contamination were noted. Remnant brick foundations had either been excavated and stockpiled at the surface or were exposed at the surface ready for excavation. Made Ground is estimated to be less than 0.5m thick across the surface of the site.<br><br>Localised excavations exposed natural ground at the surface comprising of a red brown sandy clay (weathered mudstone) with yellow orange cream angular cobbles of sandstone. These shallow materials appeared to be of lower permeability and were holding surface water.<br><br>Stockpiles of topsoil were temporarily stored to the east of the proposed development area, which were noted to comprise of brown black silty clayey sandy gravelly topsoil with fine and medium sized rootlets. Sand is of fine and medium grained quartz and gravel was noted to comprise angular and subangular quartz and sandstone with some brick and concrete fragments. Occasional cobbles of sandstone and brick were also observed.<br><br>The remains of a tarmacadam surface is present along the route of the proposed access road to the rear of existing mobile homes 20 and 21 together with some brick and concrete rubble.<br><br><u>Southwest Development Area</u><br><br>This smaller development area is predominantly surfaced with tarmacadam hardstandings. The former building appears to have been removed to floor level with the concrete slab still in situ along the southern boundary. A stockpile of red roof tiles are present in the east of the area which would appear to have been removed from the former building. This area is currently in use as visitor car parking. |
| **Site Services** | No services were noted within the proposed development areas, however, Tollerton Park is served with power, drainage and communication infrastructure.<br><br>No formal surface water drainage was noted across the site with runoff from the access roads and roofs noted to soak to ground through the adjacent grassed areas.<br><br>Foul waters from the existing mobile homes were noted to flow towards a chamber situated between homes 10 and 12. The chamber is understood from the Park Manager to hold 5,000 gallons. This is connected to the main public sewer in the road. Due to the topography of the site, the sewage from the site is pumped. At the time of our site inspection the pumps had failed and sewage was being tankered away twice a week until the pumps could be replaced. |
| **Underground/ Above Ground Tanks** | From our site inspection, there are no above or below ground fuel tanks present on the site. |
| **Chemical & Materials Storage** | From our site inspection, there are no significant quantities of chemicals used or stored on site. |
| **Waste Management Practices** | The site strip undertaken across the northeast development area was noted to have segregated topsoil materials, vegetation and brick and concrete rubble. No other waste streams were noted. |

| Item | Description |
|---|---|
| **Environmental Regulatory Controls** | From the activities observed on site, we do not believe there is a requirement for the occupiers of the property to hold an exemption, permit or licence under the Environmental Permitting (England and Wales) Regulations 2010, the Water Resources (Abstraction and Impounding) Regulations 2006 or the Water Resources Act 1991. |
| **Non-Native Invasive Plants** | Non-native invasive plants such as Japanese Knotweed, Giant Hogweed and Himalayan Balsam were not suspected to be present on site. |
| **Environmental Observations** | No significant evidence of ground contamination or hazardous processes were noted. |

3.2 A selection of site photographs taken on 27 September 2017 is presented below.



**Photo 1:** Main entrance to Tollerton Park



**Photo 2:** Access road through Tollerton Park to northeast development area



**Photo 3:** Access to northeast development area



**Photo 4:** View looking northwest across northeast development area. Made Ground exposed at surface.



**Photo 5:** View looking south across northeast development area. Made Ground exposed at surface.



**Photo 6:** Natural materials exposed in south of site beneath Made Ground. Remnant brick foundations exposed at surface.



**Photo 7:** Remains of tarmacadam surface to rear of mobile home 20 & 21



**Photo 8:** Topsoil stockpiled to the east of the northeast development area



**Photo 9:** View looking southeast across southwest development area



**Photo 10:** View looking east across southwest development area



**Photo 11:** Manholes to foul sewer pumping chamber



**Photo 12:** Internal view of foul sewer pumping chamber

# 4. Asbestos Containing Materials

4.1 The Control of Asbestos Regulations 2012 came into effect in April 2012. These repeal earlier asbestos legislation, including; the Asbestos Regulations 2006, the Control of Asbestos at Work Regulations 2002, Asbestos Licensing Regulations 1983 and the Asbestos (Prohibition) Regulations 1992 (as amended).

4.2 Owners, occupiers, managers and/or those who have responsibilities for premises have a legal duty to either manage the risk of asbestos or a duty to co-operate with whoever manages that risk. The responsible party has to identify the existence of asbestos containing materials, record their location and condition, set out a plan to manage the risk from the material and take the necessary steps to put this plan into action.

4.3 An appropriately licensed asbestos contractor should remove asbestos material that is likely to be disturbed and cannot be easily protected. Reviews of this plan will have to be undertaken on an on-going basis. Details as to the location and condition of the materials must be provided to anyone who is liable to work on or disturb it.

## Asbestos Survey

4.4 Observations during our site walkover did not identify any materials presumed to contain asbestos at either of the proposed development areas. Both areas of the site have been previously developed with hardstandings associated with Nottingham Airport and there is limited potential for asbestos is soils, although this cannot be completely discounted at this stage.

# 5. Historical Development

5.1 In order to ascertain the historical land uses on site, GVA has purchased historical mapping from the Landmark Information Group, at scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560. We have also reviewed the site's planning history where information for the site is available.

| Date | Description |
|---|---|
| **1883 to 1938** | The site and the wider surrounding area is shown in agricultural use. A road concurrent with Tollerton Lane is located to the west of the site. |
| **1952 to 1967** | The main Tollerton Park site is shown to be occupied by an 'Aircraft Maintenance Works' with two 'Tanks' annotated. The two identified development areas, however, are shown to be part of hardstandings and taxiways associated with an off site airfield.<br>Off site, Nottingham Aerodrome (Tollerton) is located to the southeast of the site with the remaining areas continuing to be predominantly agricultural land. |
| **1976 to 1993** | The former 'Aircraft Maintenance Works' is no longer shown, however, one of the 'Tanks' remains within the main boundary of the existing Tollerton Park development. The development areas to the northeast and southwest continue to be shown as areas of hardstanding and a taxiway. The aerodrome is now annotated as Nottingham Airport. |
| **1998 to present** | Tollerton Park has been developed with the main site area occupied by mobile homes. An aerial photograph dated 1999 shows the northeast development area to be covered in tarmacadam hardstandings and in use as caravan storage. The southwest development area also appears to be covered with tarmacadam hardstandings and a building is located along the southern boundary. This area appears to be in use as small car park. No further changes are noted on site.<br>Off site, a large area residential housing has been constructed to the west of the site and the A52 Gamston Lings Bar Road has been constructed. |

5.2 Selected extracts of the historical maps are provided in **Appendix II**.

## Potential for Historical Contamination

5.3 In summary, the proposed development areas have formed part of the hardstandings and taxiways associated with Nottingham Airport and the Aircraft Maintenance Works. It is understood that the Aircraft Maintenance Works was used for the dismantling of aircraft following World War 2. Overall, there is potential for Made Ground to be present, which may contain some contamination (oil and fuel hydrocarbons, metals, luminescent paint (radium)).

# 6. Geological Setting

6.1 From a review of the British Geological Survey (BGS) Solid & Drift Sheet 126, Nottingham at a scale of 1:50,000 and the online GeoIndex, the following geological succession has been identified at the site.

| Strata | | Description | Approx. Thickness |
|---|---|---|---|
| **Mercia Mudstone Group** | **Arden Sandstone Formation** | Interbedded deposits of mudstone, siltstone and sandstone consisting of grey, green and purple mudstones, paler grey green to buff coloured siltstones & fine to medium grained varicoloured green, brown, buff and mauve sandstones. | Less than10m |
| | **Edwalton Member of the Sidmouth Mudstone Formation** | Red-brown and greenish grey Mudstone and siltstone with beds of siltstone and very fine-grained sandstone common in the lower half | 35m to 45m |

6.2 The BGS do not map any artificial or superficial deposits across the site. However, given the previous development at the site, some Made Ground deposits are anticipated to be present.

## Structural Geology

6.3 From a review of the BGS map, two parallel geological faults are conjectured along the western boundary with Tollerton Lane and through the centre of the main Tollerton Park site. The geological faults trend in a northwest to southeast orientation with the direction of downthrow and displacement unknown.

## Ground Stability Hazards

6.4 The Envirocheck Report indicated that the underlying geological conditions have been classified as follows:

| Potential Geological Hazard | Risk Rating |
|---|---|
| Collapsible Ground Stability | Very Low |
| Compressible Ground Stability | No Hazard |
| Ground Dissolution Stability | No Hazard |
| Landslide Ground Stability | Very Low |
| Running Sand Ground Stability | No Hazard |
| Shrinking or Swelling Clay Ground Stability | No Hazard |

6.5 The Envirocheck Report does not identify any natural cavities within 1km of the property.

## Mineral Extraction

6.6 According to the British Geological Survey, no evidence of surface mineral extraction or man-made cavities have been identified on the property or within 250m.

## Mining

6.7 The property is located in an area that may be affected by past, present and/or future coal mining activity.

6.8 We have obtained a Coal Authority Report (Ref. 51001617880001) dated 14 September 2017. The Report indicates that the property is in a surface area that could be affected by underground mining in 1 seam of coal at 430m to 440m depth, and last worked in 1990. Any movement in the ground due to coal mining activity should have stopped.

6.9 Reserves of coal exist in the local area which could be worked at some time in the future. The property is in an area where a notice to withdraw support was given in 1958 and 1976. No notice to cancel the entitlement to withdraw support has been given under Section 41 of the Coal Industry Act 1994. These notices were granted under Paragraph 6 of the Second Schedule of the Coal Act 1938 and were published to notify residents in an area that the coal beneath their properties was to be worked (effectively withdrawing the support this gave to the land). Whilst these notices are still active, modern legislation has effectively superseded them and any future mine workings would require a Coal Authority licence, planning permission and require access rights across land to be granted.

6.10 There are no known coal mine entries within, or within 20m of, the boundary of the property.

6.11 Finally, the Coal Authority has not received a damage notice or claim for the subject property, or any property within 50m, since 31 October 1994.

6.12 Coalfields are divided into high and low risk areas by the Coal Authority. The site is not located in a Development High Risk Area for coal mining and as such a Coal Mining Risk Assessment is not required as part of the planning process.

6.13 A copy of the Coal Authority Mining Report is provided in **Appendix III**.

## Radon

6.14 The property is in an intermediate probability radon area as between 1% and 3% of homes are above the Residential Action Level of 200Bq/$m^3$. However, radon protective measures are not necessary in the construction of new dwellings or extensions.

## Previous Site Investigations

6.15 No previous ground investigation reports are available for the site.

## British Geological Survey Online Borehole Records

6.16 We have undertaken a search of the British Geological Survey online database for historical borehole records. There are no boreholes located on site, however, there are 3no. boreholes located from 620m south of the site at Chestnut Farm, which are situated within the same geology as the subject site.

6.17 The boreholes (BGS Reference: SK63NW320, SK63NW319 and SK63NW318) were drilled in 1962 to prove the location of a geological fault. The boreholes varied in depth between 15m and 86m below ground level (bgl) and encountered a sequence of siltstone, mudstone and sandstone, which are considered to represent the Mercia Mudstone Group. No further information is provided.

6.18 Selected borehole records are provided in **Appendix III**.

# 7. Hydrogeology

## Aquifer Designation

7.1 According to the Envirocheck Report, the following aquifer designations are assigned to the geological units beneath the site.

| Geological Unit | Aquifer Designation |
|---|---|
| **Arden Sandstone Formation** | Secondary A Aquifer with permeable layers capable of supporting water supplies and base flow to rivers on a local scale. |
| **Edwalton Member of the Sidmouth Mudstone Formation** | Secondary B Aquifer with predominantly lower permeability layers which may store limited amounts of groundwater. |

7.2 The Environment Agency's groundwater vulnerability map for the local area (Sheet 23) indicates the aquifer to be moderately permeable with soils of intermediate leaching potential. The overlying soils may transmit any contamination present.

## Groundwater Source Protection Zone

7.3 The site is not located within a Groundwater Source Protection Zone.

## Groundwater Abstractions

7.4 The Envirocheck Report does not identify any groundwater abstractions authorised by the Environment Agency on site or within 1km of the property.

# 8. Hydrology and Flood Risk

## Hydrology

8.1 The site falls within the catchment of the Polser Brook located approximately 1.27km northeast of the site. The site slopes down to the northeast towards a tributary of the Polser Brook and the Grantham Canal, which run parallel with each other approximately 400m north of the site.

## Culverted Watercourses

8.2 We are unaware of any culverted watercourses being present at the property. Should further clarification on this point be required, it would be necessary to undertake a review of the site's drainage plans, which may lead to an intrusive drainage survey being required.

## Surface Water Abstractions

8.3 The Envirocheck Report does not identify any surface water abstractions authorised by the Environment Agency on site or within 1km of the property.

## Flood Risk

8.4 The Environment Agency's Flood Map for Planning and Flood Risk Maps indicate the following information for the site:

| Flood Zone | Fluvial and Coastal Flood Risk Rating |
|---|---|
| **Flood Zone 1** | The Environment Agency risk rating at this location means that the site is at 'very low' risk of flooding with an annual probability of river or sea flooding of less than 1 in 1,000. This takes into account the effect of any flood defences that may be in this area. However, whilst flood defences reduce the risk they do not completely stop the chance of flooding and they can overtop or fail. |

8.5 The Environment Agency Surface Water Flood Maps indicate that the majority of the site is at 'very low' risk of surface water flooding, with an annual chance of flooding of less than 1 in 1,000.

8.6 Enquiries made on site indicated that during very heavy rainfall some surface water flooding can occur along the internal access roads as rainwater cannot infiltrate to ground quickly enough.

8.7 It is important to note that surface water flooding can be difficult to predict, much more so than river or sea flooding, as it is hard to forecast exactly where or how much rain will fall in any storm.

8.8 From a review of the British Geological Survey 'Groundwater Flooding Susceptibility Map' and based on the anticipated geological conditions of the site, there is limited potential for groundwater flooding to occur.

## Flood Risk Limitations

8.9 It is important to note that the above assessment is based on the available flood risk information for Main Rivers and flooding can also occur from smaller ordinary watercourses that are not mapped by the regulatory bodies.

8.10 Flooding can also occur through other mechanisms such as insufficient drainage capacity and breach of water storage infrastructure, such as reservoirs. For the avoidance of doubt, these forms of flooding have not been specifically assessed as they fall outside of the scope of this Environmental Report.

# 9. Regulatory Database Entries

9.1 We have reviewed the Envirocheck Report to assess if there are any relevant entries that may impact the property. These entries are summarised below:

## Discharge Consents

9.2 The Envirocheck Report does not identify any licensed surface water discharge consents authorised by the Environment Agency on site or within 250m of the property.

## Environmental Permits (EA Installations, LAIPPC, LAPPC)

9.3 The Envirocheck Report does not identify any of the above environmental permits on site or within 250m of the property.

## Pollution Incidents

9.4 From a review of Environment Agency substantiated pollution incidents contained within the Envirocheck Report, there are no incidents recorded on site or in the immediate vicinity of the site that are likely to have any significant impact.

## Waste Management Sites

9.5 The Envirocheck Report does not identify any historical or operational landfills on site, or within 250m of the property.

9.6 Furthermore, there are no operational waste treatment or transfer facilities located within a 250m radius of the site.

## Hazardous Substances (COMAH etc)

9.7 Industrial operations that involve the storage and use of significant quantities of hazardous substances are regulated by the Local Authority, the Environment Agency and Health and Safety Executive. The Envirocheck Report does not identify any authorisations/consents on site or within 1km of the property.

## Sensitive Land Uses

9.8 The Envirocheck Report indicates that the site is located within an Area of Adopted Green Belt which was designated by Rushcliffe Borough Council in December 2006.

# 10. Environmental Sensitivity

10.1 The environmental sensitivity of the site has been assessed using the information in the above sections and is summarised in the following table.

| Attribute | Environmental Sensitivity | | |
|---|---|---|---|
| | Low | Medium | High |
| Aquifer designation | ☐ | ☒ | ☐ |
| Permeability of aquifer | ☐ | ☒ | ☐ |
| Groundwater abstractions | ☒ | ☐ | ☐ |
| Groundwater Source Protection Zones | ☒ | ☐ | ☐ |
| Sensitivity of receiving waters | ☐ | ☒ | ☐ |
| Surface water abstractions | ☒ | ☐ | ☐ |
| Proximity to human occupation | ☐ | ☐ | ☒ |
| Presence of Site of Special Scientific Interest | ☒ | ☐ | ☐ |
| Presence of Areas of Outstanding Natural Beauty | ☒ | ☐ | ☐ |
| Presence of Local and National Nature Reserves | ☒ | ☐ | ☐ |
| Presence of RAMSAR sites | ☒ | ☐ | ☐ |
| Presence of Special Protection Areas | ☒ | ☐ | ☐ |

10.2 On consideration of the hydrology, geology, hydrogeology and ecological receptors, the site and its surrounding area is considered to be of 'medium' environmental sensitivity. This means that there is potential for contaminants to leach and migrate due to the permeability of the soils and the local environment may be sensitive to the effects of contaminants in the soil and groundwater should they be present.

# 11. Regulatory Enquiries

## Rushcliffe Borough Council

11.1 A review of the site's planning history on the Rushcliffe Borough Council website indicates the following planning applications to have been made at the site:

- 94/01120/CLU – Use of land for the storage of caravans;
- 96/00205/COU – Use of land for storage of caravans and parking of cars with approved landscaping scheme; and
- 16/02400/FUL – Siting of 9 mobile home (current application).

11.2 No contaminated land planning conditions were applied to the applications relating to the storage of caravans. For the current application, the following condition applies and this repot has been prepared to assist with its discharge.

- Prior to the commencement of any on site works, a Contaminated Land Report shall be submitted to and approved in writing by the Borough Council. In those cases where the detailed investigation report confirms that contamination exists, a remediation report and validation statement will be required. All of these respective elements of the report shall be submitted to and approved in writing by the Borough Council, prior to development commencing, and the development shall be carried out in accordance with the approved details.

11.3 We have made regulatory enquiries to Mr Nigel March, Environmental Health Officer at Rushcliffe Borough Council regarding environmental issues that may impact the proposed developments at the property.

11.4 In summary, the Council has confirmed the following details:

- The site in question has historically been used for dismantling of World War II bombers and may have been contaminated by fuels and oils as well as minute quantities of radium used on luminised dials in the cockpits. It is therefore reasonable to assume that there is a possible risk from contamination present at the site;
- The site is not designated as Contaminated Land but, due to the former use, it is on the Council's prioritised land and classified as low risk scoring 167 out of a total of 1,873 sites. The inspection of the 1,873 prioritised sites is ongoing with the sites of highest priority being undertaken first. This is an on-going process and it is not possible to predict how long it will

take; however, it is unlikely that the site will be investigated under Part 2A of the Environmental Protection Act 1990 in the near future;

- A planning application for the siting of 9 mobile homes on the site was received in October 2016 (Planning Ref: 16/02400/FUL). Our Service recommended a planning condition requiring the submission of a contaminated land report prior to the commencement of any site works. This application was granted on the 18th April 2017;
- There are no landfill, waste management sites or regulated premises (Pollution Prevention and Control Authorisations) at the property or within a 1km radius from the site;
- The Environmental Health team dealt with a complaint about water polluting the surface water drainage system on the site in March 2016 (Ref: 16/01006/DRAIUR). This incident was referred to Severn Trent Water for investigation as external flooding. From Council records, the source of the water was found to be from a fracture to a local water supply pipe. Repairs works were carried out to the water supply pipe and the Council has not had any further complaints regarding water pollution incidents affecting the site; and
- The Council has no records of private abstraction wells/water supplies on or within 250m of the site.

11.5 Where relevant, copies of the regulatory responses are provided in **Appendix III**.

# 12. Environmental Risk Assessment

12.1 In order to assess the risks associated with the presence of ground contamination, the linkages between the sources and potential receptors need to be established and evaluated. This is in accordance with Part 2A of the Environmental Protection Act (EPA) 1990, which provides a statutory definition of Contaminated Land.

12.2 To fall within this definition it is necessary that, as a result of the condition of the land, substances may be present in, on or under the land such that:

- Significant harm is being caused or there is a significant possibility of such harm being caused; or
- Significant pollution of controlled waters is being, or is likely to be, caused.

12.3 This regime does not take into account future uses which could need a specific grant of planning permission. To ensure a site is suitable for its new use and to prevent unacceptable risk from pollution, the implications of contamination for a new development are considered by the local planning authority.

## Risk Exposure

12.3 In consideration of the above regulatory regime and available information, the overall risk with respect to issues identified on the site has been assessed qualitatively as low, moderate or high. A risk exposure matrix for plausible pollutant linkages for future use is shown below:

| Potential Contamination | Pathways | Receptors | Risk Evaluation of Pollutant Linkage |
|---|---|---|---|
| **Historical contaminants** –<br><u>*On site -*</u><br>*Hardstandings and Taxiways associated with Aircraft Maintenance Works and Nottingham Airport (asbestos, oil and fuel hydrocarbons, metals, luminescent paint-radium)*<br><br><u>*Off site –*</u><br>*Aircraft maintenance Works (asbestos, oil and fuel hydrocarbons, metals, luminescent paint)*<br>*Tanks (aviation fuel, waste oil)*<br><br>**Current contaminants –**<br><u>*On site -*</u><br>*Foul sewage storage chamber*<br><br><u>*Off site –*</u><br>*Nottingham Airport (aviation fuel, waste oils, paints, antifreeze)* | Direct contact / ingestion of contaminated soil | Site Workers / Site Visitors / Residents | **Low -** The site was in greenfield use until circa 1950s when an Aircraft Maintenance Works is shown to have been present on the main site area, with the proposed development areas in use as hardstandings and taxiways. The main site was redeveloped as a caravan park in the 1970s and the development areas have been used for caravan storage and car parking. From the site clearance works Made Ground is estimated to be less than 0.5m thick across the site comprising of reworked natural materials with some brick, concrete and tarmacadam gravel and cobbles. No visual or olfactory signs of contamination were observed. As a developed site, there will be no direct contact with Made Ground materials (use of clean topsoil layer) and exposure is considered low. |
| | | Construction Workers | **Low -** Construction workers are unlikely to be exposed to significant contamination in soil during any future ground works. Made Ground was observed to be derived from reworked natural materials with gravel and cobbles of brick, concrete and tarmacadam. Standard PPE will be required. |
| | Inhalation of ground gases / dust / fibres | Site Workers / Site Visitors / Residents | **Low –** No on site sources of ground gas have been identified due to limited thickness of Made Ground. Near surface low permeability clays (weathered mudstone) will limit migration from off site sources. Mobile homes are sited on concrete slab with a minimum void space of 500mm between the slab and base of the home, providing a significant ventilation void space. Exposure is considered low.<br>**Low -** No asbestos containing materials identified, however, the presence of asbestos in Made Ground cannot be completely discounted and observations during earthworks should be made and remedial works undertaken where identified. |
| | | Construction Workers | **Low -** Construction workers are unlikely to be exposed to ground gases during any future ground works due to the limited thickness of Made Ground.<br>**Low -** No asbestos containing materials identified, however, the presence of asbestos in Made Ground cannot be completely discounted and observations during earthworks should be made. Appropriate H&S precautions should be applied. |
| | Permeation of contamination through water supply pipes | Site Workers / Site Visitors / Residents | **Low** - Any new water supply pipes laid should take account of the encountered ground conditions. No significant sources of contamination have been identified but consultation with Severn Trent Water is recommended at an early stage. As the site is brownfield barrier pipe for drinking water supply pipes may be required. |
| | Direct contact with contaminated soils | Buildings and Services | **Low -** No significant sources of contamination have been identified that are likely to cause the deterioration of concrete. Concrete slabs for mobiles homes should be constructed on the surface of competent natural materials. |

| Potential Contamination | Pathways | Receptors | Risk Evaluation of Pollutant Linkage |
|---|---|---|---|
| | Plant uptake from soil | Landscaped areas | **Low -** No evidence of vegetation die back noted. Grassed landscaping proposed around mobile homes. Clean topsoil will be required in the landscaped areas. |
| | Ingestion of site grown fruit and vegetable | Site Workers / Site Visitors / Residents | **Low -** Future development proposals do not include areas for growing fruit and vegetables. |
| | Leaching to groundwater | Secondary A Aquifer | **Low -** No significant sources of contamination noted and near surface low permeability clays (weathered mudstone) will limit potential for any contamination to migrate vertically to more permeable sandstone layers within the bedrock. |
| | Migration in groundwater | Water Abstractions | **Low -** No groundwater or surface water abstractions have been identified locally to the site. |
| | Migration in groundwater to watercourse | Tributary of the Polser Brook and Grantham Canal<br>400m north | **Low -** Unlikely given absence of significant sources of contamination on development plots. Potential off site historic contamination sources (Tanks) were located down hydraulic gradient of the development plots and groundwater beneath the site is unlikely to be impacted. Distance to watercourse means that the tributary is unlikely to be impacted. Canal is also likely to be lined and so will not be in hydraulic continuity with groundwater. |
| | Surface water runoff | | **Low -** Surface water runoff may occur within the boundaries of Tollerton Park before soaking to ground. No significant current sources of contamination noted. |
| | Surface water runoff to adjacent land | Off-site property | **Low -** No significant current sources of contamination noted, therefore, runoff of contamination onto third party land is unlikely. |
| | Migration in groundwater to adjacent land | | **Low -** Proposed development areas (previously used as hardstandings and taxiways) are considered to have lower risk of contamination when compared to remainder of site where Aircraft Maintenance Works and storage tanks were located. The presence of low permeability clays (weathered mudstone) at the surface of the site will limit significant migration |

# 13. Conclusion and Recommendations

13.1 The GVA Environmental Services Team has completed a Phase 1 Environmental Report for the subject property to discharge planning condition 4of planning application 16/02400/FUL.

13.2 In conclusion, based on our assessment of historical map sources and background data, together with our site inspection, we consider that the site represents a **Low Environmental Risk** from an environmental perspective for the additional development of 9no. mobile homes.

13.3 Observations on site did not identify any visual or olfactory signs of contamination. Made Ground deposits across the surface of the site were estimated to be less than 0.5m thick and comprised of reworked natural materials with gravel and cobbles of brick, concrete and tarmacadam. Natural materials exposed at the surface were noted to comprise of a red brown sandy clay considered to represent the weathered mudstone strata of the Arden Sandstone Formation. These shallow materials appeared to be of lower permeability and were holding surface water.

13.4 No further ground investigation works are considered necessary to enable the safe development and use of the site from a ground contamination perspective. However, observations during earthworks should be made for any potential contamination or asbestos containing materials. Should contamination be positively identified, the planning department should be notified in the first instance and an investigation and remediation strategy developed and submitted for their approval.

13.5 It is recommended that the concrete slabs for the proposed mobile homes are constructed on competent natural strata. In the northwest development area, it may be possible to reuse the tarmacadam sub base remaining on site to form a suitable compacted sub base for the new roadway, depending on the volume of materials and required finished road levels.

13.6 The stockpiles of topsoil should be screened to remove large gravel fragments and cobbles of brick and concrete. Representative samples should be obtained from the topsoil stockpile and analysed for a broad suite of heavy metals, total petroleum hydrocarbons, polycyclic aromatic hydrocarbons, asbestos and pH. A risk assessment should then be completed to ensure that they are suitable to form areas of landscaping.

13.7 Early consultation with Severn Trent Water is recommended to determine the requirements for drinking water supply pipes laid as part of the proposed development. As the development is on brownfield land, barrier pipe may be required.

13.8 Definitions and Reservations are provided in **Appendix IV**.

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# Appendix I Development Proposal Plan

## EXTERNAL WORKS

**PATHS** gravel
New paths to be laid where indicated of 75 mm thick loose gravel with tamped finish on 150mm well compacted hardcore.

Stone Setts to markate front edge of parking bays as shown.
Setts to be laid flush with finished road level, laid in mortar bed to Local Autority Approval.

New Post And Rail Fencing constructed to a helght of 1800 mm in treated timber incorporated access points at minimum 15000 mm c/c along its length.

**LANDSCAPING WORKS**

Planting to follow Local Authority Design Guide with traditional species like Beech, Green fagus Sylvatica and Holly ( Ilex Aquifolium ).
Tree planting to respect the proportion of the site.
Acer Saccharinum ( Silver Maple ) or Silver Birch ( B. Pendula ) ensuring light canopies.

**EXCAVATIONS**
Formations below New Structures. All new formation levels below any new floors or external pavements to be free from topsoil, vegetable matter or other organic materlal and where applicable graded to support walls in ground level below suspended ground floors

**GENERALLY**
All excavations shall be carried out in accordance with BS 5931:1981 and BS 8004:1986. only unwanted materlals shall be carted away from site.

**DEMOLITION WORKS**
Demolition to be undertaken safely with all required safety equipment and barriers to deter the general public, any salvageable material to be taken into account on the tender.

**DRAINS**
Adequately protect existing live drains and maintain normal flow during construction Drains passing under building to be surrounded in min 100mm granular surround. Drains passing through walls to be protected by lintels and allow 50mm space around pipe. Seal opening with rigid sheet material. No drainage trenches to be deeper than adjacent foundations. Gullies to be external inspection pattern if not connected direct to an inspection chamber. All drains below areas of vehicular movement to be surrounded in 150mm minimum mass concrete encasement.All new drains to be tested in accordance with the Local Authority requirements.

The existing drainage is to be located and the status (seperate or combined) to be determined and the work proposed is to be approved by the drainage inspector before any work commences on site.

**MANHOLES AND CHAMBERS**
Internal sizes to engineers details. Bases to be 150 mm thick 25 N / mm concrete reinforced with 12 mm high yield mild steel bars @ 100 mm max. centres in both directions. 40 mm min. cover from slab soffit. Benching to manholes to rise vertically from edge of channel and radius slope of 1:12. Step irons to be provided in all mahholes and chambers at 300 mm vertical centres, staggered and commencing 450 mm the cover level. Manhole or chamber covers and frames to be double seal type having appropriate loading capacity for their locations.

**SOAKAWAYS**
Rainwater soakaways to be constructed in accordance with BRE Digest 365 to show compliance with Regulation 4, Schedule 1, Part H3 (Rainwater Drainage).

## Key

Existing Landscaping ( Trees )

Existing Landscaping ( Low Level Planting / Hedge )

For Proposed Landscaping Refer to detailed Landscaping Scheme

Application Boundary

Existing Road / Track Surface

Existing Buildings

Existing Caravans

Proposed Road / Track Surface

Proposed Static Pitch

Fire Hydrant FH

Bollard Lighting




Site Layout
Scale 1:500

## NOTES

**Written dimensions only are to be used from this drawing.**
**If any doubt exist the contractor must ask for clarification.**
**On no account must the contractor scale off this drawing.**

**Contractors and sub contractors must check and agree all dimensions before preparing workshop drawings or commencing work on site.**

**Contractors are responsible for informing mpas of any discrepancy discovered on this drawing or between this drawing and any other related documents issued in respect of the work.**

**This drawing and the copyrights and patents herein are the property of mpas and may be used or reproduced only under contract.**

**All work must be carried out in accordance with the current Building Regulations, Codes of Practice and British Standards. If any doubt exists the contractor must ask for clarification.**

**The Construction Design and Management Regulations 2007: It is the responsibility of the client to instruct the appointed contractor to identify any special hazards in the carrying out of the construction works and prepare a Health & Safety Plan and submit the relevant Information to the Health & Safety Executive if necessary.**
***Copyright mpas 2016***

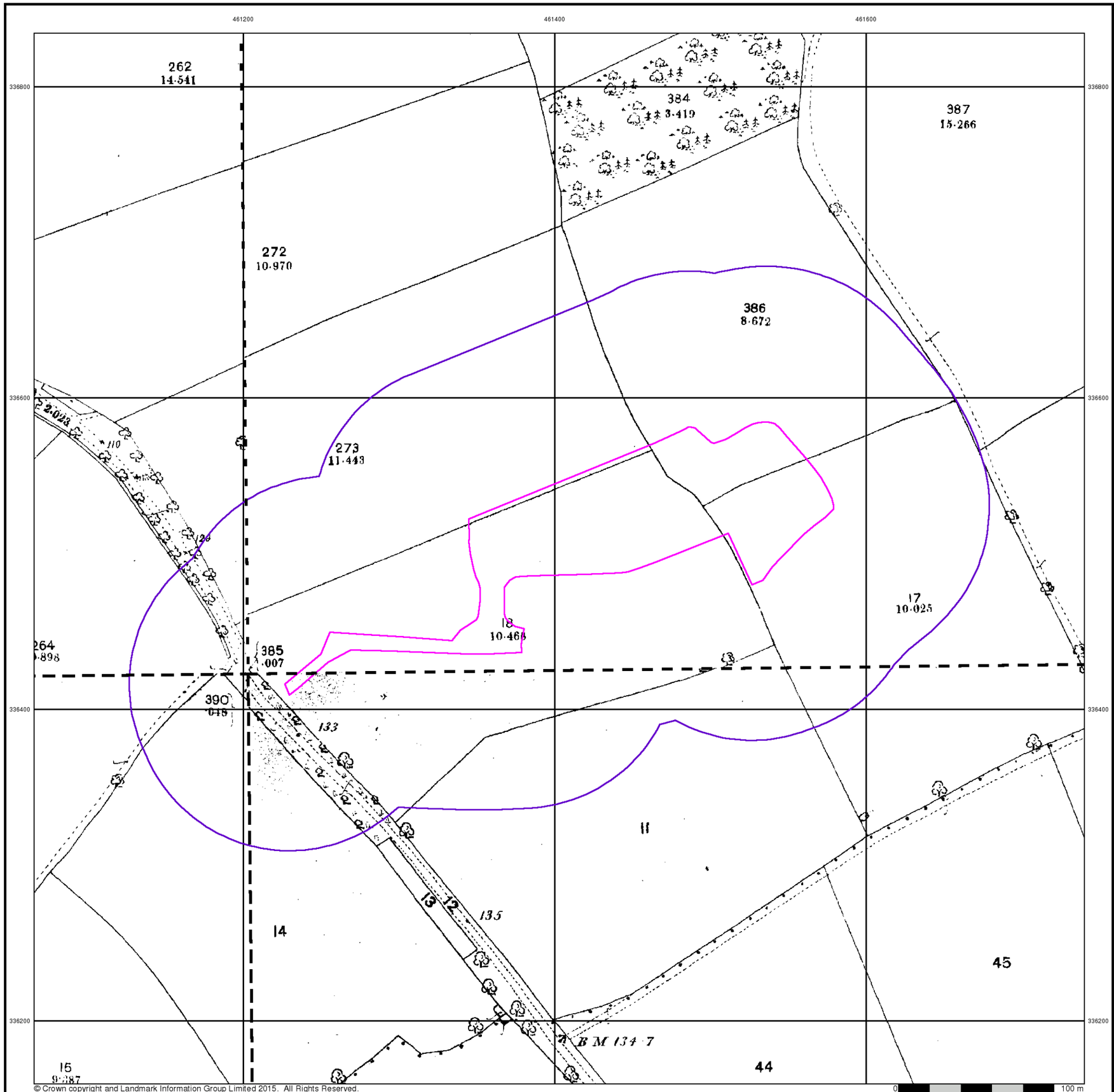
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|---|---|---|
| D | Amended To Client Requirements | 08-02-2017 |
| C | Minor Amendment | 07-02-2017 |
| B | Minor Amendment | 07-12-2016 |
| A | Amended To Client Requirements | 06-04-2016 |

| | | | | |
|---|---|---|---|---|
| Contract: Tollerton Park Home Estate, Tollerton Lane, Nottingham, NG12 4GD | | | | mpas |
| Client: Mr T Barney | | | | Martin Peacock Architectural Services |
| Drawing: Site Layout As Proposed | | | | Old Reading Room Main Street, Stainforth,Settle North Yorkshire BD24 9PE. Tel: 07765 224 261 |
| Drawn | MDP | Job No 2016-09 | Drawing No 501 | Revision D |
| Scale | 1:500 @A1 | | | |
| Date | 20-03-2016 | | | |

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# Appendix II Historical Maps



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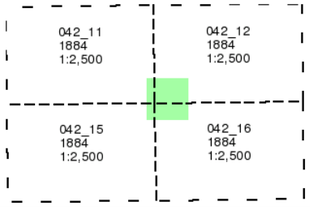
## Nottinghamshire

## Published 1884

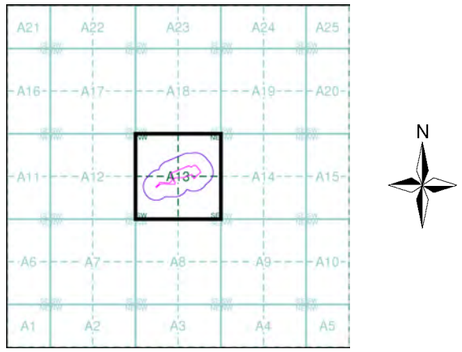
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered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




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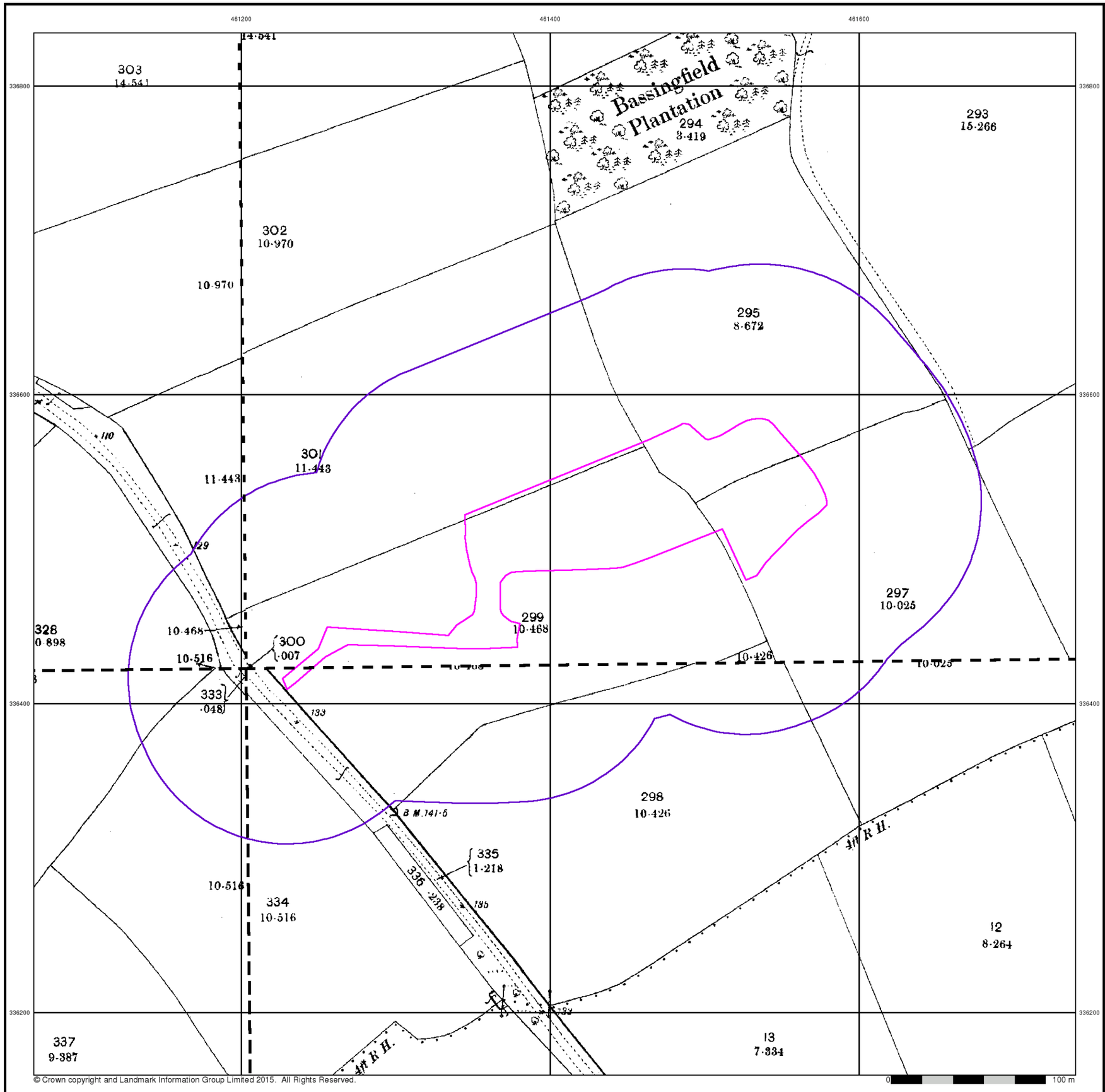
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| Search Buffer (m): | 100 |

## Site Details

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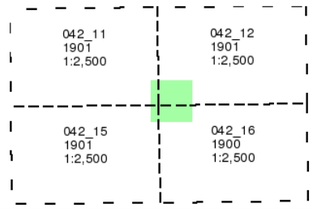
## Nottinghamshire

## Published 1900 - 1901

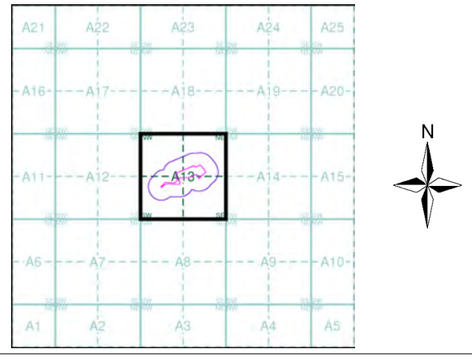
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## Historical Map - Segment A13




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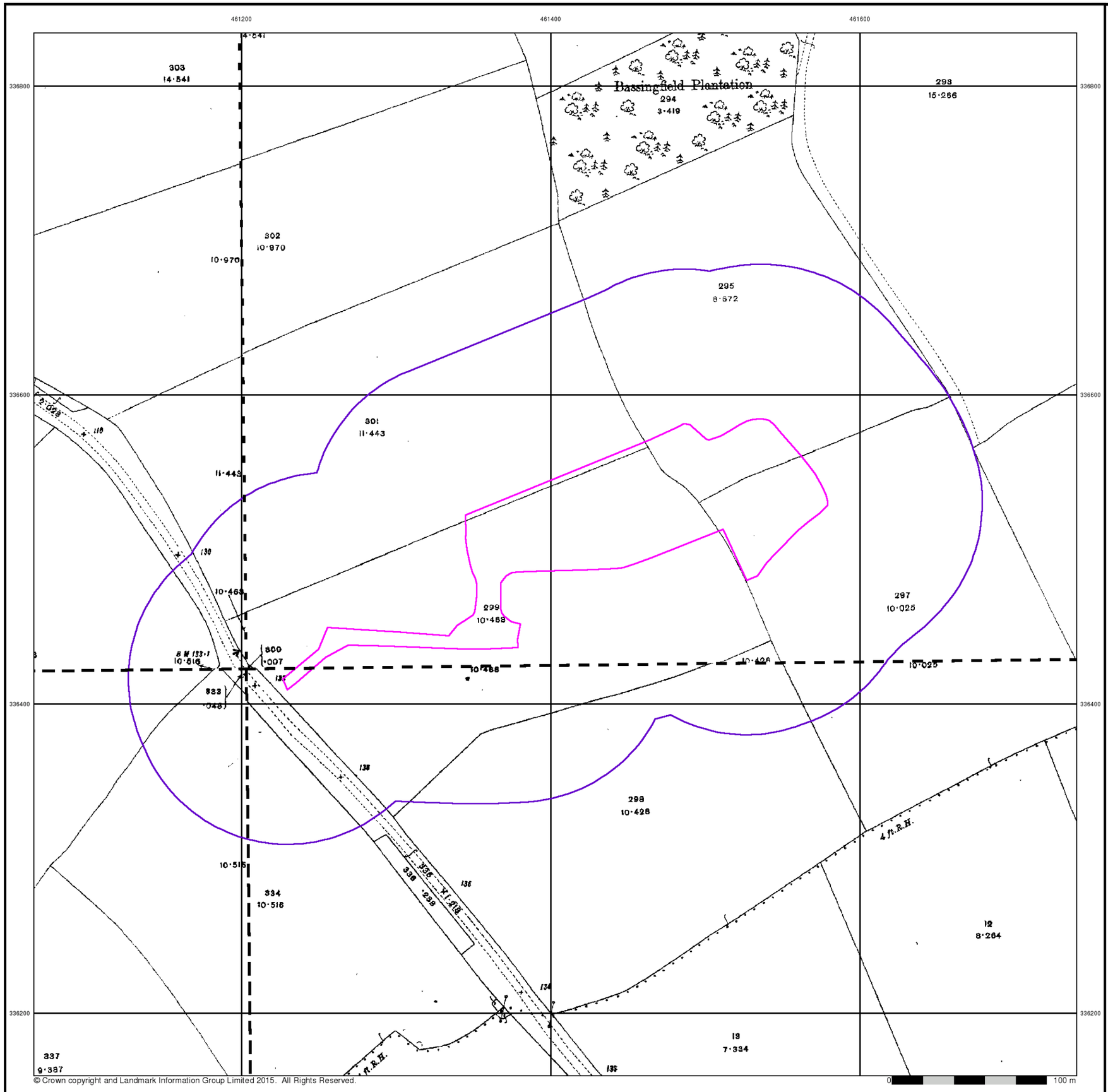
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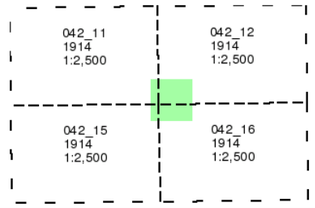
## Nottinghamshire

## Published 1914

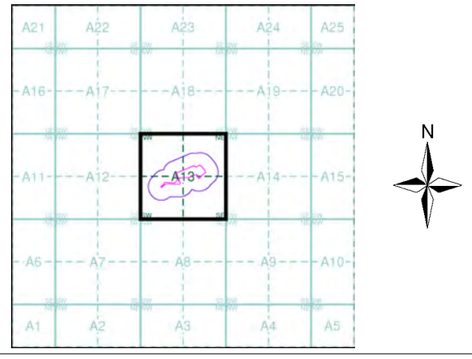
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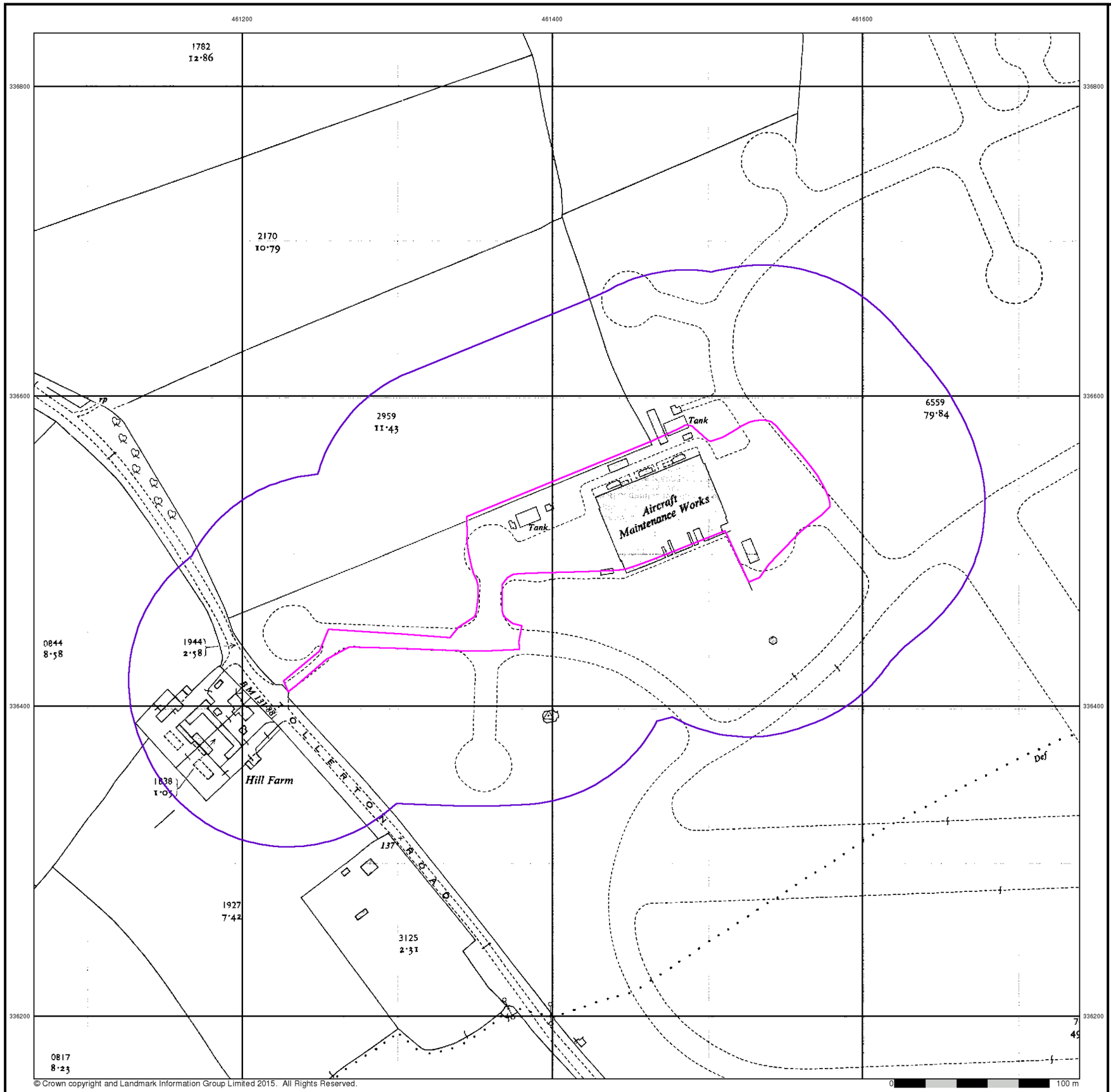
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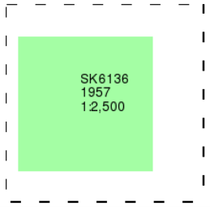
## Ordnance Survey Plan

## Published 1957

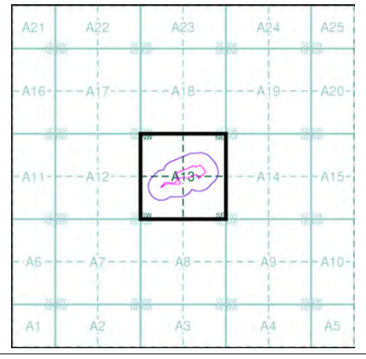
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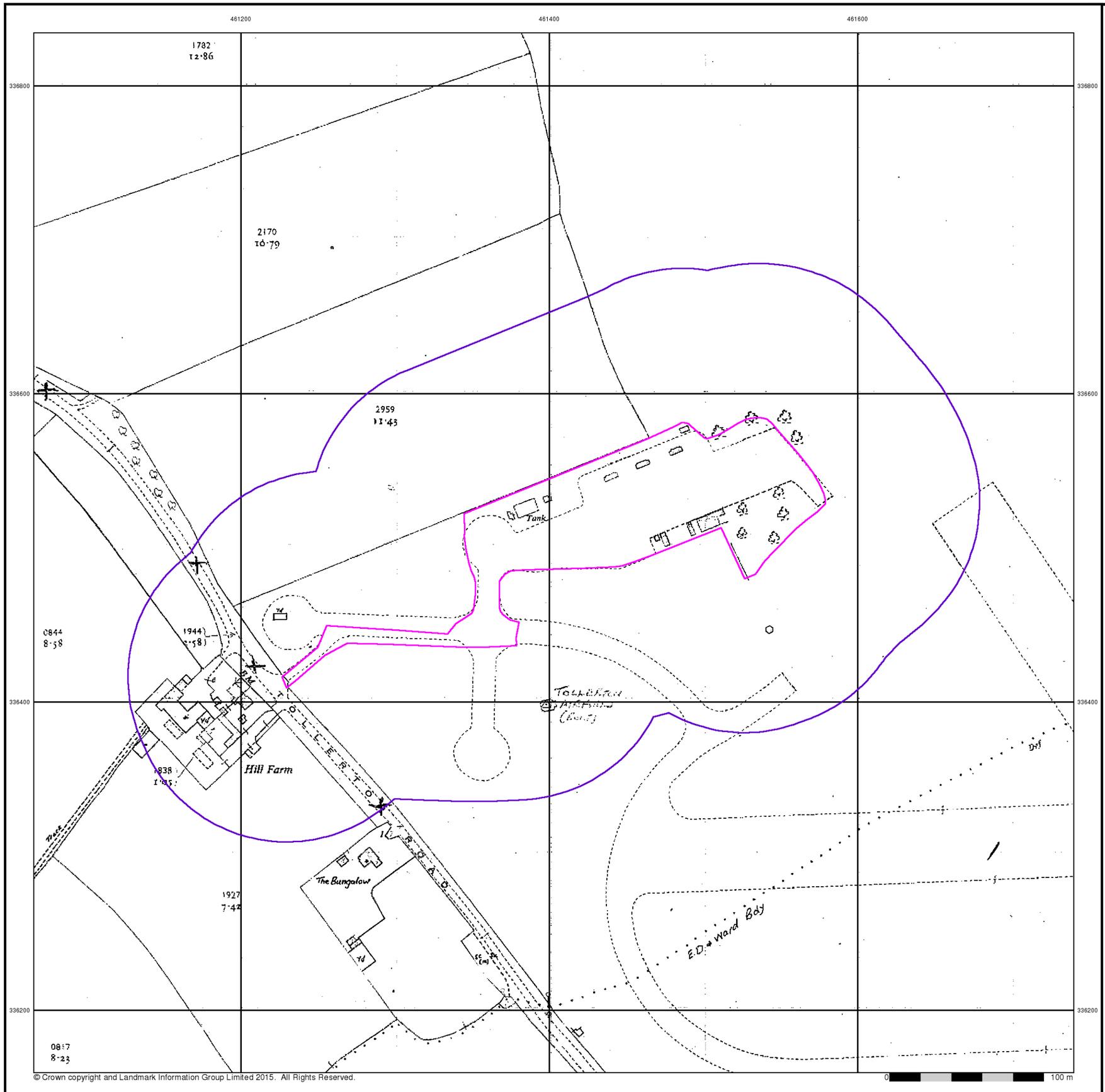
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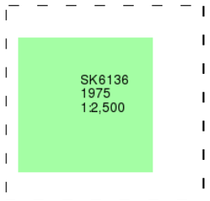
## Supply of Unpublished Survey Information

### Published 1975

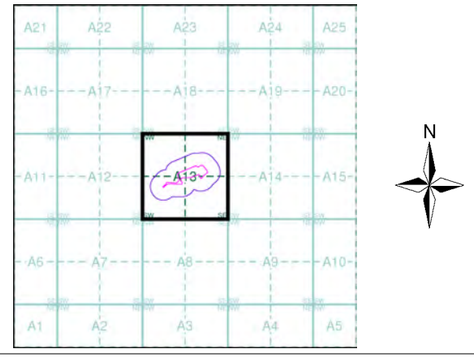
### Source map scale - 1:2,500

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a `work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

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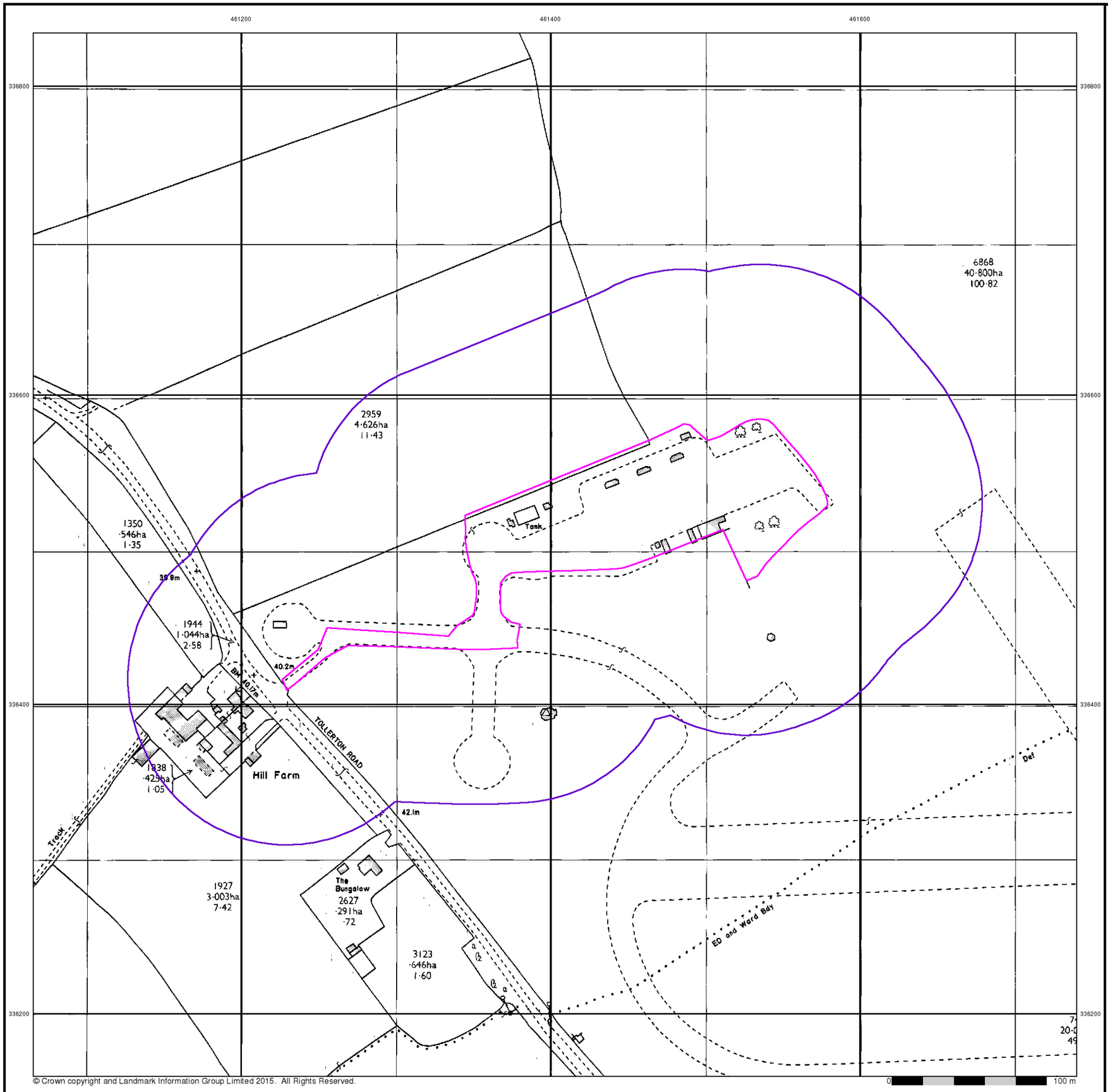

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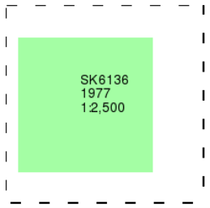
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**Published 1977**

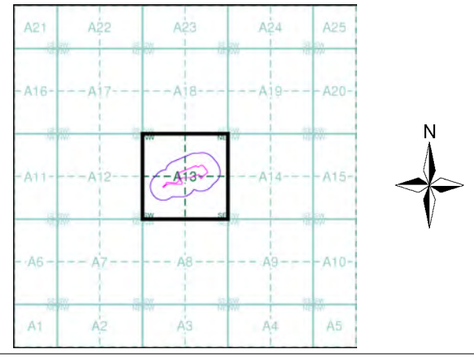
**Source map scale - 1:2,500**

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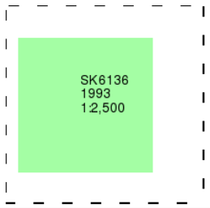
## Large-Scale National Grid Data

**Published 1993**

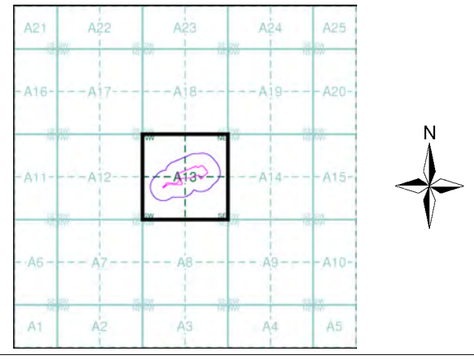
**Source map scale - 1:2,500**

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

## Map Name(s) and Date(s)




## Historical Map - Segment A13




## Order Details

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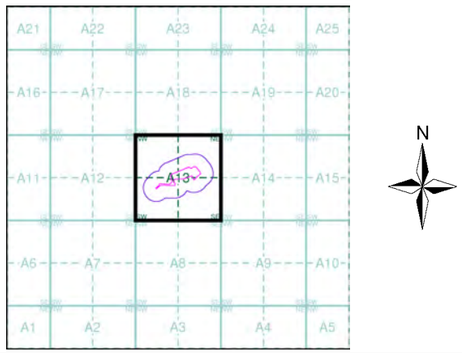
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## Historical Aerial Photography

### 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: | 139430533_1_1 |
| Customer Ref: | 01B714559 - Tollerton Park |
| National Grid Reference: | 461400, 336490 |
| Slice: | A |
| Site Area (Ha): | 1.75 |
| Search Buffer (m): | 100 |

## Site Details

Tollerton Park, Tollerton Lane, Tollerton, NOTTINGHAM, NG12 4GD

Landmark INFORMATION GROUP

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# Appendix III Supporting Information

The Coal Authority

Resolving the impacts of mining

# CON29M Non-Residential Mining Report





## TOLLERTON PARK
## TOLLERTON LANE TOLLERTON
## NOTTINGHAMSHIRE




| | |
|---|---|
| Date of enquiry: | 14 September 2017 |
| Date enquiry received: | 14 September 2017 |
| Issue date: | 14 September 2017 |
| Our reference: | 51001617880001 |
| Your reference: | 139430533_2\| |

# CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

**Client name**

LANDMARK INFORMATION GROUP LIMITED

**Enquiry address**

TOLLERTON PARK, TOLLERTON LANE, TOLLERTON, NOTTINGHAMSHIRE




Approximate position of property

Map data

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/thecoalauthority
/coalauthority

# Summary

| Has the search report highlighted evidence or potential of | | |
|---|---|---|
| 1 | Past underground coal mining | Yes |
| 2 | Present underground coal mining | No |
| 3 | Future underground coal mining | Yes |
| 4 | Mine entries | No |
| 5 | Coal mining geology | No |
| 6 | Past opencast coal mining | No |
| 7 | Present opencast coal mining | No |
| 8 | Future opencast coal mining | No |
| 9 | Coal mining subsidence | No |
| 10 | Mine gas | No |
| 11 | Hazards related to coal mining | No |
| 12 | Withdrawal of support | Yes |
| 13 | Working facilities order | No |
| 14 | Payments to owners of former copyhold land | No |
| 15 | Information from the Cheshire Brine Subsidence Compensation Board | No |

**For detailed findings, please go to page 4.**

# Detailed findings

### 1. Past underground coal mining

The property is in a surface area that could be affected by underground mining in 1 seam of coal at 430m to 440m depth, and last worked in 1990.

Any movement in the ground due to coal mining activity should have stopped.

### 2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

### 3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

### 4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

### 5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

### 6. Past opencast coal mining
The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

### 7. Present opencast coal mining
The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

### 8. Future opencast coal mining
There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

### 9. Coal mining subsidence
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

### 10. Mine gas
The Coal Authority has no record of a mine gas emission requiring action.

### 11. Hazards related to coal mining
The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

### 12. Withdrawal of support
The property is in an area where notices to withdraw support were given in 1958, 1976.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

### 13. Working facilities order
The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

### 14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

### 15. Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

## Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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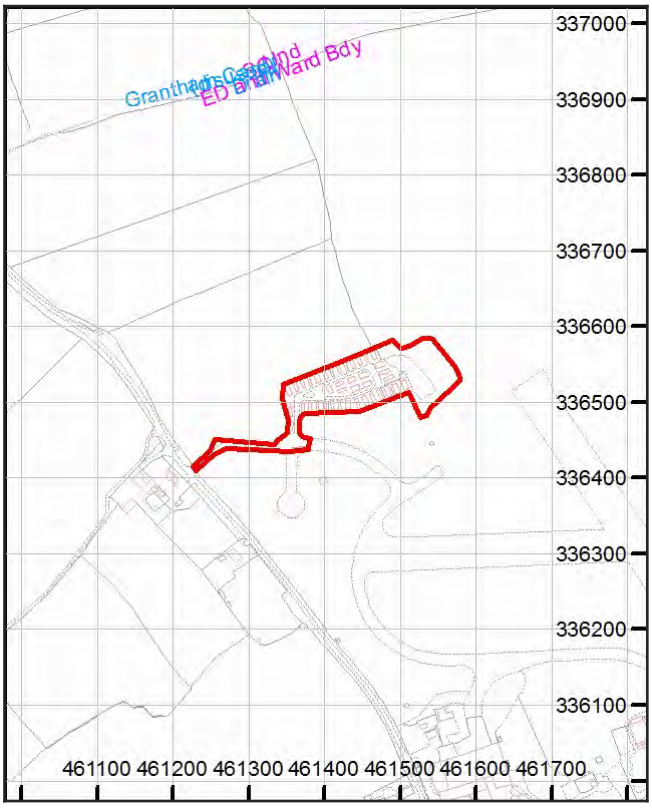
## Alternative formats

If you would like this report in an alternative format, please contact our communications team.

# Enquiry boundary

**Key**

Approximate position of enquiry boundary shown




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Form P.70
(Series 610)

SK 63NW/320

6-inch Map — B/N Regd. No.

(County, Sheet and Qtr.)

SK 63 NW

(Nat. Grid, Sheet and Qtr.)

Attach tracing from a map or sketch map if possible

SECTION OF TOLLERTON: CHESTNUT FARM SERIES
NO. 5 (EXTREME NORTH) BORING ADJACENT TO AIRFIELD ENTRANCE

PURPOSE Fault proving

EXACT SITE National Co-ordinates E 461,580 metres
N 335,870 metres

LEVEL AT WHICH ~~shaft~~ bore ~~drilled~~ COMMENCED RELATIVE TO O.D. +126ft 10ins (Newlyn)

DATE OF SINKING OR BORING 6th June to 8th June, 1962

SINKER OR BORER N.C.B. No. 6 Area Boring Team

| GEOLOGICAL CLASSIFICATION | NATURE OF STRATA | THICKNESS FEET | THICKNESS IN. | DEPTH FEET | DEPTH IN. |
|---|---|---|---|---|---|
| KEUPER MARL | Base of weathered zone not determined | | | 0 | 0 |
| | No cores | 5 | 2 | 5 | 2 |
| Siltstone | Few fragments only.<br>Coarse, pale greenish grey | | | 11 | 2 |
| Siltstone | (0/6 fragments & part cores)<br>Fine, greenish buff | | | | |
| Marl | (0/10 part cores)<br>Reddish brown, 0/1 green layer near base few green streaks | | | 14 | 10 |
| Siltstone | (1/8 cylinders and fragments)<br>Coarse, sandy and cavernous towards base | | | | |
| Mudstone | (0/6 cylinder)<br>Reddish brown | | | 21 | 6 |
| Mudstone | (2/0 cylinders and fragments)<br>Silty in most parts, reddish brown, few small green patches | | | 26 | 6 |
| Mudstone | (Complete core)<br>Pale greyish green | 1 | 6 | | |
| Mudstone | (Complete core)<br>Sandy, increasingly sandy towards base, pale greyish green | 1 | 3 | 28<br>29 | 0<br>3 |
| | COTGRAVE SKERRY | | | | |
| Sandstone | Fine, greenish white and pale buff, muddy bands near top, cavernous 31/6 - 33/0<br>0/6 lost 29/3 - 31/6<br>1/6 lost 32/6 - 34/6 | 5 | 3 | 34 | 6 |
| Siltstone | Complete core<br>Sandy, greenish white, soft, muddy below 36/0 | 2 | 0 | 36 | 6 |

British Geological Survey

Form P.71
(Series 610)

6-inch Map | 6/11

SECTION OF Tolethorpe - Chestnut Farm Series; No 5 (Extreme North) Boring

SK 63 NW/320

| GEOLOGICAL CLASSIFICATION | NATURE OF STRATA | THICKNESS FEET | THICKNESS IN. | DEPTH FEET | DEPTH IN |
|---|---|---|---|---|---|
| | | | | 36 | 6 |
| Mudstone | (2/6 fragments and cylinders)<br>Silty, light reddish brown,<br>0/4 pale green fine silt near top and<br>0/1 @ base | | | 41 | 6 |
| Mudstone | (3/3 cylinders and fragments)<br>Silty in top half, light reddish brown,<br>darker towards base, small green patches<br>and streaks,<br>0/2 green mud @ base<br>0/1 pale sandy siltstone near top | | | 46 | 6 |
| Mudstone | (fragments and sediment, little lost)<br>Silty, reddish brown, little green,<br>blocky fracture,<br>0/3 sandy green layer @ 46/9, 0/2 @ 49/3 | 3 | 8 | | |
| | BASE OF HOLE | | | 50 | 2 |

British Geological Survey

Form P.70
(Series 610)

SK63NW/319

6-inch Map | B/H Regd. No

(County, Sheet and Qtr.)

SK 63 NW

(Nat. Grid, Sheet and Qtr.)

Attach tracing from a map or sketch map if possible

SECTION OF TOLLERTON: CHESTNUT FARM SERIES
NO. 4 (NORTH) BOREHOLE

PURPOSE Fault proving

EXACT SITE National Co-ordinates
E 461,547 metres
N 335,730 metres

LEVEL AT WHICH ~~shaft~~ bore ~~drift~~ COMMENCED RELATIVE TO O.D. +121ft 3ins (Newlyn)

DATE OF SINKING OR BORING 25th April to 1st June, 1962

SINKER OR BORER N.C.B. No. 6 Area Boring Team

| GEOLOGICAL CLASSIFICATION | NATURE OF STRATA | THICKNESS FEET | THICKNESS IN. | DEPTH FEET | DEPTH IN. |
|---|---|---|---|---|---|
| KEUPER MARL | Base of weathered zone 71 ft. (Top of Gypsum) Cylinders, fragments & sediment 3/6-71 ft. Complete cores below 71 ft. | | | 0 | 0 |
| | No cores | 5 | 6 | 5 | 6 |
| | Fragments of Fine sandstone, greenish white & mudstone green | 0 | 6 | 6 | 0 |
| | (0/7 cylinders, rest sediment) Mudstone, reddish brown, many small pale brown silt fragments ?breccia 6/0 - 6/4 | 1 | 0 | 7 | 0 |
| | Fragments only Sandstone, greenish white and siltstone pale green | 0 | 4 | 7 | 4 |
| | (Cylinders & sediment 2/8 lost) Mudstone, silty, light reddish brown 0/1 pale green soft sandy layer near base | | | 12 | 2 |
| Mudstone | Pale green, little brown, well cemented siltstone bands pale green 0/1 @ 12/6, 0/2 @ 12/11 (Cylinders 0/3, rest sediment and fragments) | 0 | 10 | 13 | 0 |
| Mudstone | (2/4 cylinders and fragments) Light reddish brown, few disturbed and broken pale green silty laminae in top 0/6 and near base 0/4 pale green muddy sandstone, small cavities near middle | | | 18 | 0 |
| Siltstone | Worn fragments only Tough well cemented, few small cavities, pale greenish grey, passing down to soft muddy siltstone @ 19/0, pale green Passage | 1 | 7 | 19 | 7 |
| Mudstone | (1/4 lost, rest cylinders) Silty, light reddish brown, few small silty pale green patches | | | 21 | 10 |
| Mudstone | (2/2 cylinders and fragments) Silty, light reddish brown, few small silty pale green patches | | | 26 | 10 |

British Geological Survey

Form P.71
(Series 810)

6-inch Map | 6/N

SECTION OF TOLLERTON: CHESTNUT FARM SERIES
NO. 4 (NORTH) BOREHOLE

SK 63 NW / 319

| GEOLOGICAL CLASSIFICATION | NATURE OF STRATA | THICKNESS FEET | THICKNESS IN. | DEPTH FEET | DEPTH IN |
|---|---|---|---|---|---|
| | | | | 26 | 10 |
| Mudstone | (Complete in cylinders)<br>Silty, soft, plastic, light green | 2 | 10 | | |
| | | | | 29 | 8 |
| Mudstone | Sandy, light green, sand especially conc. in certain paler patches and bands | | | | |
| | Passage | | | 30 | 10 |
| Sandstone | (0/10 fragments only)<br>Massive, brownish and greenish white, cavernous | | | | |
| | | | | 35 | 3 |
| Mudstone | (1/0 cylinders)<br>Very sandy, light green patches and vague layers of fine Sandstone, pale buff | | | | |
| | | | | 36 | 3 |
| Sandstone | (1/9 fragments only)<br>Fine, greenish white, cavernous and Mudstone, reddish brown,<br>Salt pseudomorphs in one laminated fragment | | | | |
| | | | | 39 | 6 |
| Mudstone | Greenish grey, little brown, laminae of fine sandstone, greenish white | 1 | 1 | | |
| | | | | 40 | 7 |
| Mudstone | Sandy, massive reddish brown, patches of muddy sandstone, pale green 0/3 @ 41/2 41/6, 41/10 | 1 | 3 | | |
| | | | | 41 | 10 |
| Siltstone | Fine, light reddish brown, few disturbed laminae becoming muddy basally | 1 | 4 | | |
| | | | | 43 | 2 |
| Mudstone | (Sediment only, 1/3 lost)<br>reddish brown | 3 | 1 | | |
| | | | | 46 | 3 |
| Sandstone | Very fine, greenish white, little brown mud staining | 0 | 3 | | |
| | | | | 46 | 6 |
| Mudstone | (Fragments only, 0/8 lost)<br>Silty, massive, blocky fracture, brown, few green patches | 2 | 2 | | |
| | | | | 48 | 8 |
| | Badly broken core<br>(4/2 broken cylinders and 2/0 of sediment and fragments) | | | | |
| Mudstone | Silty, brown, laminae of fine siltstone concentrated in green bands @ 49/1, 52/9 few laminae elsewhere | 6 | 1 | | |
| | | | | 54 | 9 |
| Mudstone | Sandy, light reddish brown, sand especially concentrated in few green patches | 0 | 7 | | |
| | | | | 55 | 4 |
| | Broken core cylinders and fragments,<br>(1/4 lost) | | | | |
| Mudstone | Silty, reddish brown, laminae of fine siltstone, pale brown, concentrated at intervals, current bedded 59/2 – 59/4 | 8 | 8 | | |
| | | | | 64 | 0 |
| Mudstone | Reddish brown and little silty, soft | 1 | 3 | | |
| | | | | 65 | 3 |
| Mudstone | Green, fine sandstone, greenish white interlaminated, few small cavities, contorted laminae | 0 | 3 | | |
| | | | | 65 | 6 |
| Mudstone | Silty, reddish brown, laminae of fine siltstone, pale brown, disturbed laminae 65/6 – 66/0, fine mud-filled cracks | 0 | 9 | | |
| | | | | 66 | 3 |

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(Series 610)

6-inch Map | 3/11

SECTION OF TOLLERTON: CHESTNUT FARM SERIES
NO. 4 (NORTH) BOREHOLE

SK 63 NW 3/19

| GEOLOGICAL CLASSIFICATION | NATURE OF STRATA | THICKNESS FEET | THICKNESS IN. | DEPTH FEET | DEPTH IN. |
|---|---|---|---|---|---|
| | | | | 66 | 3 |
| | Sediment and fragments only, little lost | | | | |
| Mudstone | Little silty, reddish brown, paler silty patches, rare laminae, little pale green silt 69/6 - 70/6 | 4 | 3 | | |
| | | | | 70 | 6 |
| Mudstone | Silty, brown, laminae of fine siltstone, pale brown concentrated at intervals viz. 70/9 - 71/4 (mostly even) 73/6 - 75/9 72/6 - 73/0 (few) Occasional chocolate mud laminae 70/9 - 71/4, sun cracks 70/6 - 71/4 Fine gypsum veins below 71/4, (total 0/2) gypsum nodules 71/8 - 72/3 Salt Pseudomorphs @ 70/10 - 71/6 rippling and current bedding 73/8 - 75/6, disturbed laminae 75/6 - 75/9 | 5 | 3 | | |
| | Passage | | | 75 | 9 |
| Mudstone | Reddish brown, thin layers and laminae of fine siltstone, pale brown and pale green, few chocolate mud laminae, salt Pseudomorphs @ 77/5 - 77/9, few thin gypsum veins, few broad ripples | 2 | 4 | | |
| | | | | 78 | 1 |
| Mudstone | Silty, reddish brown, chiefly massive few scattered laminae of fine siltstone pale brown and especially @ 81/0 - 81/4 0/1 pale green siltstone @ 81/0 Chocolate mud laminae 81/0 - 81/2 0/1 gypsum veins @ 78/5, 79/6 and few wafer thin veins, small gypsum nodules 80/0 - 82/0, mud cracks 81/0 - 81/4 | 5 | 5 | | |
| | Sharp | | | 83 | 6 |
| Sandstone | Very fine, greenish white, rippled and disturbed laminae of Mudstone, green, gypsum nodules, 0/1 gypsum vein @ 84/1 | 1 | 1 | | |
| | Mottled passage | | | 84 | 7 |
| Mudstone | Slightly silty, brown, sandy green patches 84/7 - 85/3, chiefly massive 84/7 - 87/0 88/9 - 90/8, pale green siltstone bands with few green mud laminae 87/6 - 87/8, 88/1 - 88/3, 90/1 - 90/2 0/2 vein breccia, pale creamy ?silt broken and decimated into angular fragments by intense brown mud veining @ 88/0, enterolithic structures associated with gypsum nodules 88/6 - 88/9, few wafer thin gypsum veins | 6 | 1 | | |
| | Sharp | | | 90 | 8 |
| Siltstone | Coarse, pale green and Mudstone, little silty, reddish brown interlayered and interlaminated, few green mud laminae in siltstone layers, 2½" gypsum @ 91/10, 0/1 @ 92/9, silt and mud in equal amounts Salt Pseudomorphs @ 91/6, 92/1, 92/7 | 2 | 1 | | |
| | Sharp | | | 92 | 9 |
| Mudstone | Silty, massive, reddish brown, gypsum nodules with associated green patches | 1 | 0 | | |
| | | | | 93 | 9 |

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(Series 610)

6-inch Map | 5/W

SECTION OF SOLLIHULL, CHESHUNT PARK SERIES
BO. 4 (PUMPH) BOREHOLE

SK 63 NW 3/19

| GEOLOGICAL CLASSIFICATION | NATURE OF STRATA | THICKNESS FEET | THICKNESS IN. | DEPTH FEET | DEPTH IN. |
|---|---|---|---|---|---|
| | | | | 93 | 9 |
| Mudstone | Chocolate and fine siltstone, pale brown interlaminated and interlayered, laminae even and thin in most parts below 94/5 0/1 gypsum veins @ 95/1, 95/10, 96/6, 97/9, 98/4 Salt Pseudomorphs @ 94/6, 96/2, 96/9, 97/6, 97/11, sumcracks, 0/4 gypsiferous cemented, massive siltstone @ 97/5 | 4 | 6 | | |
| | Fairly sharp | | | 98 | 3 |
| Mudstone | Silty, reddish brown, few green patches, laminae of fine siltstone, pale brown, crowded 98/11 - 99/2, sumcracks 98/11 - 99/2, gypsum nodules common, 0/3 vein @ 99/9 | 1 | 6 | | |
| | Sharp | | | 99 | 9 |
| Siltstone | Fine, pale brown, few pale green patches gypsiferous cement, muddy 01/2 - 01/7 few mud laminae, brown, 00/4 - 00/5 0/2 fibrous gypsum @ 01/1, 0/1 @ 00/6 gypsum nodules | 1 | 10 | | |
| | Interlayered | | | 101 | 7 |
| Mudstone | Reddish brown, few silty green patches, small gypsum nodules | 1 | 6 | | |
| | | | | 103 | 1 |
| Mudstone | Chocolate and fine siltstone, pale brown, interlaminated, laminae little disturbed 03/1 - 03/7, wafer thin 03/7 - 07/0, sumcracks, salt pseudomorphs @ 03/3, 0/1 gypsum vein @ 03/5, 04/1, 0/2 @ 06/5 06/11, brecciated laminae @ 06/0, 0/1 green band @ 04/4, salt pseudomorphs @ 05/8, 05/9, 05/10 | 3 | 11 | | |
| | Passage | | | 107 | 0 |
| Mudstone | Little silty, massive in most parts, 0/1 silty green bands in finer laminated part 08/4 - 09/2, few small gypsum nodules | 4 | 2 | | |
| | | | | 111 | 2 |
| Siltstone | Fine, pale green and pale brown, and Mudstone, chocolate, interlaminated, bread wave ripples @ 11/9, sun cracks, 0/3 gypsum @ 11/7 | 1 | 4 | | |
| | Sharp | | | 112 | 6 |
| Mudstone | Little silty, massive, reddish brown | 1 | 6 | | |
| | Fairly sharp | | | 114 | 0 |
| Siltstone | Coarse, pale green, laminae of Mudstone, green, disturbed in parts, bread wave ripples @ 14/2, small salt pseudomorphs @ 14/3, 14/7, 15/1, 0/1 gypsum @ 15/0 | 1 | 8 | | |
| | Fairly sharp | | | 115 | 8 |
| Mudstone | Chocolate, few wafer thin laminae of fine siltstone, pale green and pale brown, purplish 16/6 - 16/8, 0/1 gypsum @ 16/6 2" sticky brown fine siltstone layers 15/11 - 16/3, salt pseudomorphs @ 16/7 former salt pseudomorphs @ 15/11, sun cracks | 1 | 0 | | |
| | | | | 116 | 8 |

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Form P.71
(Series 810)

6-inch Map | 6/N

SECTION OF TOLLERTON: CHESTNUT FARM SERIES
NO. 4 (NORTH) BOREHOLE

SK 63 NW / 319

| GEOLOGICAL CLASSIFICATION | NATURE OF STRATA | THICKNESS FEET | THICKNESS IN. | DEPTH FEET | DEPTH IN |
|---|---|---|---|---|---|
| | | | | 116 | 8 |
| Siltstone | Coarse, pale green and Mudstone, reddish brown, interbedded, rare laminae, vague slump @ 17/2, large (3") salt pseudomorphs @ 17/4 | 0 | 10 | | |
| | | | | 117 | 6 |
| Mudstone | Reddish brown, massive | 1 | 4 | | |
| | Passage | | | 118 | 10 |
| Siltstone | Fine, light reddish brown, siltstone, coarser, pale green and Mudstone, red brown and chocolate, interlaminated and interlayered (maximum bed thickness 2") Green beds: 23/7 - 24/0, slumping in fine silt 19/5 - 19/7, purplish 24/0 - 24/5 0/3 gypsum @ 19/10, 0/2 @ 23/5, 0/1 @ 24/7 salt pseudomorphs @ 19/10, 20/4, "hoppers" @ 19/4 Broad ripples @ 19/10, broad mud filled cracks 21/0 - 23/6 Massive Mudstone, brown 22/4 - 23/6 with quartz grains near base, disturbed laminae 21/7 - 22/6, discordant dip 23/7 - 24/0 | 6 | 2 | | |
| | | | | 125 | 0 |
| Siltstone | Coarse, pale green, rippled laminae of Mudstone, green, salt pseudomorphs @ 25/2 | 0 | 4 | | |
| | Sharp | | | 125 | 4 |
| Mudstone | Reddish brown, silty below 27/11, massive, interbedded with Mudstone, reddish brown, fine siltstone, pale brown, interlaminated, laminated beds 27/8 - 27/11, 30/0 - 31/1 (little disturbed), small gypsum nodules and pellets in massive beds, thin gypsum veins total 0/2, 0/1 vein @ 30/9, 32/0, broad mud filled cracks 30/0 - 31/1 Gypsum cemented patches 32/0 - 32/9 Salt pseudomorphs @ 30/0 | 7 | 6 | | |
| | Short passage | | | 132 | 10 |
| Mudstone | Chocolate and fine siltstone, pale brown, interlaminated, bands of pale green siltstone with green mud laminae: 35/7 - 35/10, 38/3 - 38/6, 40/1 - 40/6, massive brown mudstone with gypsum pellets 34/2 - 35/0, 0/3 gypsum @ 33/3, 0/1 @ 35/7, 37/4 Salt pseudomorphs @ 33/4 - 33/11, 35/7 - 35/10, 35/11 - 36/6, 37/2 - 37/7, [illegible] @ 37/5 - 37/7, rippling @ 36/0 - 36/6, 37/3, slumping @ 38/6, few sun cracks, laminae much disturbed 38/6 - 40/6 | 7 | 8 | | |
| | | | | 140 | 6 |
| Siltstone | Fine, muddy, reddish brown, few broken silt and chocolate mud laminae, 0/2 green band @ 42/5, 0/2 gypsum @ 41/0, even chocolate mud wafer laminae 43/4 - 43/7 with salt pseudomorphs | 6 | 0 | | |
| | | | | 146 | 6 |
| Mudstone | Chocolate, siltstone, coarse, greenish white and fine pale brown, interlaminated and interlayered, few green mud laminae, brown silt sediment, massive mudstone beds with crowded gypsum nodules (50% gypsum) 47/4 - 48/0, 50/9 - 52/3, 53/0 - 53/3, 0/2 fibrous gypsum veins @ 46/10, 48/11, 50/9, 52/3, 53/0, 54/7, salt pseudomorphs @ 48/6, 49/2, 49/6, 49/9, 50/2, 54/3 - 54/7, Current structures 49/8 - 50/0, 53/9 - 53/11 | | | | |

British Geological Survey

Form P.71
(Series 610)

6-inch Map: SK 63 NW | B/H: 3/19

SECTION OF TOLLERTON: CHESTNUT FARM SERIES
NO. 4 (NORTH) BOREHOLE

| GEOLOGICAL CLASSIFICATION | NATURE OF STRATA | THICKNESS FEET | THICKNESS IN. | DEPTH FEET | DEPTH IN. |
|---|---|---|---|---|---|
| | | | | 146 | 6 |
| | Broad ripples 54/1 - 54/3<br>Tulip structure associated with gypsum nodule @ 54/3 | 8 | 2 | | |
| | Sharp | | | 154 | 8 |
| Mudstone | Silty, reddish brown, disturbed laminae of fine siltstone, pale brown, Mudstone, chocolate in parts, gypsum nodules 54/8 - 55/0, 0/1 fibrous gypsum @ 55/7 | 2 | 0 | | |
| | | | | 156 | 8 |
| Mudstone | Chocolate, wafer laminae of fine siltstone, pale brown, green 57/6 - 57/10, laminae disturbed, contorted and broken by deep irregular broad mud filled cracks, salt pseudomorphs @ 57/1, 57/6<br>0/1 gypsum @ 56/11, 57/5 | 1 | 2 | | |
| | Passage | | | 157 | 10 |
| Mudstone | Very silty, massive, reddish brown, blocky fracture, 0/1 gypsum veins @ 59/5, 60/6 | 2 | 11 | | |
| | Sharp | | | 160 | 9 |
| Siltstone | Coarse, pale green, Mudstone, silty, reddish brown and Mudstone chocolate and green interlaminated, disturbed by broad mud cracks 61/0 - 61/5, finer even laminae 61/5 - 62/2, rippling @ 61/6<br>0/2 gypsum @ 62/2 | 1 | 5 | | |
| | | | | 162 | 2 |
| Mudstone | Very silty passing down to fine, Siltstone, muddy @ 64/10, reddish brown, massive, interbedded with thin beds of Mudstone, chocolate, laminae (little disturbed) of fine siltstone, pale brown, trace of green, trace purple @ 72/2, laminated beds: 66/5 - 66/8, 67/0 - 67/6, 69/3 - 69/6 71/2 - 72/10, small gypsum pellets in massive beds, mud cracks in laminated beds, contorted silty laminae 64/6 - 64/10, salt pseudomorphs @ 66/5, 71/8 - 72/10, rippling @ 71/3, 0/1 gypsum @ 69/7, 0/3 @ 72/5 | 12 | 2 | | |
| | | | | 174 | 4 |
| Siltstone | Fine, light brown, coarse, pale green and Mudstone, chocolate, trace green interlaminated, disturbed laminae, mud cracks, 0/2 gypsum @ 74/8, 77/4, 78/3 salt pseudomorphs @ 74/9, 75/3 (many) 75/7 77/2 | 2 | 11 | | |
| | | | | 177 | 3 |
| Mudstone | [illegible] | 1 | 0 | | |
| | | | | 178 | 3 |
| Mudstone | Chocolate, laminae and thin layers of siltstone, pale green, disturbed laminae, slumping in 0/2 green bed @ 79/3, brecciated laminae 80/3 - 80/7, small green patches with purple streak in centre 79/3 - 79/10, broad and deep mud cracks, 0/1 purplish fine siltstone @ 80/6 | 2 | 11 | | |
| | Sharp | | | 181 | 2 |

British Geological Survey

**Bayliss, Helen (GVA)**

**From:** Nigel March <NMarch@rushcliffe.gov.uk>
**Sent:** 02 October 2017 12:26
**To:** Bayliss, Helen (GVA)
**Cc:** Egan, Tamar (GVA)
**Subject:** RE: Request for Environmental Information - Tollerton Park, Nottingham NG12 4GD

Hi Helen,

Our response to your specific questions regarding the above site is below – sorry for the delay – I have been out of the office and just returned this morning.

1. Does the Council hold any records of past contaminative land uses on site or is likely to be determined as Contaminated Land under Part 2A of the Environmental Protection Act?

The site in question has historically been used for dismantling World War II bombers and may have been contaminated by fuels and oils as well as minute quantities of radium used on luminised dials in the cockpits. It is therefore reasonable to assume that there is a possible risk from contamination.

The site is not designated as contaminated land but, due to the former use, is on our prioritised land and classified as low risk scoring 167 out of a total of 1873 sites. The inspection of the 1873 prioritised sites is ongoing with the sites of highest priority being undertaken first. This is an on-going process and it is not possible to predict how long it will take; however, it is unlikely that the site will be investigated under Part 2A of the Environmental Protection Act 1990 in the near future.

2. Does the Council hold any previous ground investigation reports, monitoring records or any relevant documentations for land contamination issues at the property and were all planning conditions relating to contaminated land/site investigation/remediation discharged for the current development?

Our Service has no previous ground investigation reports, monitoring records or relevant documents regarding land contamination at the site.

A planning application for the siting of 9 mobile homes on the site was received in October 2016 (Planning Ref: 16/02400/FUL). Our Service recommended a planning condition requiring the submission of a contaminated land report prior to the commencement of any site works. This application was granted on the 18th April 2017. We have not received the required contaminated land report to date.

3. Does the Council hold any records of landfill, waste management sites or regulated premises (Pollution Prevention and Control Authorisations) at the property or that may affect the property?

No - there are no landfill, waste management sites or regulated premises (Pollution Prevention and Control Authorisations) at the property or within a 1km radius from the site.

4. Does the Council hold any records of pollution incidents occurring at the property or that may affect the property?

Our Service dealt with a complaint about water polluting the surface water drainage system on the site in March 2016 (Ref: 16/01006/DRAIUR). This incident was referred to Severn Trent Water for investigation as external flooding; from our records, the source of the water was found to be from a fracture to a local water supply pipe. Repairs works were carried out to the water supply pipe and we have not had any further complaints regarding water pollution incidents affecting the site since.

5. Does the Council hold any records of private abstraction wells/water supplies on or within 250m of the property?

No – we have no records of private abstraction wells/water supplies on or within 250m of the site.

The information provided is based on current records held by this Authority and all reasonable checks have been made to ensure its accuracy. The information is not conclusive and this Authority cannot accept any liability for the enquirer placing sole reliance on the information provided.

I trust this answers you query on this matter – should you require any further advice on this please get in touch.

Thanks,

Nigel

**Nigel March**
Environmental Health Officer
Rushcliffe Borough Council
0115 9148484
nmarch@rushcliffe.gov.uk
www.rushcliffe.gov.uk

**Please consider the environment. Do you really need to print this e-mail?**

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**From:** Bayliss, Helen (GVA) [mailto:helen.bayliss@gva.co.uk]
**Sent:** 15 September 2017 12:18
**To:** Nigel March
**Cc:** Egan, Tamar (GVA)
**Subject:** RE: Request for Environmental Information - Tollerton Park, Nottingham NG12 4GD

Hi Nigel

Thanks for coming back so promptly to us. I can confirm that I have made the payment of £69 as requested and we look forward to receiving your response in due course.

Kind regards

Helen

**Helen Bayliss BSc CSci MIEnvSc**
Principal Due Diligence Consultant

**GVA**

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# Appendix IV Definitions and Reservations

# Environmental Definitions

## 1 Environmental Reports

Any reference to environmental reports should be taken to mean one or all of the following types of report:

Phase 1

This is a desk-based study (supported by a site inspection if agreed) of past and present uses of the site, geological and hydrogeological conditions, regulatory review and qualitative risk assessment.

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties.

The opinions given in the report have been dictated by the finite data on which it is based and is relevant only to the purpose for which the report was commissioned.

The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions.

Should additional information become available which may affect the opinions expressed in this report, GVA reserves the right to review such information and, if warranted, to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase 2

This is an intrusive phase of works involving the drilling of boreholes/trial pits and the testing of soil, groundwater and soil gas samples for environmental and geotechnical purposes.

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions to provide a reasonable assessment of the environmental risks together with engineering and development implications. If costs have been included in relation to site remediation these must be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site can only provide a general indication of site conditions.

The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes.

There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time that site work was carried out.

It should be noted that groundwater levels will vary owing to seasonal, tidal and weather related effects.

The scope of the investigation was selected based on the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

The risk assessment and opinions provided, inter alia, take into consideration currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

GVA accepts no liability what so ever for the content or conduct of the Environmental Consultant/Engineer of Sub Consultants/ Contractors appointed on behalf of the client by us.

## 2 Geology and Mining

### 2.1 Ground Conditions

Ground conditions consider the underlying geology, the presence of mining or quarrying, geological faults and the potential for contaminated land.

### 2.2 Superficial Deposits

Superficial deposits are the youngest geological deposits that rest on older deposits or rocks referred to as bedrock. They generally comprise unconsolidated sediments such as gravels, sand, silt and clay. They may be present as relatively thin discontinuous patches or larger spreads.

### 2.3 Bedrock Geology

The bedrock geology (sometimes referred to as solid geology) is the term used for the main units of rocks that have formed the Earth over millions of years. They may be present at the surface or concealed beneath younger superficial deposits. Bedrock is classified as either igneous, metamorphic or sedimentary.

### 2.4 Geological Fault

A fracture in the rock along which movement takes place.

### 2.5 Underground Workings

Areas where coal or other minerals and rock has been mined, or is currently being mined under the surface. Historic mining may have been undertaken from bell pits, pillar and stall workings or longwall techniques.

### 2.6 Mine Entries

Refers to a mineshaft or adit which provides an opening to gain access to underground workings.

### 2.7 Brine Compensation District

Formed by the Cheshire Brine Pumping (Compensation for Subsidence) Act 1952 as a District within which a person can serve a notice on the Brine Board if they think their property has suffered damage resulting from subsidence caused by extraction of brine.

## 3 Hydrogeology and Hydrology

### 3.1 Controlled Water

Section 104 of the Water Resources Act 1991 defines Controlled Waters as all inland freshwaters, i.e. rivers, watercourses, lakes and ponds (other than public sewers or sewers or drains which drain into a public sewer), groundwater, coastal waters (extending landward from the limit of the highest tide or freshwater limit) and relevant territorial waters (extending seaward for three miles from the baseline from which the breadth of the territorial sea is measured).

### 3.2 Groundwater

Groundwater is all water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

### 3.3 Surface Water

Any inland freshwaters, coastal waters or relevant territorial waters i.e. water that is above the surface of the ground.

### 3.4 Discharge Consents

For England, discharge consents to Controlled Waters (surface water and groundwater) are authorised by the Environment Agency under the Environmental Permitting (England and Wales) Regulations 2010. In considering whether or not to grant consents the Environment Agency takes account of whether the point source discharges into the water environment has the potential to cause pollution relevant to quality standards and whether it will affect the appropriate uses of the water. These consents do not apply to discharges to sewers, since the sewerage undertaker regulates these.

Discharges for sewage effluent are exempt where they are 5m3/day or less to surface water or 2m3/day to ground. Exempt discharges are not required to be reported and as such they are not considered within our assessments.

### 3.5 Water Abstractions

The Environment Agency has a duty under the Water Resources Acts 1963 and 1991 to take action, when necessary, in order to conserve, re-distribute, or increase water resources in England, and to secure its proper use. They may also draw up provisions for determining acceptable flows or minimum volumes for inland waters. Those wishing to abstract water above a specified quantity must apply to the Agency for Abstraction Licences and adhere to the conditions that apply. Premises abstracting less than 20m3 water per day from watercourses and the ground can do so without the need of a licence and as such these locations are not recorded.

These records are held under Scottish legislation to protect the public water supply. These records therefore relate only to public water supplies.

### 3.6 Water Industry Act Referrals

The Environment Agency is given powers to regulate some discharges to public sewers or certain dangerous substances under the Water Industry Act 1991.

### 3.7 Aquifer Designations

An aquifer is a geological unit containing sufficient saturated permeable rock that will yield water. The following aquifer designations are consistent with the Water Framework Directive and reflect their importance in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems.

Unproductive Strata

Defined as rock layers or drift deposits with low permeability that has negligible significance for water supply or river base flow.

Principal Aquifer

Defined as rock layers 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. In most cases, principal aquifers are aquifers previously designated as major aquifer.

Secondary Aquifers

These include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. Secondary aquifers are subdivided into two types ('A' and 'B').

Secondary 'A' Aquifers

Defined as rock layers 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. In most cases, principal aquifers are aquifers previously designated as major aquifer.

Secondary 'B' Aquifers

Defined as predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

Secondary Undifferentiated

The Secondary Undifferentiated classification is assigned in cases where it has not been possible to attribute either category Secondary A or Secondary B to a rock type.

### 3.8 Groundwater Source Protection Zones

The Environment Agency has defined Source Protection Zones (SPZ) for 2000 groundwater sources such as wells, boreholes and springs used for public water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The closer the activity, the greater the risk. There are three main zones:

Inner Zone (Zone 1) – defined as the 50 day travel time from any point below the water table to the source. This zone has a minimum radius of 50m;

Outer Zone (Zone 2) – defined as a 400 day travel time from a point below the water table. The previous methodology gave an option to define SPZ2 as the minimum recharge area required to support 25% of the protected yield;

Total Catchment (Zone 3) – defined as the area around a source within which all groundwater recharge is presumed to be discharged at the source. In confined aquifers, the source catchment may be displaced some distance from the source. For heavily exploited aquifers, the final source catchment protection zone can be defined as the whole aquifer recharge area where the ratio of the groundwater abstraction to aquifer recharge is >0.75.

In the past, the Environment Agency has also applied a fourth zone of special interest:

Special Interest (Zone 4) – this represents a surface water catchment which drains into the aquifer feeding the groundwater supply.

### 3.9 Groundwater Vulnerability

The pollution hazard of an activity will be greater in certain hydrological, geological and soil situations than in others. Superficial aquifers are the most vulnerable to pollution due to their shallow water table and little or no protective cover. Bedrock aquifers can be equally vulnerable where drift deposits are absent and where the unsaturated zone is thin or fractured.

Activities in areas of unproductive strata do not represent a risk to groundwater resources and therefore are not assigned a groundwater vulnerability.

High

Areas likely to be characterised by high leaching soils and the absence of low permeability drift deposits.

Medium

Intermediate between high and low vulnerability.

Low

Areas likely to be characterised by low leaching potential soils and/or the presence of drift deposits characterised by low permeability.

### 3.10 Soil Leaching

The potential for soil leaching considers a range of soil properties such as moisture content, soil clay content and carbon content. There are three soil leaching classes:

High (H)

Soils of high leaching potential with little ability to attenuate diffuse soil pollutants and in which non-adsorbed diffuse source pollutants and liquid discharges have the potential to move rapidly to underlying strata or groundwater. Three subclasses are recognised:

H1 – soils that readily transmit liquid discharges because they are either shallow or susceptible to rapid flow;

H2 – deep, permeable, coarse-textured soils that readily transmit a wide range of pollutants because of their rapid drainage and low attenuation potential;

H3 – coarse-textured or moderately shallows soils that rapidly transmit non-adsorbed pollutants and liquid discharges, but which have some ability to attenuate adsorbed pollutants because of their clay or organic matter.

Intermediate (I)

Soils of intermediate leaching potential that have a moderate ability to attenuate diffuse source pollutants or in which it is possible that some non-adsorbed diffuse source pollutants and liquid discharges could penetrate the soil layer. Two subclasses are recognised:

I1 – soils that can potentially transmit a wide range of pollutants;

I2 – Soils that can potentially transmit a wide range of pollutants and liquid discharges but are unlikely to transmit absorbed pollutants.

Low (L)

Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal or they have a significant ability to attenuate diffuse source pollutants.

## 4 Flood Risk

### 4.1 National Planning Policy Framework (Flooding)

This relates to the National Planning Policy Framework and the associated Technical Guidance.

### 4.2 Flood Plain

A floodplain is the area that would naturally be affected by flooding if a river rises above its banks, or high tides and stormy seas cause flooding in coastal areas.

### 4.3 Flood Zones

Flood Zone 1

The area where flooding from rivers or sea is very unlikely as defined by the Environment Agency. There is less than 0.1% (1 in 1000) chance of flooding occurring each year.

Flood Zone 2

The area of medium probability of flooding as defined by the Environment Agency – a flood with an annual chance of occurring of between 1% (1 in 100) to 0.1% (1 in 1000) for river flooding and 0.5% (1 in 200) to 1% (1 in 1000) for coastal flooding.

Flood Zone 3A

The area of high probability of flooding as defined by the Environment Agency – a flood with an annual chance of occurring of 1% (1 in 100) or greater for river flooding and 0.5% (1 in 200) or greater for coastal flooding.

Flood Zone 3B

The boundary between 3a and 3b is a planning decision made by the Local Authority. This information is usually in the strategic flood risk assessment. This area is a functional floodplain as defined by the Environment Agency. It is an area which is designed to flood – a flood return period of 1 in 20 or less.

### 4.4 Flood Return Period

A return period is an estimate of the likelihood of an event occurring. Flood return periods are commonly expressed as either a ratio or a percentage, for example, a 1% or 1 in 100 year event, means there is a 1% (1 in 100) chance of flooding occurring each year.

### 4.5 Pluvial (Surface Water) Flooding

Pluvial flooding results from rainfall running over ground before entering a watercourse or sewer. It is usually associated with high intensity rainfall events (typically greater than 30mm per hour) but can also occur with lower intensity rainfall or melting snow where the ground is already saturated, frozen, developed (for example in an urban setting) or otherwise has low permeability.

### 4.6 Groundwater Flooding

Groundwater flooding is defined as the emergence of groundwater at the surface, rising up from the underlying rocks and tends to after long periods of sustained rainfall.

### 4.7 Flood Risk Rating

Low – The site is at little or no risk of flooding from any sources.

Low to Moderate – It is possible that flooding could arise and the presence of features such as watercourses, canals, flood defences or flood storage areas in the locality may suggest that the site could be at risk of flooding. Flood resilient materials may be required in the construction of properties.

Moderate - Information from existing datasets suggests that there are certain features which may present a risk of flooding to the site and its occupants. Appropriate measures to manage flood risk may be required in addition to the use of water resistant materials in the construction of properties.

Moderate to High - Information from existing datasets suggests that there are certain features which may present a significant risk to the site and its occupants. Flood defences may be required to reduce the risk of flooding and flood storage areas may be required.

High – There is a risk to life and property. This means that existing datasets reveal significant flood risk issues which will need to be addressed.

### 4.8 Flood Resistance

Flood resistance refers to products that may be permanent or temporary and are designed to stop water entering a property through existing openings (doors, windows, vents and pipes). Permanent measures do not need to be deployed, whilst temporary measures need to installed before flood water arrives.

### 4.9 Flood Resilience

Flood resilience measures are designed to reduce the amount of damage to a property when water enters a building. They will enable the clean-up to take place more easily without the need for major refurbishment.

## 5 Environmental Regulatory Information

### 5.1 Pollution Incidents

The Environment Agency and Natural Resource Wales have a duty to investigate pollution incidents reported to them by members of the public, emergency services, local authorities, government departments, other regulators, industry, and agency staff. Substantiated incidents are held on a public register of information and relate to specific events that fall within their responsibility given that they may have an environmental and/or operational impact.

Examples may include reports that may affect land, air, and water, fish kills, illegal abstraction, low river flows, speeding vessels, and flooding. Public register information is provided by regional offices.

Incidents are graded from category 1 (Major Incident) to category 4 (No Impact). An impact category must be assigned for each affected environmental media; air, land, and water. An impact level is assigned to a particular incident but is determined by the maximum severity affecting one of the three media.

### 5.2 Landfill

Sites accepting waste were not required to be licensed until the introduction of the Control of Pollution Act 1974 and landfilling prior to this is often unrecorded unless captured through planning records or on historic plans.

Information on landfill sites relates to open and closed site and is captured from a number of sources within the Landmark Envirocheck Report to include:

- A survey of active landfill sites conducted on behalf of the Department of Environment in 1973, which over 3,000 sites accepting waste prior to the Control of Pollution Act 1974, and would therefore not have been subject to any strict regulation or monitoring;
- Information sourced from individual Local Authorities that were able to provide information on sites operating prior to the introduction of the Control of Pollution Act 1974;
- Information from the British Geological Survey which includes outline plans, site descriptions, waste types and tipping histories;
- Consents for landfill sites issued by the Environment Agency under Section 64 of the Environmental Protection Act 1990 (Part 2), prescribed by Regulation 10 of SI No.1056 the Waste Management Licensing Regulations 1994 and the Environmental Permitting (England Wales) Regulations 2010; and
- Information sourced from consents that were issued by the Environment Agency and the Scottish Environment Protection Agency, under the Control of Pollution Act 1974 and Section 36 of the Environmental Protection Act 1990.

### 5.3 Environmental Permitting

The Environmental Permitting (England and Wales) Regulations 2010 (as amended) (EPR 2010) have been introduced over a number of years so that they now encompass licences that were previously held under the several sets of legislation. The Landmark Envirocheck Report provides information on open and closed sites under each of the following pieces of legislation:

- Integrated Pollution Controls (IPC) held under the former Environment Protection (Prescribed Processes and Substances) Regulations 1991;
- Records of Local Authority Integrated Pollution Prevention and Control (LAIPPC) and Integrated Pollution Prevention and Control (IPPC) were previously maintained under the Pollution Prevention and Control Act 1999, originally set up under the Environmental Protection Act 1990. LAIPPC continue to be regulated by the Local Authority and are referred to as PartA2 Installations and Part B Installations, whilst the IPPC continue to be regulated the Environment Agency and are referred to as Part A1 Installations.
- Registered Waste Transfer, Treatment and Disposal Sites were previously recorded under the Control of Pollution Act (COPA) 1974, Section 36 of the Environmental Protection Act (EPA) 1990 and the Environmental Permitting (England and Wales) Regulations 2007.
- All waste activities now fall within EPR 2010 under a number of waste exemptions, standard rules environmental permits and bespoke environmental permits.

### 5.4 Waste Exemptions

Waste exemptions allow the use, storage, disposal and treatment of specific wastes that only create a low risk of pollution, when the quantities of waste are limited and stored in a specific manner.

### 5.5 Standard Rules Environmental Permits

Standard Rules environmental permits allow low to medium risk waste storage, transfer and treatment activities to occur at specific locations and are issued where the Environment Agency does not need to make a site specific decision about whether the regulated activity can take place at a specific location.

### 5.6 Bespoke Environmental Permits

A Bespoke Environmental Permit is required where there are no exemptions or Standard Rules Environmental Permits available for the proposed activity. The Environment Agency makes a site specific assessment about the proposed regulated activity in relation to its environment to ensure waste and emissions do not have a detrimental effect.

## 6 Land Designations

### 6.1 Areas of Outstanding Natural Beauty (AONB)

The National Parks and Access to the Countryside Act 1949 as amended by the Countryside Act 1968, Wildlife and Countryside Act 1981 and Environment Act 1995, allowed for the designation of Areas of Outstanding Natural Beauty (AONB). The equivalent designations for Scotland are National Scenic Areas.

AONBs are landscapes of national conservation importance for their distinctive character and natural beauty. They are generally smaller than National Parks, and are owned by individuals e.g. farmers. Some are adjacent to National Parks and many include areas of Heritage Coast. Planning law protects development within them.

### 6.2 Sites of Special Scientific Interest

Sites of Special Scientific Interest (SSSI) have been designated under the Wildlife and Countryside Act 1981 Section 28 to protect areas of important flora, fauna, geological and/or physiographical features. They provide the basis for other national and international designations. Parties notified include site owner(s) and occupier(s), local planning authorities, water and sewerage companies, and the appropriate Secretary of State. The Land Registry also records these as local land changes.

The appropriate party must be consulted on developments, or notified of potentially damaging operations, which may affect an SSSI.

Most SSSIs are privately owned or managed. Others are owned or managed by public bodies such as the Forestry Commission, Ministry of Defence and the Crown Estate, or by the voluntary conservation movement. Some SSSIs are also designated as Special Protection Areas and Ramsar Sites.

### 6.3 RAMSAR Sites

Under the Convention on Wetlands of International Importance especially as Waterfowl Habitat, the Government is committed to designate 'Wetlands of International Importance'. The Convention was adopted in Ramsar, Iran in 1971 and ratified by the UK Government in 1976.

The purpose is to stem progressive encroachment on and loss of wetlands now and in the future. Aims include the conservation, management and wise use of migratory wildfowl stocks and to promote the conservation of wetlands.

Wetlands are areas of peat land, fen, marsh or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water.

### 6.4 Local Nature Reserves

These reserves are areas created by Local Authorities in conjunction with their appropriate national authority in the interest of conservation, amenity value and public enjoyment of the countryside. Some, but not all Local Nature Reserves (LNRs) are also designated SSSIs. They are controlled by bylaws.

### 6.5 National Nature Reserves

These reserves have been designated under the Wildlife and Countryside Act 1981 or the National Parks and Access to the Countryside Act 1949, Section 19, as areas of high national or international importance for nature conservation. They are designated by Natural England, Scottish Natural Heritage and the Countryside Council for Wales.

National Nature Reserves are Sites of Special Scientific Interest, and may have coastal frontage or be offshore islands.

### 6.6 Special Areas of Conservation

Special Areas of Conservation are lands designated under the ECC Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (92/43/EEC), commonly known as the Habitats and Species Directive. These sites are to be afforded absolute protection subject to 'imperative reasons of overriding public interest, including those of a social or economic nature.

### 6.7 Special Protection Areas

Special Protection Areas are classified under Article 4 of the EC Directive on the Conservation of Wild Birds 1979, commonly known as the Wild Birds Directive.

The purpose of Special Protection Areas is to safeguard the habitats of migratory and certain particularly threatened bird species. Together with Special Areas of Conservation, they constitute 'Natura 2000' areas for protection.

## 7 Hazardous Substances

### 7.1 Asbestos Containing Materials (ACM's)

Includes any of the following materials; crocidolite, amosite, chrysotile, fibrous actinolite, fibrous anthophyllite, fibrous tremolite and any mixture containing any of these materials.

### 7.2 Asbestos Surveys

Any reference to asbestos surveys is given the same meaning as that given in HSE Guidance Document HSG 264 entitled 'Asbestos: The Survey Guide'.

### 7.3 Control of Major Accident Hazard Sites

The Health and Safety Executive in conjunction with the Environment Agency and the Scottish Environment Protection Agency keeps records of those sites, which manufacture or store dangerous toxic or flammable chemicals (including petrochemicals, pharmaceuticals and agrochemicals) and explosives in excess of threshold quantities specified in the Control of Major Accident Hazards (COMAH) Regulations 2015. Sites are divided into upper and lower tier sites based on the type and quantities of substances being stored or manufactured.

The COMAH Regulations require emergency plans to be kept up to date and regularly tested.

### 7.4 Planning Hazardous Substance Consents

This data is collected, collated and geo-coded by Landmark. The records relate to consents granted under the Planning (Hazardous Substances) Act 1990 as amended, for England and Wales and the Planning (Hazardous Substances) (Scotland) Act 1997, in Scotland.

The regulations require a consent to be granted by the Local Authority for sites where the storage of certain hazardous substances is above the specified or controlled quantity.

## 8 Non-Native Invasive Plants

The Wildlife and Countryside Act 1981 (as amended) is the principal legislation which regulates the release of non-native species. Section 14(2) prohibits the release of certain invasive non-native plants into the wild in Great Britain; it is an offence under Section 14(2) to "plant or otherwise cause to grow in the wild" any plants listed on Part II of Schedule 9. The most common plant species found on brownfield and urban sites include Japanese Knotweed, Giant Hogweed and Himalayan Balsam.

Japanese Knotweed

Japanese knotweed is a strong-growing, clump-forming perennial, with tall, dense stems. Stem growth is renewed each year from the existing crown of the rhizomes which grows underground. Japanese Knotweed is a particular problem as not only does is out compete native species, it also has the potential to damage buildings, pavements, roads, etc.

Himalayan Balsam

This is an non-native invasive terrestrial plant species that has spread to most parts of UK, particularly along the banks of watercourse and in damp woodland. Individual plants reach 2m in height and its rapid growth shades out most of our native species.

Giant Hogweed

Giant Hogweed is part of the same family as Cow Parsley and Hogweed, but is significantly larger in size extending up to 4m in height. The sap of Giant Hogweed contains toxic chemicals known as furanocoumarins, which when contact with the skin, and in the presence of sunlight cause a condition called phyto-photodermatitis (reddening of the skin, burns and blistering).

## 9 Environmental Risk Assessment

### 9.1 Contamination

This is taken to mean specifically, the presence of toxic, noxious or polluting substances in, on or under land.

### 9.2 Contaminated Land

Any reference to contaminated land should be construed in the statutory sense.

Land is defined as being contaminated land under Section 78 of the Environmental Protection Act 1990 where any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that:

Significant harm is being caused or there is a significant possibility of such harm being caused; or

Significant pollution of controlled waters is being, or is likely to be caused.

### 9.3 Conceptual Site Model (CSM)

The conceptual site model is the initial phase of the environmental risk assessment process which identifies the all potential sources of contamination, the receptors capable of being harmed and the pathways capable of exposing a receptor to the contaminant source. Only where there are complete source-pathway-receptor linkages is there considered to be a potential risk.

### 9.4 Environmental Risk

Any reference to environmental risk shall be taken to mean:

High Risk

Those properties where environmental risks have been identified that will affect land value, business interruption, lead to regulatory intervention and/or result in material financial expenditure by the client in the short term.

Moderate Risk

Those properties where environmental risks have been identified that have the potential to affect land value, lead to regulatory intervention and/or result in material financial expenditure by the client in the medium to long term.

Low Risk

Those properties where no environmental risks have been identified that have the potential to affect land value, lead to regulatory intervention and/or result in material financial expenditure by the client.

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# Environmental Reservations

### Composite Panels and Insurance

We will not test any panels within the property to see whether there are any polystyrene insulated composite panels. The presence of such panels may result in the property being uninsurable, which would have an adverse impact on value.

### Enquiries

Where necessary, any enquiries (verbal and written) undertaken by GVA of local authorities and statutory undertakers are made in respect of environmental issues. Local searches are not undertaken and no responsibility is accepted for any inaccurate information provided.

### Environmental Liability

Any reference to environmental liability should be taken to mean a combination of the following types of liabilities:

Actual Liabilities

These are known present obligations of the business arising from past or future events, the settlement of which will require future expenditure.

These will include costs associated with regulatory compliance e. g. known monitoring, decommissioning requirements, fines, damages, and surrender provisions imposed by statute and/or contract.

Latent and Contingent Liabilities

These are unknown obligations arising from past or future events that exist, but where the outcome will only be known following the occurrence or non-occurrence of future events that are outside the control of the business.

These might include, unknown costs associated with site remediation, decommissioning and the possibility of unforeseen future events such as a pollution incident.

### Ground Conditions

Any discussion of ground conditions in this report have been based on a review of existing documentary information prepared by British Geological Survey, the Coal Authority and/or other parties. GVA accepts no responsibility for the accuracy or completeness of information prepared by third parties.

### Information

All information supplied by the Client, the Client's staff and professional advisers, local authorities, other statutory bodies, investigation agencies and other stated sources is accepted as being correct unless otherwise specified.

### Legal issues

Any interpretation of leases and other legal documents and legal assumptions is given in our capacity as Property Consultants (including Chartered Surveyors and Chartered Town Planners) and must be verified by a suitability qualified lawyer if it is to be relied upon. No responsibility or liability is accepted for the true interpretation of the legal position of the client or other parties.

Where opinions expressed in this report are based on current available guidelines and legislation, no liability can be accepted by GVA for the effects of any future changes to such guidelines and legislation.

### Plans

Any plans supplied are for identification purposes only unless otherwise stated. The Report assumes site boundaries are as indicated to us. The reproduction of Ordnance Survey sheets has been sanctioned by the Controller of Her Majesty's Stationery Office, Crown Copyright reserved.

### Property Condition

Our inspection of a property does not constitute a structural survey. When preparing our report we have regard to apparent defects and wants of repair and take into account the age of the property. We do not however carry out a detailed search for defects which is undertaken as part of the structural survey neither do we necessarily set out the various defects when making the report. We do not inspect woodwork or other parts of the structure which are covered, unexposed or inaccessible. We do not arrange for any investigation to be carried out to determine whether or not high alumina cement concrete or calcium chloride additive or any other deleterious materials or permanent woodwool shuttering or composite panelling has been used in the construction.

Unless so instructed we do not arrange for any investigations to be carried out to determine whether or not any deleterious or hazardous material or techniques have been used in the construction of the property or has since been incorporated and the services are not tested.

We are therefore unable to report that the property is free from defect in these respects.

For reporting purposes we assume unless otherwise stated that the property (including associated plant and machinery, fixtures and fittings) is in serviceable order and will remain so for the foreseeable future. It will be assumed that the building(s) is/are in good repair, except for defects specifically noted.

### Services Installations

Unless otherwise instructed, we do not inspect or test any of the water, mechanical, heating, electrical or drainage installations. Where appropriate we will make

recommendations in relation to the execution of specialist tests to establish the condition. The implementation of such work would normally involve an additional fee.

**Site areas**

Site areas are normally computed from plans or the Ordnance Survey and not from a physical site survey. They are approximate unless otherwise indicated.

**Tenure**

Title Deeds and Leases are not inspected (unless specifically stated) and, unless we are informed to the contrary, it is assumed that a property is free of any onerous covenants, easements, other restrictions or liabilities including mortgages, grants and capital allowances that may affect the value.

**Warranties**

The client warrants and represents that, to the best of its knowledge, information and belief, the information supplied by and on its behalf to GVA is true and accurate and that it will advise and instruct its third party advisers to advise GVA in the event that it and/they receive notice that any such information is either misleading or inaccurate.

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