

Pam Brown Associates





DESK STUDY/SITE CONDITION REPORT

**HALES SAWMILL, WESTERN WAY
MARKET DRAYTON
SHROPSHIRE
TF9 3UY**

January 2015

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EXECUTIVE SUMMARY

Address:
Western Way
Market Drayton
Shropshire TF9 3UY

Environmental Setting	
Published Geology and Site Investigation	<p>BGS and Groundsure record the site to be underlain by solid strata from the Bollin Mudstone Member overlain by Glacial Till.</p> <p>A site investigation undertaken by Mouchel confirmed the presence of clays with pockets of sand, indicative of Glacial deposits.</p> <p>There are no faults recorded on site or within 1km of the boundary.</p>
Radon	<p>The site is not within a radon affected area, as less than 1% of homes within the vicinity of the site are affected by radon (BGS). According to Building Research Establishment (2007) 'Radon: Guidance on Protective Measures for New Dwellings', no radon protective measures are required.</p>
Hydrogeology	<p>The Bollin Mudstone Member has been classified by the EA as a Secondary B aquifer and the Superficial Deposits are classified as Unproductive strata.</p> <p>There are two (2No.) groundwater abstraction consents recorded within 1km of the site, relating to potable water supply and general use, the licence for potable supply is recorded as having ended in 2008.</p> <p>The site is recorded as being within a Zone 3 Groundwater Source Protection Zone (SPZ) associated with two (2No.) potable abstraction wells located 1.6km southeast of the site.</p>
Hydrology	<p>Two (2No.) 'ordinary' watercourses are recorded to the north/west and south of the site within 250m and 400m respectively. The stream to the south flows to the west and confluences with the River Duckow.</p>
Nitrate Vulnerable Zone	<p>The site is located within a Nitrate Vulnerable Zone.</p>
Flood Risk	<p>The site is located within Flood Zone 1, and is at 'low risk' from surface water and groundwater flooding.</p>
Site History	<p>Historically, the site has been agricultural land, used for grazing cattle until its recent redevelopment and construction of a proposed treatment building. The treatment building forms part of a sawmill complex, constructed during 2014/15 which is currently awaiting commencement of operation. A small number of potentially contaminative activities have historically been present in the vicinity of the site, including branch railway lines, dairy, livestock market and builders yard.</p>
Environmental Sensitivity	<p>Environmental sensitivity with respect to human receptors is regarded 'low' due to location of the site within a rural/commercial setting. The sensitivity with regard to surface waters is considered 'high' due to the site's proximity to several watercourses, and linkage via the newly constructed drainage system. The site is located above a Secondary B aquifer, but within a Zone 3 groundwater SPZ for active potable abstractions. Groundwater sensitivity is therefore considered to be 'moderately high'. Sensitivity with regard to ecological systems is considered 'low/moderate' due to the recorded presence of protected species.</p>



Environmental Setting	
Proposed Redevelopment	<p>Construction of a Timber Treatment building to form part of a Sawmill operation. The timber treatment process is fully contained and a drying area bunded to prevent 'escape' of the preservative into the environment, in particular via the drainage system. The development is being constructed over 3 Phases, Phase 1 is complete and includes the construction of a Timber Treatment building (the site), offices, sawmill, store shop, drying kiln, yard and car parking areas. A new positive drainage system has also been constructed which drains the surface water from hardstanding areas (car park, access roads, service yards) to swale features located on the main sawmill site, eventually discharging to the drainage associated with Western Way. The roof drainage will be collected within rainwater harvesting tanks for subsequent use on site.</p>
Risk Assessment	<p>A preliminary assessment of risk was undertaken using qualitative risk evaluation methods in accordance with EA document CLR11 'Model Procedures for the Management of Land Contamination', and CIRIA document C552 (2001) 'Contaminated land Risk Assessment: A guide to good practice'.</p> <p>Historically, the site has not been associated with potentially contaminative activities. It has been confirmed anecdotally that virgin soil is present on site and the background soil chemistry indicates the concentrations of contaminants are low, with generic guideline values for residential land use. The site is therefore considered to currently be uncontaminated</p> <p>It has been assessed (based on available data) that 'minor' harm could arise from contamination from on-site and off-site activities to sensitive receptors on-site. A 'minor' level of harm is also anticipated for current on-site and off-site activities, since any such harm is likely to be controlled and/or managed under the current statutory framework.</p> <p>It is considered 'unlikely' that a pollution pathway could be established with construction workers, site users, and groundwaters due to the presence of hardstanding across the site associated with the constructed development. There is considered a low likelihood that a pathway could be established to surface waters due to the newly constructed drainage system which has pollution control measures incorporated.</p> <p>Based on the comparison of the magnitude of the harm and the likelihood that a contaminant pathway would be established, it must be assumed that the overall environmental risk is currently 'Low /Very Low'.</p>
Conclusions/ Recommendations	<p>The desk study/site condition record has assessed the current site condition, based on former greenfield site redeveloped with a timber treatment building which is non-operational as uncontaminated.</p> <p>This is the baseline condition against which the final site condition should be assessed.</p>



1.0 INTRODUCTION

Pam Brown Associates Ltd (PBA) have been appointed by Hales Sawmills Ltd to prepare a Desk Study/Site Condition Report for a site located off Western Way, Market Drayton TF9 3UY. It is understood this report is to support the application for an A2 permit under IPPC regulations and will provide evidence of the site condition prior to commencement of the proposed timber treatment activities, to be regulated under an A2 Permit.

The document has been prepared with the benefit of the following reports and documents:

- Mouchel (2012) Hales Sawmills, Western Way Market Drayton, Flood Risk Assessment.
- Surface Water Management Plan
- Mouchel (2012) DWG No. 1044364-P-500 Rev D Drainage Details for Planning Application.
- Clear Environmental Consultants Ltd. (2012) Great Crested Newt Survey Report. CL1170/005/001

The characterisation of the site has been based upon the procedures identified within the Environment Agency Contaminated Land Report 11 'Model Procedures for the Management of Land Contamination'. These procedures relate to 'past' contamination, and assume that legislative controls such as Pollution Prevention and Control authorisations control current potentially polluting activities. Emphasis is therefore upon historic use. The overall approach in dealing with past land contamination is one of risk management.

The information obtained has been used to evaluate the environmental sensitivity (vulnerability) of aquatic, human and ecological systems in the site's vicinity. Relevant information is then used as part of the PBA qualitative risk assessment process, with the aim of identifying potential pollutant pathways and associated risks. This is undertaken in accordance with CIRIA C552 (2001)¹ in order to determine whether significant harm is being caused or there is a significant possibility of such harm being caused as outlined in EPA1990: Part IIA² and further described in DEFRA (2006, 2012) statutory guidance^{3,4}. The classification of risk is obtained by combining the severity of the harm likely to arise from a given on/off site activity and the probability that harm may arise to a particular sensitive receptor.

EA (2013) H5 Environmental Permitting Regulations, Guidance for Site Condition Reports Ver. 3.0 and WPLA Site Condition Report Guidance has also been referenced in preparation of this document.

The conclusions reached within the report are restricted to those that can be determined from the available data and may be subject to amendment in the light of additional information becoming available. No responsibility will be accepted where a third party uses this report, either in part or in its entirety, unless formally re-assigned.

¹ Rudland, D., Lancefield, R.M., Mayel, P.N. (2001) "Contaminated land Risk Assessment: A guide to good practice. CIRIA C552. UK. pp.80.

² Environmental Protection Act 1990: Part IIA. Contaminated Land. Section 78A(ii).

³ Department of Environment, Food and Rural Affairs (2006) DEFRA Circular 01/2006 – Environmental Protection Act 1990: Part2A. September 2006. U.K.

⁴ Department of Environment, Food and Rural Affairs (2012) Environmental Protection Act 1990: Part2A – Contaminated Land Statutory Guidance. April 2012. U.K.



2.0 SITE OVERVIEW

2.1 SITE LOCATION AND DESCRIPTION

The site is located approximately 1km north of Market Drayton town centre at the edge of the urban area. An extract of the 1:50,000 Ordnance Survey map showing the general location of the site is included as Figure 1.

The approximate National Grid reference for the Site is 367521E, 335646N. An aerial photograph of the site, dated May 2012, is presented below:



The Site comprises the footprint of a proposed treatment building which will form part of a larger 'Sawmills' complex. The Site is rectangular in shape, and occupies an area of approximately 0.13Ha. The most recent use of the site has been as agricultural land (cattle grazing).

The entrance to the site is from Western Way, which runs along the former course of a dismantled railway. Western Way was constructed to allow access to the industrial units west of the site, and is itself accessed from the Gingerbread Man Roundabout at the junction of A53 'Newcastle Road' and A529 located approximately 0.5km to the south of the site.

The site is bound by the Shropshire Union Canal to the east, and by the remainder of the recently completed Sawmill site to the north and west. The area to the south of the site is currently occupied by undeveloped agricultural land. A livestock market, dairy and builders merchant are located to the west of the site (approximately 200m) on the opposite side of Western Way and to the east beyond the canal is Brownhills Farm.

A copy of the former site plan is presented as Figure 2.



2.2 PROPOSED DEVELOPMENT

The Site comprises the footprint of a recently constructed building which forms part of the sawmill complex and has not yet been commissioned. The building is to be the location of timber treatment activities. The treatment building will comprise a fully secured treatment area with a small office attached to an open storage shed where the treated timber will be stored to dry. The storage area will be set 50mm below the surrounding external areas, with two (2No.) ramped access points from the western elevation. The building is to be fully bunded. The Safety Data Sheet for the preservative, Tanalith E 8000, which will be the principle treatment agent, is included as Appendix 1.

Full planning permission has been granted under application No:12/01321/FUL. A drawing showing the current/proposed site layout is presented as Figure 3.

The site forms part of the larger Sawmill complex to the north and west of the site which comprises:

- A workshop
- Sawmill
- Drying kiln
- Store
- Shop
- Display area
- Staff parking and concrete yard

The site will be constructed in 3 Phases, Phase 1 has recently been constructed and will shortly commence operation, a further two phases are planned which comprise the construction of additional yard areas with associated drainage (see Appendix 2).

In order to prepare the formation levels a volume of materials was cut and removed from site. The only imported materials were used for construction and sourced mainly from Breedon Aggregates and Leaton Quarry, Telford.

2.2.1 Drainage Strategy

The FRA prepared for the site by Mouchel assessed the soil and geological conditions, concluding that the site is unsuitable for SUDS drainage due to its relative impermeability. The external areas included in the development proposals are to comprise concrete hardstanding. The proposed drainage strategy for the site is for the collection of surface waters from roads and pavement areas via two (2No.) slot drains which will transfer the water to short lengths of swale located between the main site and the existing toe of the embankment of Western Way. The waters will subsequently pass into an attenuation pond located at the southwestern corner of the sawmill site. The outfall of the drainage system for Phase 1 of the development is into the stream at the southern end of Western Way, using the existing outfall previously constructed for the outfall of the highway drainage system, which will be upgraded to reflect the increased catchment area.

The roof waters will be captured and stored within a rainwater harvesting tank, the water will be used within the timber treatment process and also as flush water for toilet facilities.



The overland flood route on site has been designed to reflect that of the slot drains, and drain to the west toward the swales. The treatment building is located to the east on land at a higher level to the remainder of the site and should therefore not be at risk of surface water from the site flowing into the building and becoming contaminated with preservatives.

The swales and pond are intended to provide initial treatment of runoff water, with low-velocities and use of biological treatment systems. The drainage will incorporate facilities to isolate runoff from each section of channel drain in the event of accidental spillage.

The proposed site drainage is shown in Appendix 2.



2.3 ENVIRONMENTAL SETTING

A review of the available physical and environmental information relating to the site has been undertaken including mapped references and extracts from GroundSure's 'GeoInsight' and 'EnviroInsight' environmental databases (Appendices 3 and 4). A summary of the environmental setting and sensitivity of the site is provided in Table 1 below:

Table 1. Environmental Site Setting

Physical Characteristics	
Regional Topography	The site is located toward the base of a valley associated with a tributary of the River Bucklow which is located to the south of the site. The land gradually rises to the northeast and falls to the west toward the River Bucklow.
Geology	<p>BGS and Groundsure record superficial deposits on site and in the surrounding area as Till, Devensian; clay with sands and gravels. This is underlain by solid strata from the Bollin Mudstone Member; reddish-brown and greenish-grey mudstone with siltstones. Helsby Sandstone Formation is recorded to outcrop approximately 150m southeast of the site.</p> <p>Previous site investigations undertaken by Mouchel as part of a Flood Risk Assessment recorded near surface ground conditions comprising clay, with pockets of sand consistent with glacial deposits.</p> <p>There are no faults recorded on site or within 1km of the boundary.</p> <p>The site is not recorded by the BGS to be within an area affected by underground coal mining, or non coal mining. A coal wharf was recorded approximately 900m southwest of the site in 1938.</p> <p>Numerous historical surface ground workings are recorded within the vicinity of the site which relates to cuttings, the canal and several ponds, including those located on the main sawmills site to the west.</p> <p>Current ground workings are recorded and relate to pits associated with the extraction of clay and shale located between 500m and 1.0km from the site, however all are noted to have ceased.</p> <p>Risks identified in association with geological hazards at the site include:</p> <ul style="list-style-type: none"> • Very low risk from collapsible ground stability hazards • Negligible risk from compressible ground stability hazards • Negligible risk ground dissolution stability hazards • Very low risk from landslide ground stability hazards • Very low risk from running sand ground stability hazards • Very low risk from shrinking and swelling clay ground stability hazards
Soils	<p>Background estimated soil chemistry for the site and the main sawmill site is:</p> <p>Arsenic (As) <15 mg/kg Cadmium (Cd) <1.8 mg/kg Chromium (Cr) 60 - 90 mg/kg Nickel (Ni) 15 - 30 mg/kg Lead (Pb) <100 mg/kg</p> <p>All concentrations are within generic residential guideline values.</p>



Physical Characteristics	
Radon	According to Health Protection Agency (HPA), the site is not located within a radon affected area, as less than 1% of homes within the vicinity of the site are affected by radon. According to Building Research Establishment publication BR211 (2007) 'Radon: Guidance on Protective Measures for New Dwellings', no radon protective measures are required.
Hydrogeology	<p>The Bollin Mudstone Member has been classified by the EA as a Secondary B aquifer, which comprise lower permeability layers which may store/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.</p> <p>The Superficial Deposits underlying the site are classified as Unproductive. These are rock layers or drift deposits characterised by generally low permeability that have negligible significance for water supply or river base flow.</p> <p>The Helsby Sandstone 150m southeast is recorded as a Principal aquifer, units of high permeability which usually provide a high level of water storage and may support water supply/river base flow on a strategic scale.</p>
Groundwater Source Protection Zones	<p>The southern section of the site lies within Zone 3 of a Groundwater Source Protection zone (SPZ) – Total Catchment to abstraction wells approximately 1.6km to the southeast at Shiffords Bridge for potable water supply boreholes 1 and 2.</p> <p>The nearest current abstraction wells are located approximately 850m to the north at Bretton Moss Farm the abstracted water is for process/general use.</p>
Surface Water Hydrology	<p>The nearest water feature is the Shropshire Union Canal at the eastern site boundary. The EA formerly used River General Quality Assessment criteria to determine river water quality. In 2009 the Canal was assigned a Grade of E for biological quality (poor) and A (very good) for chemical quality between the bridge near Park Heath to Market Drayton approximately 1.3km southeast of the site.</p> <p>The watercourses to the north/west and south of the site, (tributaries of the River Bucklow) are classed as Tertiary Rivers (upper reaches) and Secondary Rivers as they pass the site at distances of between 250m (north) and 400m (south) respectively. The northern watercourse flows to the west, to the rear of the existing industrial properties on Western Way before passing beneath Western Way and confluence with the watercourse to the south (River Duckow).</p> <p>The site lies outside the EA surface water safe guard zone, which are designated areas in which the use of certain substances must be carefully managed to prevent the pollution of raw water sources that are used to provide drinking water.</p>



Physical Characteristics	
Surface Water Hydrology	The site has no positive drainage system and currently drains through infiltration/ overland flow. The nearest drainage infrastructure is located on Western Way for road drainage. This system discharges into the watercourse to the south via an attenuation basin.
Flood Risk	<p>The site is located within Flood Zone 1; classified as having a 0.1% or 1:1000 annual chance of flooding – very low risk.</p> <p>Shropshire Council records the site to be within an area where SUDS system is unlikely to be applicable, due to the low permeability of the soils. Attenuation would likely be required due to slow dissipation of waters.</p> <p>Shropshire Council website does not record the site to be at risk of surface water flooding, although the livestock market to the southwest is identified to potentially be at risk.</p> <p>BGS record the site as having the potential for groundwater flooding within the underlying superficial deposits. Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded. The BGS are 'moderately' confident in this assessment.</p> <p>However the geology is recorded as exhibiting relatively low permeability and the superficial deposits are classed as unproductive aquifer. The site specific data would indicate that there is limited risk of groundwater flooding at the site.</p>
Nitrate Vulnerable Zone	The site is located within a Nitrate Vulnerable Zone.
Designated Ecologically Significant Areas	There are no sites with ecological or geological designations of local, national or international importance within 2.0km of the site, and no greenbelt designations. However protected species have been recorded on site, (see Section 2.4).



2.4 ENVIRONMENTAL SENSITIVITY

Environmental sensitivity provides an indication of the vulnerability of aquatic, human and ecological environments in the vicinity of the site. Groundwater, surface water and ecological sensitivity has been determined based upon NHBC (2008) 'Site sensitivity assessment' in R&D Publication 66. Human sensitivity is based upon the current land use within a 250m radius.

The most significant environmental sensitivity is in terms of surface water, the site is adjacent the Shropshire Union Canal and within 250m of two ordinary watercourses, of which one becomes a 'Main River' approximately 650m to the southwest. Currently there is no water quality information available for these watercourses. Although the site geology at the surface is of low permeability, pollutants could be transmitted by overland flow, rather than base flow from the aquifer. The proposed site drainage system links the site to the surface watercourse to the south via the existing highways drainage for Western Way. The site would be classed as 'high' sensitivity in terms of surface water receptors.

The superficial deposits at the site are classified as Unproductive, characterised by low permeability, overlying mudstone classed as a Secondary B aquifer. The southern area of the site, however, lies within the outer limits of a Zone 3 groundwater Source Protection Zone for potable water supplies. The sensitivity in terms of groundwater is therefore classified as M1, 'moderately high'; *'A recognised major or minor aquifer, moderately vulnerable, probably in use (either for direct abstraction, or to provide base flow to a sensitive watercourse). The unit may be within a formal protection zone or catchment where abstractions are authorised for potable or other high quality uses. Minor, short-term releases of contaminants may be tolerable.'*

A search of the Groundsure environmental database (included in Appendices 3 and 4) has not identified any designated ecologically sensitive sites within 2.0km. However ecological surveys undertaken have identified a medium sized population of great crested newts (GCN) within one of the ponds on the sawmill site, and bats were recorded to use the site for foraging. The mitigation proposals for the GCN included the creation of compensatory habitat, trapping and exclusion of the GCN from site with post relocation population surveys. The proposed relocation area was to the north of the development. A tree/grassed corridor will be maintained along the canal (adjacent the treatment building) to provide a link for the GCN allowing them to use a pond to the south of the site, where they had previously been recorded. A permanent fence will be created between the corridor and the site to prevent GCN accessing the site in future. The sensitivity with regard to ecological receptors is therefore considered to be low/moderate' due to the protected species populations.

Human sensitivity is assessed as 'low' due to the location of the site within a commercial/agricultural area with low population density.



2.5 REGULATORY LICENCES

The 'GeoInsight' and 'EnvirolInsight' databases (Appendices 3 and 4) have been reviewed to identify 'active' potentially polluting activities and enforcement mechanisms associated with the site and the surrounding area. The most relevant findings are discussed below.

Table 2. Regulatory Mechanisms

Licenses	Name	Description	Location	Comments
No environmental permits are currently recorded within 500m of the site.				
Current Discharge Consents (within 500m)	No current discharge consents recorded. All records identified as revoked and issued to Bretton sewage treatment works for treated effluent, approximately 450m northeast of the site.			
Water Abstractions (within 1.0km)	Borehole at Maer Lane, Market Drayton	Potable Water supply	695m S	Start date 26.03.1998 End date 26.03.2008
	Bretton Moss Farm, Market Drayton	General Use	850m N	Start date 03.03.1966

Other abstractions recorded in excess of 1km are identified within the Groundsure reports.

No fuel stations recorded within 500m of the site.

Three (3No.) pollution incidents have been recorded on the National Incidents Recording System, List 2, within 250m of the site since 2001. All are located to the north/northeast on land likely to belong to Brownhills Farm. The pollutants were recorded as slurry/diluted slurry and demolition and construction waste. The incidents were all characterised as Category 3 (Minor Impact) with respect to water and land compartments and Category 4 (No Impact) to air.

Table 3. Waste Management Facilities within 1km

Landfill Site	Name	Description	Location	Comments
Local Authority Landfills (within 1km)	-	Refuse Tip	813m E	Date of record is 1964

Potentially contaminative uses active on site:

- None identified

Potentially contaminative uses active within 250m of the site include:

- Builder's Yard
- Dairy
- Livestock Market



3.0 REGRESSIVE MAP ANALYSIS

A series of superseded Ordnance Survey Maps, covering the period **1879** to **2014**, have been reviewed to determine the development history of the site and identify any relevant activities that took place in the vicinity (Appendices 5 and 6). The maps have been summarised below:

Table 4. Historic Use of the Site and Surrounding Area

Date	The Site	Surrounding Area
1879	The site and the main sawmill area formed part of undeveloped farmland. Three ponds are recorded to the west of the site on what is currently the main sawmill complex.	The Shropshire Union Canal was recorded adjacent the eastern site boundary. The Great Western Railway, Nantwich and Market Drayton branch line was recorded to the west describing the current route of Western Way. The Stoke, Silverdale, Market Drayton branch line was recorded approximately 100m southeast of the site. The site was within an agricultural setting; Brownhills Farm was noted approximately 120m northeast. The Sych Farm buildings, to which the site belonged, were located 500m southwest.
1899 - 1900	No changes of note.	A new pond was recorded approximately 180m south of the site.
1924-25	No changes of note.	No changes of note.
1949	No changes of note.	No changes of note.
1968	No changes of note.	No changes of note.
1977	No changes of note.	The branch railways to the west and south of the site were shown to be dismantled.
1994	No changes of note.	A livestock market was recorded approximately 300m southwest of the site.
2002	No changes of note.	The A53 had been constructed approximately 500m south of the site and a new roundabout constructed at the junction with the A529 Adderley Road, Sych Farm buildings remained. The urban area of Market Drayton extended to the A53 and new works buildings were recorded south of the A53.
2010	No changes of note.	The dairy had been constructed adjacent the livestock market off Western Way which had been constructed along the line of the dismantled railway.
2014	No changes of note recorded on the mapping. The sawmill complex and treatment building were completed during January 2015.	The builder's yard had been developed off Western Way.



4.0 CONCEPTUAL SITE MODEL

For the assessment of land contamination, a Conceptual Site Model (CSM) is developed to identify the key sources of contamination, potential migration and exposure pathways and sensitive receptors which could be adversely affected. The CSM takes into account the hydrogeological conditions at the site and within this context aims to evaluate the significance of each pollutant pathway in accordance with Part IIA Environmental Protection Act 1990 (as amended 2012).

The CSM is based on the site as greenfield with the recent construction of a currently non-operational sawmill timber treatment building.

4.1 HAZARD IDENTIFICATION OF CONTAMINANTS AND SOURCES

According to DEFRA (2012)⁴, a contaminant is “a substance which is in, on or under the land and has the potential to cause significant harm to a relevant receptor, or to cause significant pollution to controlled waters”. This section lists the potential contaminants which may have arisen in soil and aquatic media as a result of historic and current on and off-site activities. The hazards are assessed according to the magnitude of their potential consequences (severity) when reaching a receptor, as described in CIRIA C552 report (2001)¹. This is known as environmental harm and can be classified as minor, mild, medium or severe. These classifications are defined in Appendix 7.

4.1.1 Historical: On/Off-Site

On Site - The earliest maps show the site as agricultural land with small ponds located to the west on the main sawmills site. The available information suggests the soils on site are virgin with no evidence of contamination.

Off Site -

- Brownhills Farm was located to the east of the site beyond the Canal
- A branch line of the GWR was located approximately 200m to the west at the main sawmills site boundary; a second branch line was located 100m to the south.
- A livestock Market, dairy and builder's yard were located approximately 275m from the early 1990s/2010s

Based on the limited contaminative potential for known on-site uses, and the distance to off-site potentially contaminative uses it is considered that **minor** harm could arise to sensitive receptors on-site from contamination originating from historic on and off-site activities.



4.1.2 Current: On/Off Site

The site until recently comprised grazing land and currently comprises the newly constructed timber treatment building forming part of the sawmills development which has yet to become operational.

It is anticipated that the harm arising from the current site use is **minor**, on the basis that harm likely to arise has been addressed in accordance with CLR11 (2004) 'Model Procedures for the Management of Land Contamination'⁵, and as part of the Environmental Permitting Process – A2 Permit.

There are limited potentially contaminative active trades within 250m of the site; livestock market, dairy and builder's yard, however based on the findings to date and on the controls placed by current regulations, it is regarded the harm which may arise from these activities is likely to be **minor**.

4.2 PATHWAYS

The possible routes or means by, or through which, sensitive receptors could be exposed to contaminants on site, are listed below:

- Ingestion of contaminated soils / dust / water
- Inhalation of contaminated soil particles / dust / vapours
- Dermal contact with contaminated soil / dust / water
- Pollution of controlled waters via infiltration through surface soils
- Lateral migration of pollutants via groundwater, overland flow and drainage system.

⁵ EA, DEFRA (2004) Model Procedures for the Management of Land Contamination. Contaminated Land Report 11 (CLR11). UK.



4.3 RECEPTOR IDENTIFICATION

For the purpose of CSM development, a receptor is considered to be any living organism or group of organisms, ecosystems, or property which could be harmed by a contaminant, as well as any controlled waters which are being or could be polluted by a contaminant. Further details on receptor types can be found in Tables 1 and 2, of the DEFRA (2012) Contaminated Land Statutory Guidance⁴.

The potential receptors which could be affected by on site contaminants, as well as the likelihood of the pollutant linkage being completed (receptors being affected by the contaminants on site) are indicated in Table 5. This assessment is based on the site being grazing land; the development has only recently been constructed and is non-operational.

Table 5. Potential Sensitive Receptors and Likelihood of Exposure

Pathway	Receptor	Possible linkage	Likelihood ^a
Ingestion of contaminated soil / dust	Site Users	Dust generation and consumption.	Unlikely –The site is also currently occupied by concrete hardstanding.
	Adjacent Users		
	Maintenance/ Construction Workers	Dust generated and contact with contaminated materials during site redevelopment works.	Unlikely –The site is also currently occupied by concrete hardstanding.
Inhalation of contaminated dust	Site Users	Dust generation and inhalation.	Unlikely –The site is also currently occupied by concrete hardstanding.
	Adjacent Users		
	Maintenance/ Construction Workers	Dust generation and inhalation during site redevelopment works.	Unlikely –The site is also currently occupied by concrete hardstanding.
Dermal contact with contaminated soils	Site users	Direct contact with contaminated soil, if present in the near surface.	Unlikely –The site is also currently occupied by concrete hardstanding.
	Maintenance/ Construction workers		Unlikely –The site is also currently occupied by concrete hardstanding.
Migration of pollutants via groundwater or overland flow	Secondary B aquifer	Lateral and vertical migration through aquifer strata.	Unlikely–The site is underlain by low permeability Till deposits.
	Off-site pond and Ordinary watercourse	Surface water runoff from current site.	Low likelihood –Pollution control measures have been installed within the drainage system.
		Lateral migration of groundwater	Unlikely – superficial deposits designated unproductive strata, generally impermeable with limited lateral flow.

^a - Likelihood of Exposure as outlined in Appendix 7.



4.4 RISK ASSESSMENT

Under the terms of the Environment Act 1995 a plausible pollutant linkage must exist to link the source to the receptors in order for an environmental risk to exist. Once these have been identified the likelihood and severity of each pollutant linkage are considered such that the scenarios of most concern can be addressed. A preliminary assessment of risk is then undertaken using a risk evaluation method, based on an EA/CIRIA scoring system^{1,6,7}, which aims to categorise the significance of risk in terms of the probability of the receptors being exposed to a given hazard (i.e. high likelihood, likely, low likelihood, unlikely) and the magnitude / severity of the environmental harm resulting from the hazard.

The risk categories are then assessed based upon the consequence vs. probability assigned to each scenario, based upon guidance originally produced by the DETR. These categories are outlined in Appendix 7.

An assessment of risk was undertaken using qualitative risk evaluation methods in accordance with EA document CLR11 'Model Procedures for the Management of Land Contamination', and CIRIA document C552 (2001) 'Contaminated Land Risk Assessment: A guide to good practice'. The assessment has been undertaken on the assumption that the site is currently grazing land; the sawmill and treatment building have been constructed but are currently non-operational.

Historically, the site has been agricultural land used for cattle grazing. A limited number of potentially contaminative industries have historically been present in the vicinity of the site, including branch railways, livestock market, dairy and builders yard.

It is estimated based on historical site use, the current data with regard to concentrations of contaminants on site and distance to contaminative activities that 'minor' harm could arise to sensitive receptors. A level of harm - 'minor', is anticipated for current activities, since any such harm is likely to be controlled and/or managed under the current statutory framework.

The likelihood of pathways being established to the identified receptors is considered unlikely apart from the pathway to surface watercourse which has been assessed as low likelihood due to the proposed drainage system being constructed.

Based on the comparison of the magnitude of the harm and the likelihood that a contaminant pathway would be established, it is assumed the overall risk based on current site condition would be '**Low/Very Low**'.

⁶ Environment Agency (2004) Environmental Risk Management and Strategic Environmental Assessment Guidance Note. Version 6. pp 1-5.

⁷ DEFRA (2002) Guidelines for Environmental Risk Assessment and Management. Available at: <http://www.defra.gov.uk/environment/risk/eramguide/index.htm>



5.0 CONCLUSIONS

British Geological Survey records the site to be underlain by superficial Till Deposits (clays with sands and gravels). The solid geology underlying the site is recorded to be mudstone and siltstone of the Bollin Mudstone Member.

Recent site investigation works undertaken by Mouchel (2014) as part of an FRA recorded the presence of glacial deposits at the surface.

The Superficial Deposits and Alluvium have been designated as Unproductive Strata and the Bollin Mudstone Member as Secondary B aquifer.

The site is not within a radon affected area. No radon protective measures are likely to be required for future developments.

The nearest surface water receptors are an attenuation pond to the south of the site and an ordinary watercourse within 250m.

The southern area of the Site is recorded as being within a Zone 3 Groundwater Source Protection Zone to potable abstraction wells located 1.6km to the southeast of the site.

The site is recorded as being at very low risk of flooding from rivers, (Zone 1) and at low risk of surface water and groundwater flooding.

The environmental sensitivity with respect to groundwater is classed as 'Moderately High' due to the sites location at the edge of Zone 3 of a Groundwater Source Protection Zone to a potable water supply approximately 1.6km southeast. The sensitivity with respect to human receptors has been assessed as 'Low'. The environmental sensitivity of the site with regard to surface waters is considered to be 'High' due to the proximity of the ordinary watercourses. The operational development will ultimately discharge surface waters, via the existing highways drainage, to the watercourse to the south of the site. Sensitivity with regard to ecological systems is considered 'Low/Moderate' because of a great crested newt population which has been relocated to the north of the site, and which may also use the pond to the south.

Historically, the site has been under agricultural use (grazing cattle). A small number of potentially contaminative uses have historically been present in the vicinity of the site, including branch railways, livestock market, dairy and builder's yard.

The current available information would indicate that 'minor' harm would be associated with the residual contamination from on-site activities. It is estimated that given the potential for contamination associated with historical off-site activities 'minor' harm could arise to sensitive receptors on-site. The potential harm associated with current activities on and off-site, is considered 'minor'.

The likelihood of potential pathways being established to the identified receptors are classed as unlikely on the basis of the current substrate (concrete hardstanding/ floor slab within the building footprint) at the site will reduce/remove the majority of contaminant pathways. The site drainage system for the sawmill will link the Site to the surface watercourse to south; however the presence of pollution control systems within this system will reduce this likelihood to 'low'.



Based on the comparison of the magnitude of the harm and the probability of a contaminant pathway being established as described above, it has been estimated based on the current site condition, there is a '**Low/Very Low**' risk of harm to the site and sensitive receptors.

Pam Brown Associates Ltd
January 2015



FIGURES



Pam Brown Associates

Environmental Consultants

Needwood House, Lancaster Park
 Newborough Road, Needwood
 Burton on Trent, DE13 9PD
 Tel: 01283 575733
 www.pambrownassociates.co.uk

Project:

Hales Sawmills
 Western Way, Market Drayton
 Desk Study/SCR

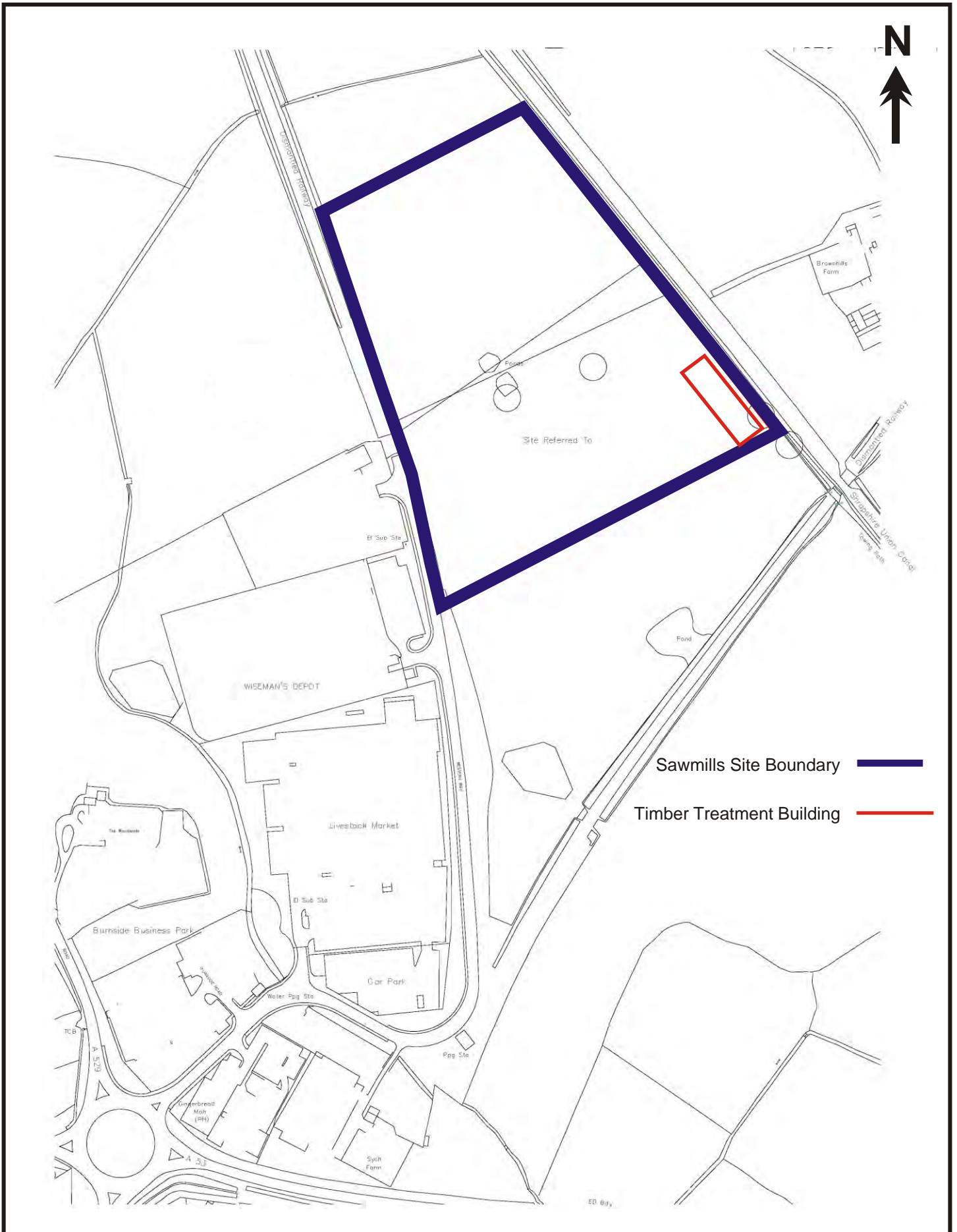
Title:

Site Location

Scale: NTS

Job No.: 1440-15

Figure 1



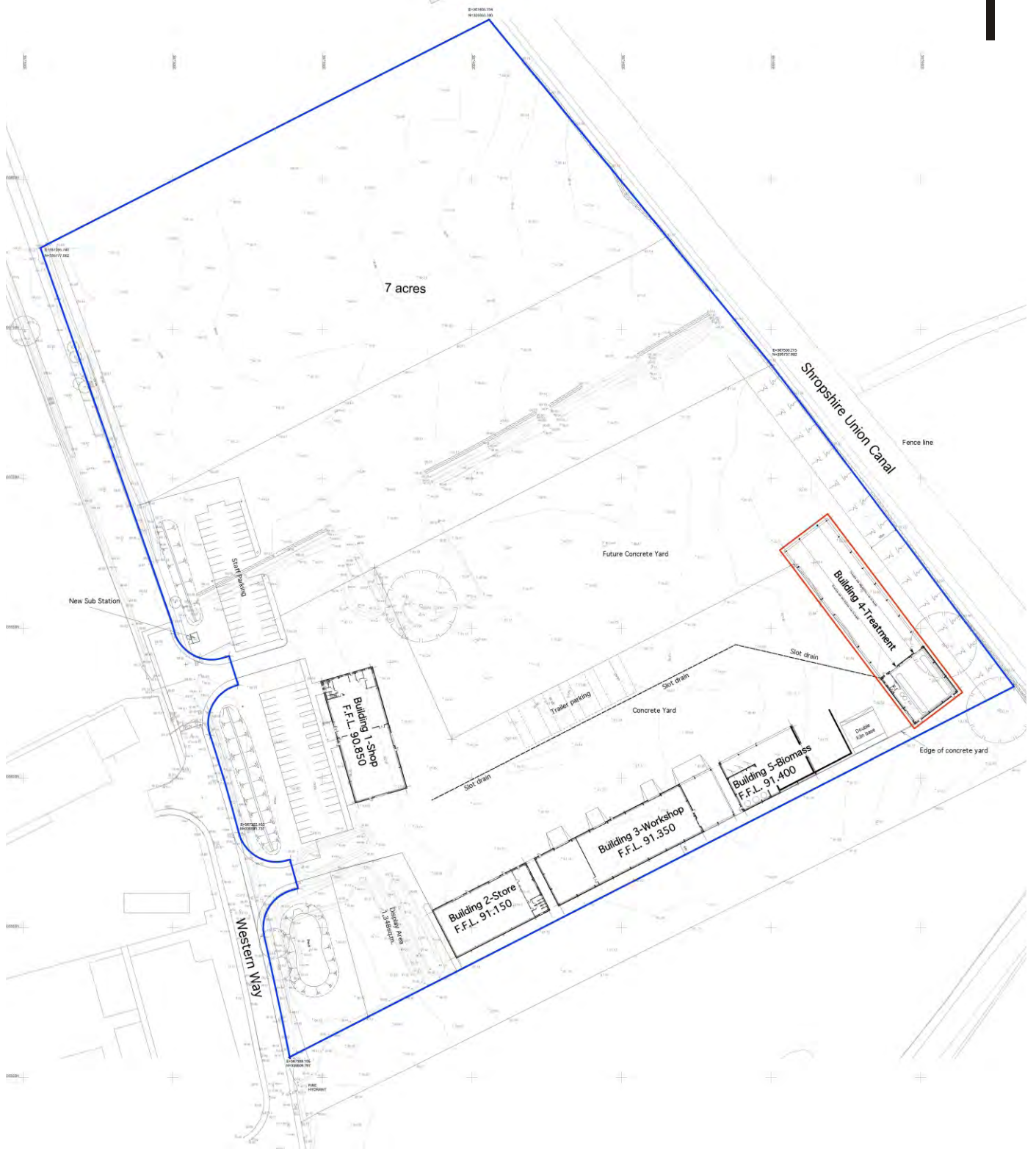
Pam Brown Associates
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 Needwood House, Lancaster Park
 Newborough Road, Needwood
 Burton on Trent, DE13 9PD
 Tel: 01283 575733
 www.pambrownassociates.co.uk

Project: Hales Sawmills
 Western Way, Market Drayton
 Desk Study/SCR

Title: Former Site Plan

Scale: NTS
Job No.: 1440-15

Figure 2



Pam Brown Associates
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Needwood House, Lancaster Park
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Tel: 01283 575733
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Project: Hales Sawmills
Western Way, Market Drayton
Desk Study/SCR

Title: Current Site Plan

Scale: NTS
Job No.: 1440-15

Figure 3

APPENDIX 1



SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

TANALITH E 8000

Version 1.3 / EN

Revision Date 14.08.2012

Print Date 15.08.2012

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : TANALITH E 8000

Product-specific registration-
no. : 9522

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the
Substance/Mixture : Preservative

1.3 Details of the supplier of the safety data sheet

Company : Arch Timber Protection
Wheldon Road
Castleford
United Kingdom
WF10 2JT

Telephone : +44 (0)1977 714000
Telefax : +44 (0)1977 714001
Responsible/issuing person : advice@archchemicals.com
E-mail address

1.4 Emergency telephone number

Emergency telephone
number : +44 (0)1235 239 670

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (67/548/EEC, 1999/45/EC)

Corrosive	R34: Causes burns.
Harmful	R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
Dangerous for the environment	R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 Label elements

Labelling according to EC Directives (1999/45/EC)

TANALITH E 8000

Hazard pictograms :



Corrosive

Dangerous
for the
environment

R-phrase(s) : R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R34 Causes burns.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s) : S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of water.
S35 This material and its container must be disposed of in a safe way.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S38 In case of insufficient ventilation, wear suitable respiratory equipment.
S57 Use appropriate container to avoid environmental contamination.

Hazardous components which must be listed on the label:

- 2-Aminoethanol 141-43-5
- Copper(II) carbonate--copper(II) hydroxide (1:1) 12069-69-1

Sensitising components : Propiconazole
May produce an allergic reaction.

2.3 Other hazards

not applicable

3. Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
2-Aminoethanol	141-43-5 205-483-3	C; R34 Xn; R20/21/22		>= 25 - < 50

TANALITH E 8000

Copper(II) carbonate-- copper(II) hydroxide (1:1)	12069-69-1 235-113-6	Xn; R22		>= 10 - < 20
Organic acid		Xi; Xi; R36-R38	Skin Irrit. 2; H315 Eye Irrit. 2; H319	< 10
cationic surfactant		Xi; Xi; R41 N; R51-R53	Eye Dam. 1; H318 Aquatic Chronic 2; H411	< 2.5
N,N-Didecyl-N,N- dimethylammonium carbonate (3:2)	894406-76-9	Xn; R22 C; R34 N; R50		< 5
Propiconazole	60207-90-1 262-104-4	Xn; R22 R43 N; R50-R53		>= 0.1 - < 0.25
Tebuconazole	107534-96-3 4036402	Repr.Cat.3; R63 Xn; R22 N; R51-R53		< 2.5
Didecyldimethylammoni um chloride	7173-51-5 230-525-2	C; R34 Xn; R22		< 5

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. First aid measures

4.1 Description of first aid measures

- General advice : Immediate medical attention is required.
Move out of dangerous area.
- If inhaled : Move to fresh air.
Keep patient warm and at rest.
Give oxygen or artificial respiration if needed.
Immediate medical attention is required.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off immediately with plenty of water for at least 15 minutes.
Immediate medical attention is required.
Wash contaminated clothing before re-use.
- In case of eye contact : Rinse immediately with plenty of water for at least 15 minutes.
Keep eye wide open while rinsing.
Immediate medical attention is required.
Small amounts splashed into eyes can cause irreversible

tissue damage and blindness.

If swallowed : Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
Immediate medical attention is required.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : See chapter
11. Toxicological information

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Carbon dioxide (CO₂)
Water spray

Unsuitable extinguishing media : Do NOT use water jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : The product is not flammable.
Do not allow run-off from fire fighting to enter drains or water courses.
Burning produces noxious and toxic fumes.

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Further information : Standard procedure for chemical fires.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Ensure adequate ventilation.
Avoid contact with the skin and the eyes.
Refer to protective measures listed in sections 7 and 8.
Wear protective gloves/protective clothing/eye protection/face protection.
Take off contaminated clothing and shoes immediately.
Wash contaminated clothing before re-use.

6.2 Environmental precautions

Environmental precautions : The product should not be allowed to enter drains, water courses or the soil.
If the product contaminates rivers and lakes or drains inform

respective authorities.
Prevent further leakage or spillage if safe to do so.

6.3 Methods and materials for containment and cleaning up

- Methods for cleaning up : Soak up with inert absorbent material.
Sand
Retain and dispose of contaminated wash water.
- : Pick up and transfer to properly labelled containers.
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

- Additional advice : See chapter
8. Exposure controls/personal protection
13. Disposal considerations

7. Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Avoid formation of aerosol.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Use only in an area equipped with a safety shower.

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Use appropriate container to avoid environmental contamination.

- Other data : No decomposition if stored and applied as directed.

7.3 Specific end uses

- Specific use(s) : Preservative

8. Exposure controls/personal protection

8.1 Control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
2-Aminoethano	141-43-5	STEL	3 ppm 7.6 mg/m ³	2007-08-01	GB EH40

TANALITH E 8000

Further information	: Sk: Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.				
2-Aminoethano	141-43-5	TWA	1 ppm 2.5 mg/m3	2007-08-01	GB EH40
Further information	: Sk: Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.				
2-Aminoethano	141-43-5	TWA	1 ppm 2.5 mg/m3	2006-02-09	2006/15/EC
Further information	: skin: Identifies the possibility of significant uptake through the skin Indicative				
2-Aminoethano	141-43-5	STEL	3 ppm 7.6 mg/m3	2006-02-09	2006/15/EC
Further information	: skin: Identifies the possibility of significant uptake through the skin Indicative				

8.2 Exposure controls

Engineering measures

Provide adequate ventilation.

Personal protective equipment

- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
Respirator with filter for organic vapour (EN 141)
- Hand protection : The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.
The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case.
Gloves must be inspected prior to use.
Replace when worn.
Impervious gloves
Nitrile rubber
- Eye protection : Wear protective gloves/ protective clothing/ eye protection/ face protection.

Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
impervious clothing
If splashes are likely to occur, wear:
Complete suit protecting against chemicals

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not eat, drink or smoke.
Take off contaminated clothing and wash before reuse.

Protective measures



Environmental exposure controls

General advice : The product should not be allowed to enter drains, water courses or the soil.
If the product contaminates rivers and lakes or drains inform respective authorities.
Prevent further leakage or spillage if safe to do so.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid
Colour : blue

Odour : ammoniacal

Flash point : Note: not determined

pH : 10.91
at
20 °C

Density : 1.184 g/cm³
at 20 °C

Water solubility : Note: completely soluble

Viscosity, dynamic : 40 mPas
at 5 °C

9.2 Other information

Oxidising potential : Note: Not relevant

10. Stability and reactivity

10.1 Reactivity

None known.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Note: Stable under recommended storage conditions.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

Thermal decomposition : Note: None known.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity : Remarks: Harmful if swallowed.
TANALITH E 8000

Acute inhalation toxicity : Remarks: Harmful by inhalation.
TANALITH E 8000

Acute dermal toxicity : Remarks: Harmful in contact with skin.
TANALITH E 8000

Skin corrosion/irritation

Skin irritation : Remarks: Causes skin burns.
TANALITH E 8000

Serious eye damage/eye irritation

Eye irritation : Remarks: Causes eye burns.
TANALITH E 8000

Respiratory or skin sensitization

Sensitisation
TANALITH E 8000 : Remarks: Not believed to be sensitising to skin.

Further information
TANALITH E 8000 : no data available

12. Ecological information

12.1 Toxicity

Ecotoxicology Assessment

Chronic aquatic toxicity
TANALITH E 8000 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability

Biodegradability
TANALITH E 8000 : Remarks: no data available

12.3 Bioaccumulative potential

Bioaccumulation
TANALITH E 8000 : Remarks: no data available

12.4 Mobility in soil

Mobility
TANALITH E 8000 : Remarks: no data available

12.5 Results of PBT and vPvB assessment

TANALITH E 8000 : This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)., This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

Additional ecological information
TANALITH E 8000 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Dispose of as hazardous waste in compliance with local and national regulations.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

Contaminated packaging : Dispose of as unused product.
Do not re-use empty containers.

14. Transport information

Dangerous for Transport

ADR

14.1 UN number : 1760
14.2 Proper shipping name : CORROSIVE LIQUID, N.O.S.
(2-Aminoethanol, Copper(II) carbonate--copper(II) hydroxide (1:1))
14.3 Transport hazard class : 8
14.4 Packing group : II
Classification Code : C9
Hazard identification No : 80
Labels : 8
14.5 Environmentally hazardous : yes

IATA_C

14.1 UN number : 1760
14.2 Proper shipping name : Corrosive liquid n.o.s.

TANALITH E 8000

(2-Aminoethanol, Copper(II) carbonate--copper(II) hydroxide (1:1))

14.3 Transport hazard class : 8

14.4 Packing group : II

Labels : 8

14.5 Environmentally hazardous : yes

IMDG

14.1 UN number : 1760

14.2 Proper shipping name : CORROSIVE LIQUID, N.O.S.
(2-Aminoethanol, Copper(II) carbonate--copper(II) hydroxide (1:1))

14.3 Transport hazard class : 8

14.4 Packing group : II

Labels : 8

EmS Number 1 : F-A

EmS Number 2 : S-B

14.5 Marine pollutant : yes
Copper(II) carbonate--copper(II) hydroxide (1:1)

14.6 Special precautions for user

Other information : Refer to protective measures listed in sections 7 and 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Remarks : Not relevant

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Major Accident Hazard : 96/82/EC Update: 2003
Legislation : Dangerous for the environment
9a
Quantity 1: 100 t
Quantity 2: 200 t

Water contaminating class : WGK 3 highly water endangering
(Germany)

15.2 Chemical Safety Assessment

not applicable

16. Other information

Full text of R-phrases referred to under sections 2 and 3

TANALITH E 8000

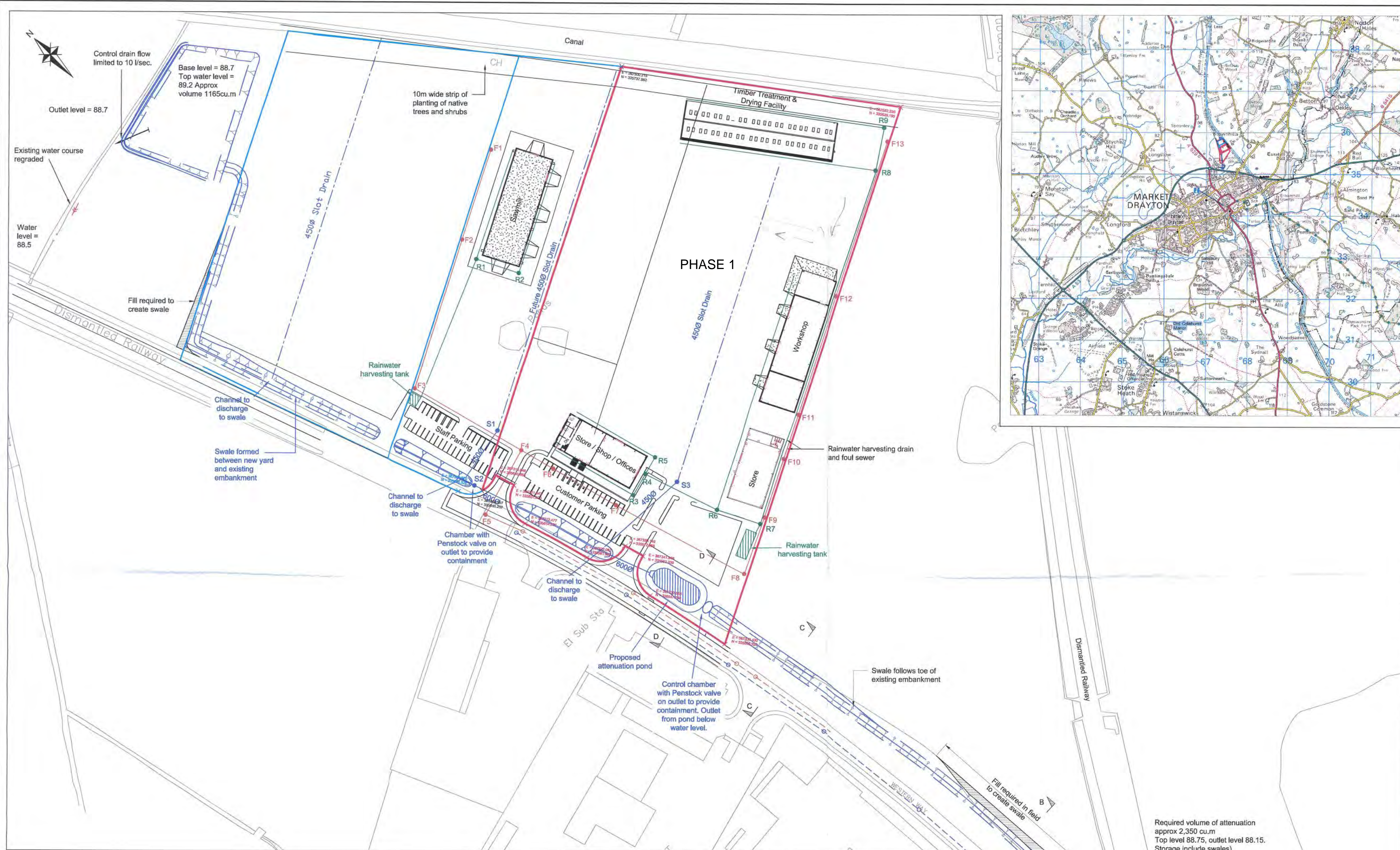
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R34	Causes burns.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of H-Statements referred to under sections 2 and 3.

H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

APPENDIX 2



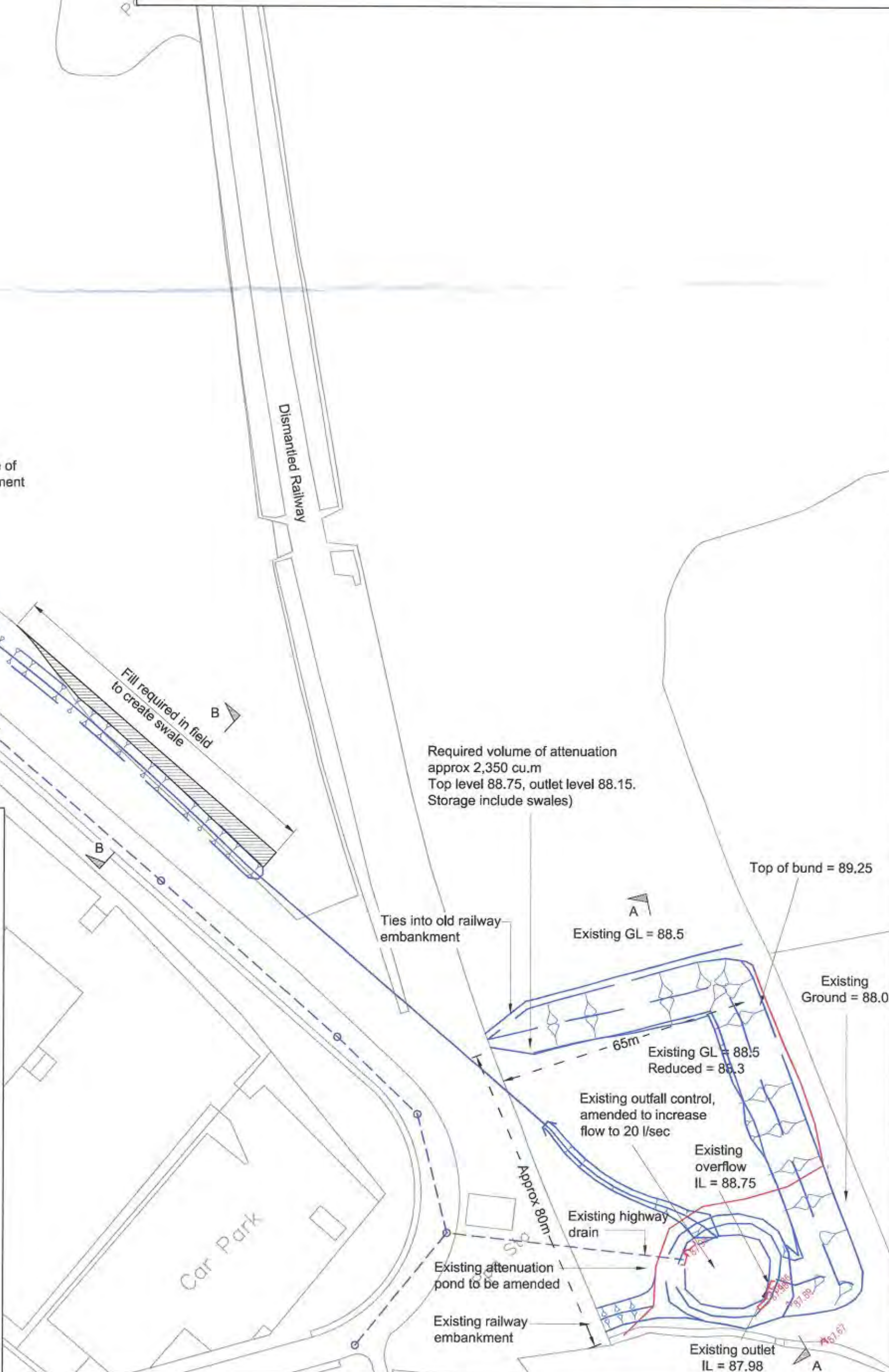
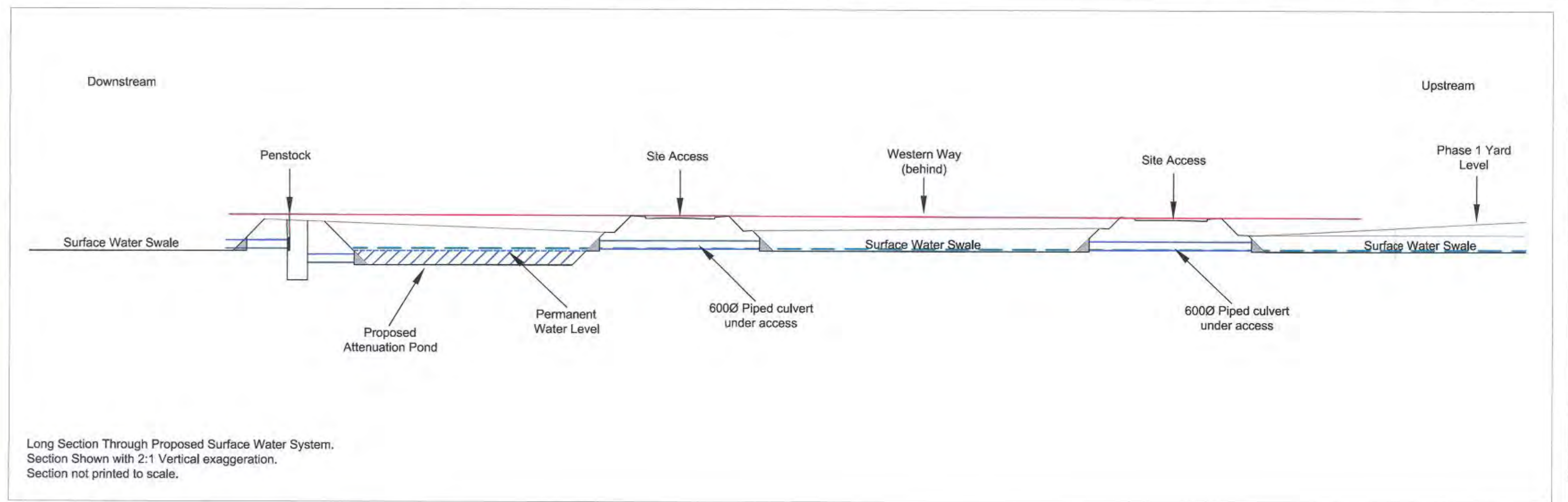
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Do not scale - Use only figured dimensions
 The contractor is to check all dimensions on site and report any discrepancies to the Site Supervisor.
 This drawing is to be read in conjunction with all other standard documentation.

Notes:
 Finished yard to fall at 1% towards access, and include 2 no. valley's with 2.5% fall towards the channel.
 Proposed surface water system designed based on unverified construction plans for the access road & attenuation pond. Survey data will need to be collected & design checked prior to construction.

Key:

- Existing Surface Water System
- Existing Surface Water Attenuation Pond
- Existing Foul Water System
- Proposed Surface Water System
- Proposed 450Ø Surface Water Slot Drain
- Proposed Surface Water Swale
- Proposed Surface Water Attenuation Pond
- Proposed Foul Water System
- Proposed Rainwater Harvesting System
- Proposed Rainwater Harvesting Tank
- Proposed earth bund
- Ponds sized for 100yr storm + 30% with 5 l/sec/ha discharge
- 8 Acre Plot
- 5 Acre Plot



C	Plot sizes amended & swale relocated	YIW	NS	M.P
B	Pond Design Amend	DM	NS	M.P
A	Planning Boundary added	YIW	NS	M.P
Revision	Amendment	Originated by and date	Checked by and date	Approved by and date

mouchel
 Haughton View, Sitka Drive,
 Shrewsbury Business Park Shrewsbury SY2 6LG
 Tel: 01743 276000 Fax: 01743 276391
 Web Site: www.mouchel.com

Client: **McPHILLIPS CIVIL ENGINEERS LIMITED**

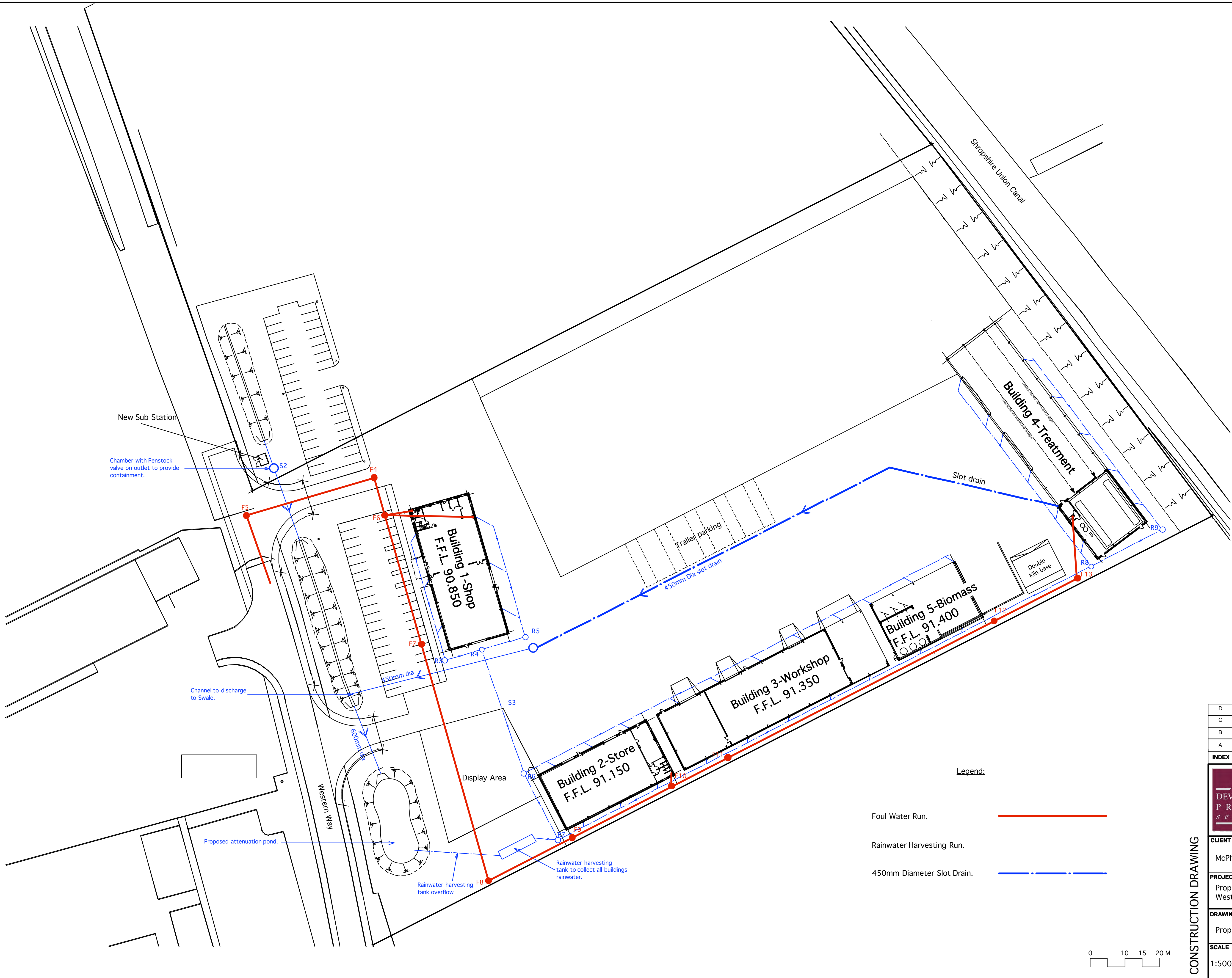
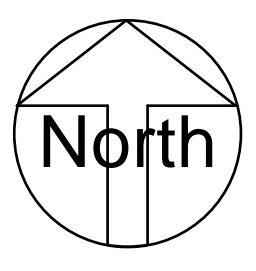
Project: **Hales Sawmill**

Drawing Title: **Drainage Details for Planning Application**

Drawn By: DM 28.03.2012	Checked By: NS 28.03.2012	Approved By: MP 28.03.2012	Scale: (at A1 size) 1:1000
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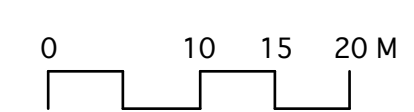
Purpose: Preliminary

Drawing Number: **1044364-P-500**



Legend:

- Foul Water Run. ———
- Rainwater Harvesting Run. - - - - -
- 450mm Diameter Slot Drain. - · - · -



INDEX	DATE	INITIAL	REVISION
D	07-07-14	J.M.R.	SURFACED AREAS AMENDED, BUILDING 4 REPOSITIONED, SLOT DRAIN REPOSITIONED
C	19-06-14	J.M.R.	SURFACED AREAS AMENDED
B	03-06-14	J.M.R.	BUILDING 4 REPOSITIONED
A	27-05-14	P.S.K.	BUILDING LAYOUTS REVISED, DRAINAGE AMENDED TO SUIT.

DEVELOPMENT PROJECT services

*Architects,
Quantity Surveyors,
Development Consultants
The Westlands
132 Compton Road
Wolverhampton WV3 9QB
Tel: (01902) 427067
Fax: (01902) 712070*

CONSTRUCTION DRAWING

CLIENT			
McPhillips (Wellington) Ltd			
PROJECT			
Proposed Development for Hales Sawmills Western Way Market Drayton			
DRAWING TITLE			DRAWN BY
Proposed Drainage			P.S.K.
SCALE	DATE	DRG. NO.	REVISION
1:500@A1	12-05-14	2072-116	D

APPENDIX 3



GroundSure GeoInsight

Address: Hales Sawmills, Western Way, Market Drayton,
Date: 14 Jan 2015
Reference: GS-1846222
Client: Pam Brown Associates



Aerial Photograph Capture date: 28-Mar-2012
Grid Reference: 367521,335646
Site Size: 0.13ha

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Overview of Findings

The GroundSure GeoInsight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Shallow Mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and GroundSure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1:Geology

1.1 Artificial Ground	1.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	1.1.2 Are there any records relating to permeability of artificial ground within the study site* boundary?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?	Yes
	1.2.2 Are there any records relating to permeability of superficial geology within the study site boundary?	Yes
	1.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	1.2.4 Are there any records relating to permeability of landslips within the study site boundary?	No
1.3 Bedrock, Solid Geology & Faults	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records relating to permeability of bedrock within the study site boundary?	Yes
	1.3.3 Are there any records of faults within 500m of the study site boundary?	No
1.4 Radon data	1.4.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level
	1.4.2 Is the property in an area where Radon Protection Measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary

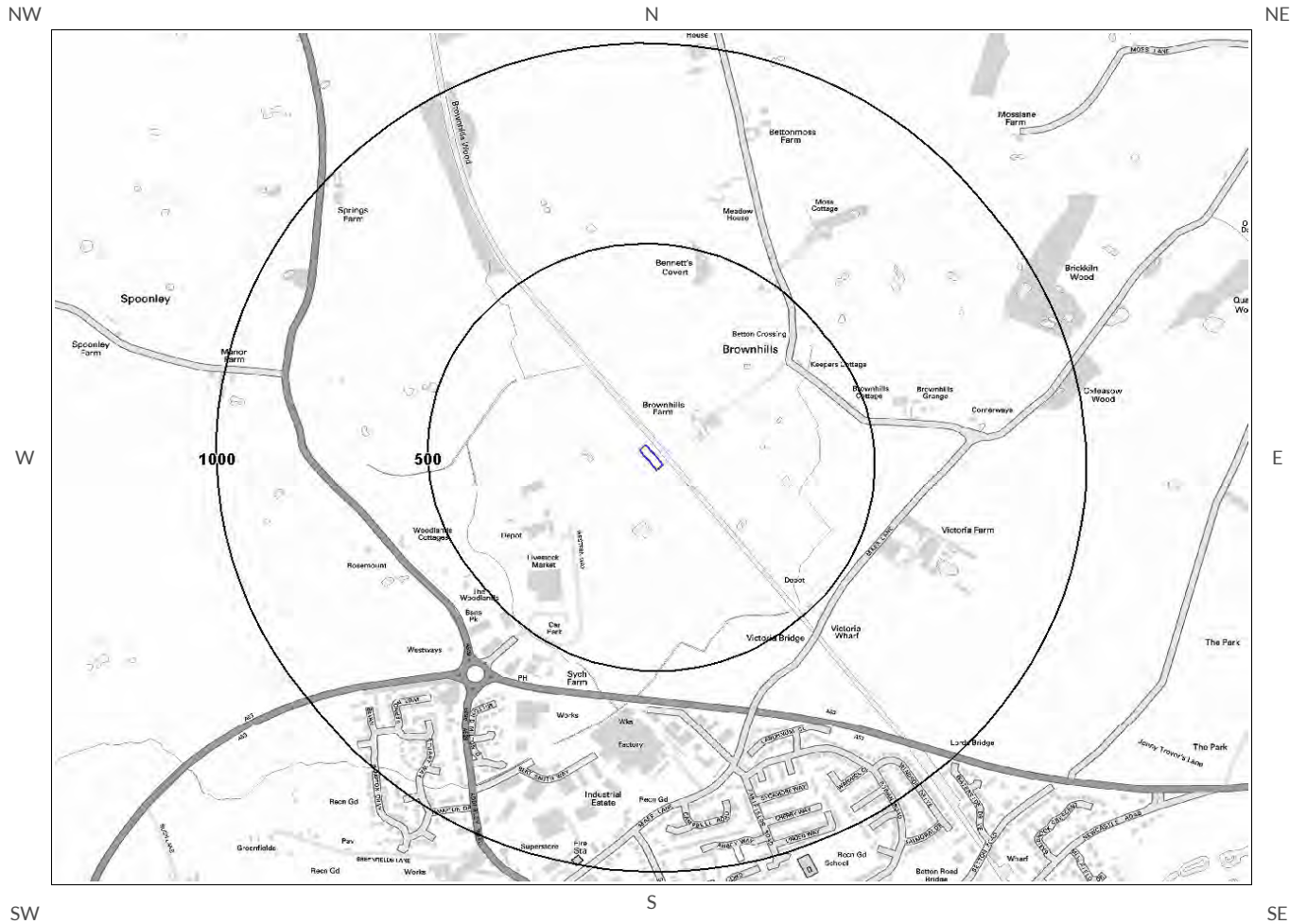
Section 2:Ground Workings	On-site	0-50m	51-250	251-500	501-1000
2.1 Historical Surface Ground Working Features from Small Scale Mapping	0	8	18	Not Searched	Not Searched
2.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
2.3 Current Ground Workings	0	0	0	0	4
Section 3:Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
3.1 Historical Mining	0	0	0	0	1

Section 3: Mining, Extraction & Natural Cavities					
	On-site	0-50m	51-250	251-500	501-1000
3.2 Coal Mining	0	0	0	0	0
3.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
3.4 Non-Coal Mining	0	0	0	0	0
3.5 Non-Coal Mining Cavities	0	0	0	0	0
3.6 Natural Cavities	0	0	0	0	0
3.7 Brine Extraction	0	0	0	0	0
3.8 Gypsum Extraction	0	0	0	0	0
3.9 Tin Mining	0	0	0	0	0
3.10 Clay Mining	0	0	0	0	0
Section 4: Natural Ground Subsidence					
	On-site				
4.1 Shrink Swell Clay	Very Low				
4.2 Landslides	Very Low				
4.3 Ground Dissolution of Soluble Rocks	Negligible				
4.4 Compressible Deposits	Negligible				
4.5 Collapsible Deposits	Very Low				
4.6 Running Sand	Very Low				
Section 5: Borehole Records					
	On-site	0-50m	51-250		
5 BGS Recorded Boreholes	0	0	0		
Section 6: Estimated Background Soil Chemistry					
	On-site	0-50m	51-250		
6 Records of Background Soil Chemistry	1	1	7		
Section 7: Railways and Tunnels					
	On-site	0-50m	51-250	251-500	
7.1 Tunnels	0	0	0	Not Searched	
7.2 Historical Railway and Tunnel Features	0	0	4	Not Searched	
7.3 Historical Railways	0	0	5	Not Searched	
7.4 Active Railways	0	0	0	Not Searched	

Section 7:Railways and Tunnels	On-site	0-50m	51-250	251-500
7.5 Railway Projects	0	0	0	0

1 Geology




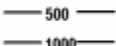




1.1 Artificial Ground Map



Artificial Ground Legend



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	Site Outline		Made Ground (undivided)		Disturbed Ground (undivided)
	Search Buffers (m)		Worked Ground (undivided)		Landscaped Ground (undivided)
			Infilled Ground		Reclaimed Ground



1 Geology

1.1 Artificial Ground

1.1.1 Artificial/ Made Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:139

Are there any records of Artificial/Made Ground within 500m of the study site boundary? No

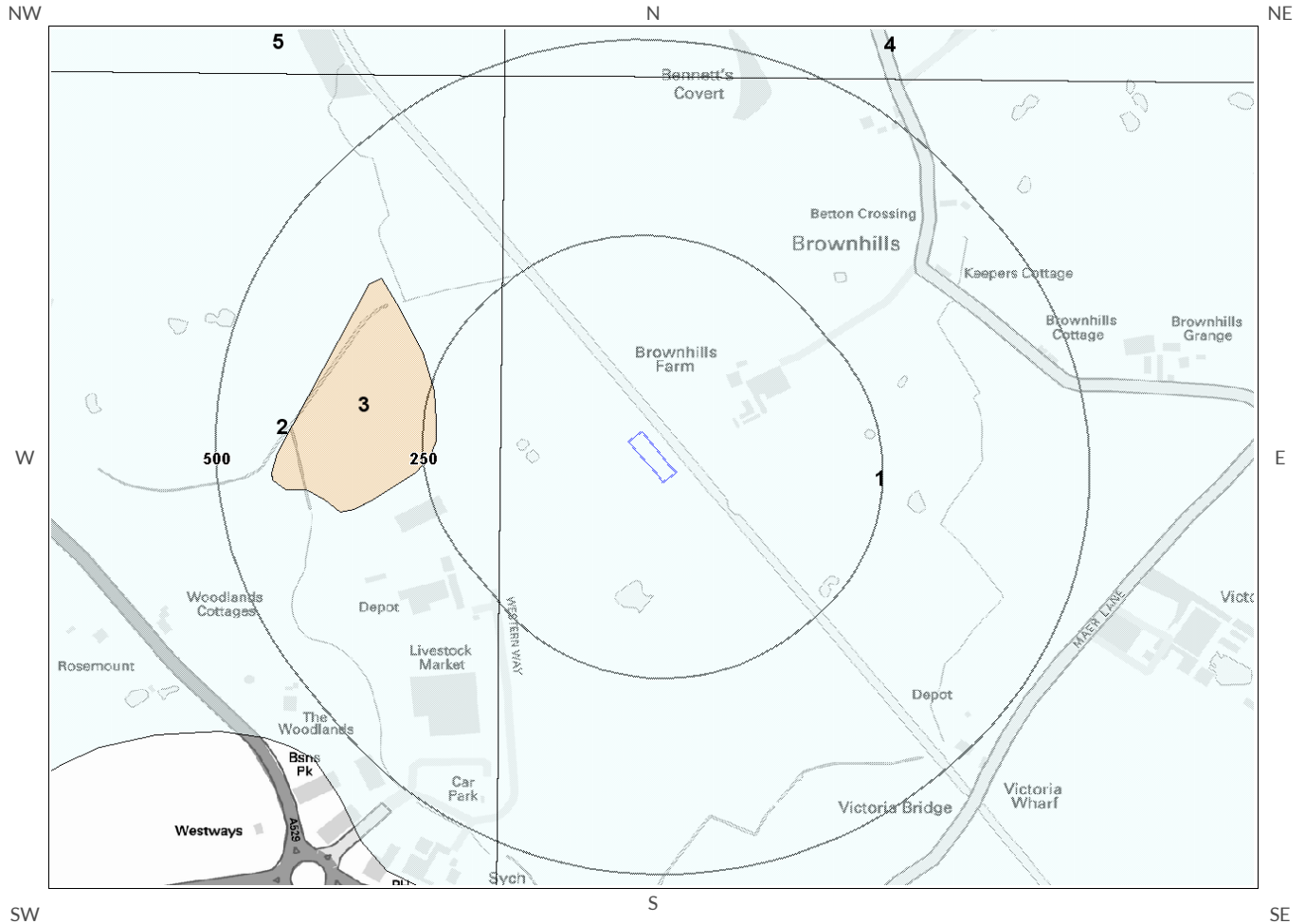
Database searched and no data found.

1.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

1.2 Superficial Deposits and Landslips Map



Superficial Deposits and Landslips Legend



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1.2 Superficial Deposits and Landslips

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	155.0	W	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	233.0	W	PEAT-P	PEAT	PEAT
4	452.0	N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
5	483.0	N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

1.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	High	Low

1.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

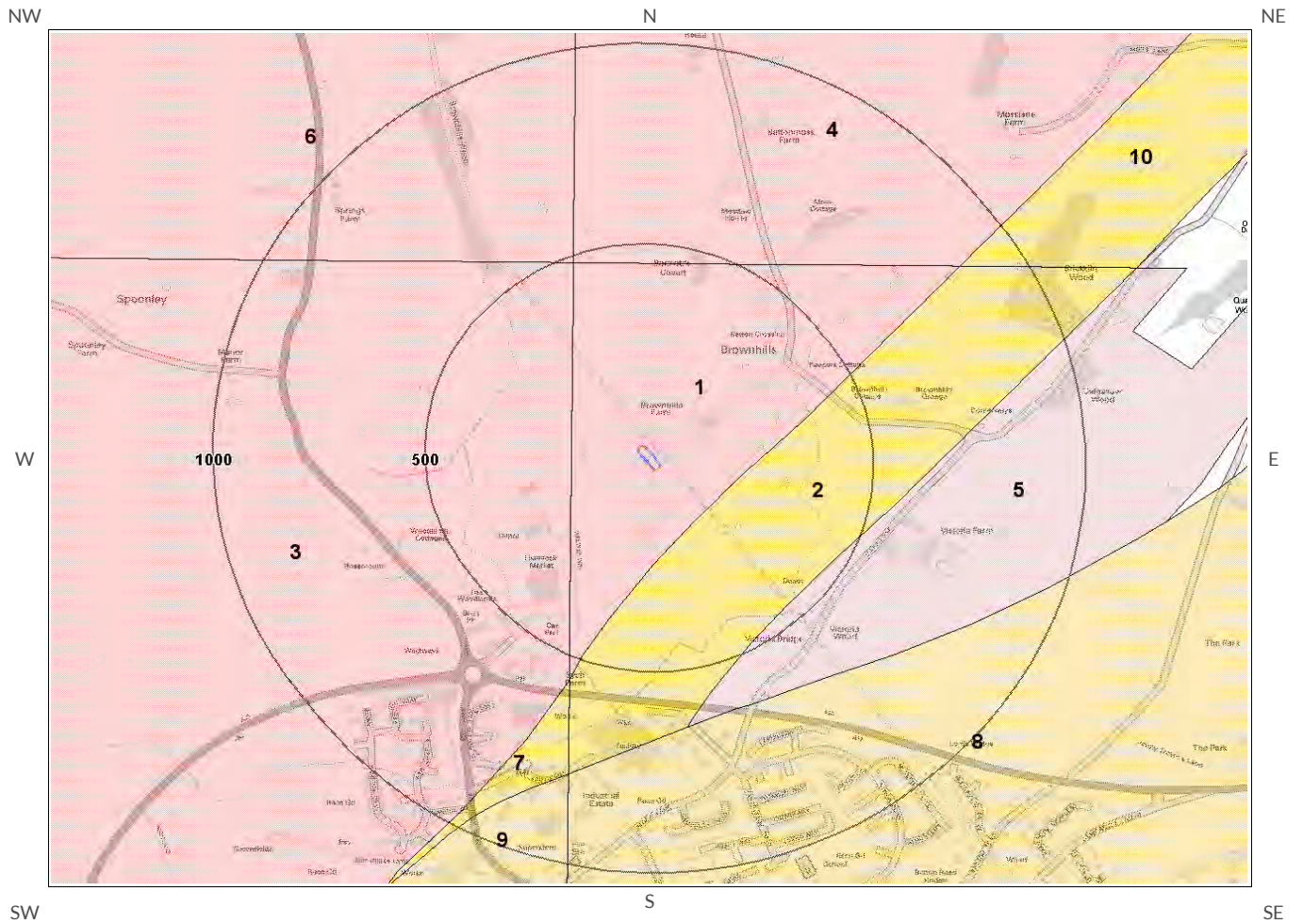
1.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site** boundary? No

Database searched and no data found.

* This includes an automatically generated 50m buffer zone around the site

1.3 Bedrock and Faults Map



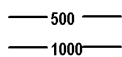
Bedrock and Faults Legend



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Site Outline



Search Buffers (m)

1.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:139

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/ Solid Geology within 500m of the study site boundary:

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	BOM-MDST	Bollin Mudstone Member - Mudstone	Anisian
2	151.0	SE	HEY-PEST	Helsby Sandstone Formation - Pebbly (gravelly) Sandstone	Anisian / Scythian
3	155.0	W	BOM-MDST	Bollin Mudstone Member - Mudstone	Anisian
4	452.0	N	BOM-MDST	Bollin Mudstone Member - Mudstone	Anisian
5	453.0	SE	HEY-MDST	Helsby Sandstone Formation - Mudstone	Anisian / Scythian
6	483.0	N	BOM-MDST	Bollin Mudstone Member - Mudstone	Anisian

1.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site* boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Low	Low

1.3.3 Faults

Are there any records of Faults within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

* This includes an automatically generated 50m buffer zone around the site

1.4 Radon Data

1.4.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level

1.4.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary





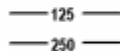

2 Ground Workings Map



Ground Workings Legend



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-  Site Outline
-  Historic Surface Ground Workings
-  Historic Underground Workings
-  Current Ground Workings
-  125 Search Buffers (m)
-  250 Search Buffers (m)



2 Ground Workings

2.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on GroundSure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping.

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

The following Historical Surface Ground Working Features are provided by GroundSure:

ID	Distance (m)	Direction	NGR	Use	Date
1A	8.0	NE	368030 335071	Canal	1879
2A	8.0	NE	368030 335071	Canal	1900
3	11.0	NE	368043 335071	Canal	1922
4	12.0	NE	367014 336698	Canal	1899
5B	12.0	NE	367004 337502	Canal	1968
6B	12.0	NE	367004 337502	Canal	1949
7	12.0	NE	367014 336697	Canal	1929
8	15.0	NE	367016 336695	Canal	1879
9	83.0	NE	367588 335757	Pond	1929
10	85.0	SW	367433 335619	Pond	1929
11C	108.0	W	367379 335675	Ponds	1968
12C	114.0	W	367375 335672	Ponds	1899
13C	114.0	W	367381 335667	Pond	1929
14D	118.0	E	367729 335746	Cuttings	1879
15	120.0	NE	367666 335712	Pond	1929
16C	124.0	W	367369 335682	Pond	1929
17D	125.0	E	367738 335745	Cuttings	1879
18E	130.0	S	367505 335489	Pond	1968
19E	144.0	S	367497 335489	Pond	1929
20F	201.0	NW	367430 335899	Pond	1968
21F	202.0	NW	367426 335897	Pond	1929

ID	Distance (m)	Direction	NGR	Use	Date
22	208.0	NE	367695 335829	Pond	1929
23G	223.0	SE	367745 335511	Pond	1929
24G	223.0	SE	367734 335497	Pond	1929
25H	225.0	E	367800 335696	Pond	1968
26H	233.0	E	367794 335690	Pond	1929

2.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the GroundSure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

2.3 Current Ground Workings

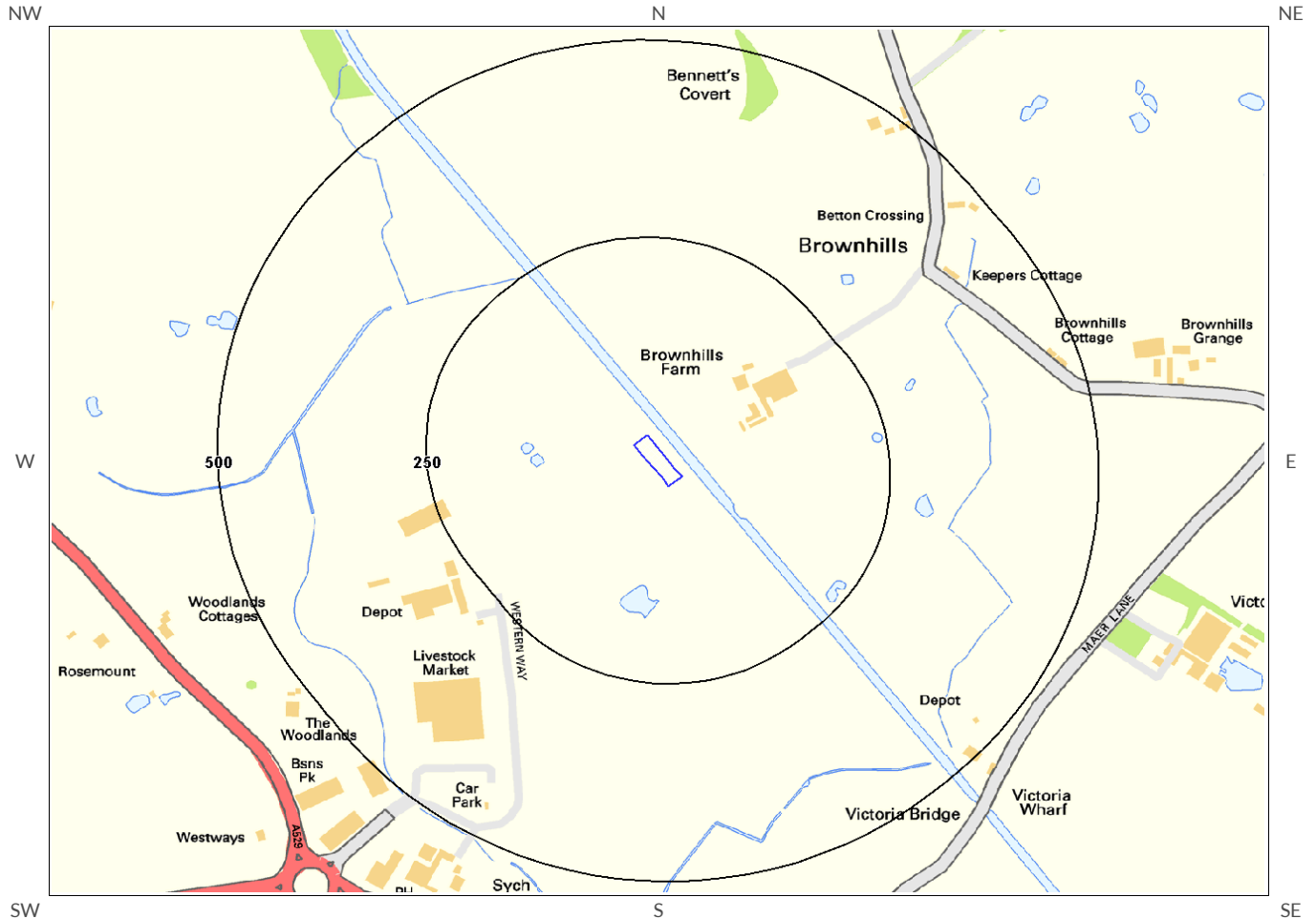
This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	553.0	W	366981 335497	Clay & Shale	Spoonley Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	849.0	W	366657 335591	Clay & Shale	Spoonley Brick & Pipe Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	934.0	NW	366796 336298	Clay & Shale	Springs Farm Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	953.0	E	368475 335905	Clay & Shale	Brownhills Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

3 Mining, Extraction & Natural Cavities Map



Mining, Extraction and Natural Cavities Legend



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3 Mining, Extraction & Natural Cavities

3.1 Historical Mining

This dataset is derived from GroundSure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by GroundSure:

ID	Distance (m)	Direction	NGR	Details	Date
Not shown	889.0	SW	367141 334837	Coal Wharf	1938

3.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

3.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled “Review of mining instability in Great Britain, 1990” PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

3.6 Natural Cavities

This dataset provides information based on Peter Brett Associates natural cavities database.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

3.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

3.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

3.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level.

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary?

No

Database searched and no data found.

4 Natural Ground Subsidence

4.1 Shrink-Swell Clay Map



Shrink Swell Clay Legend



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4.2 Landslides Map



Landslides Legend



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4.3 Ground Dissolution Soluble Rocks Map



Ground Dissolution Soluble Rocks Legend



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4.4 Compressible Deposits Map



Compressible Deposits Legend



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4.5 Collapsible Deposits Map



Collapsible Deposits Legend



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4.6 Running Sand Map



Running Sand Legend



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4 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? Very Low

4.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

4.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

4.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This includes an automatically generated 50m buffer zone around the site

4.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

4.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

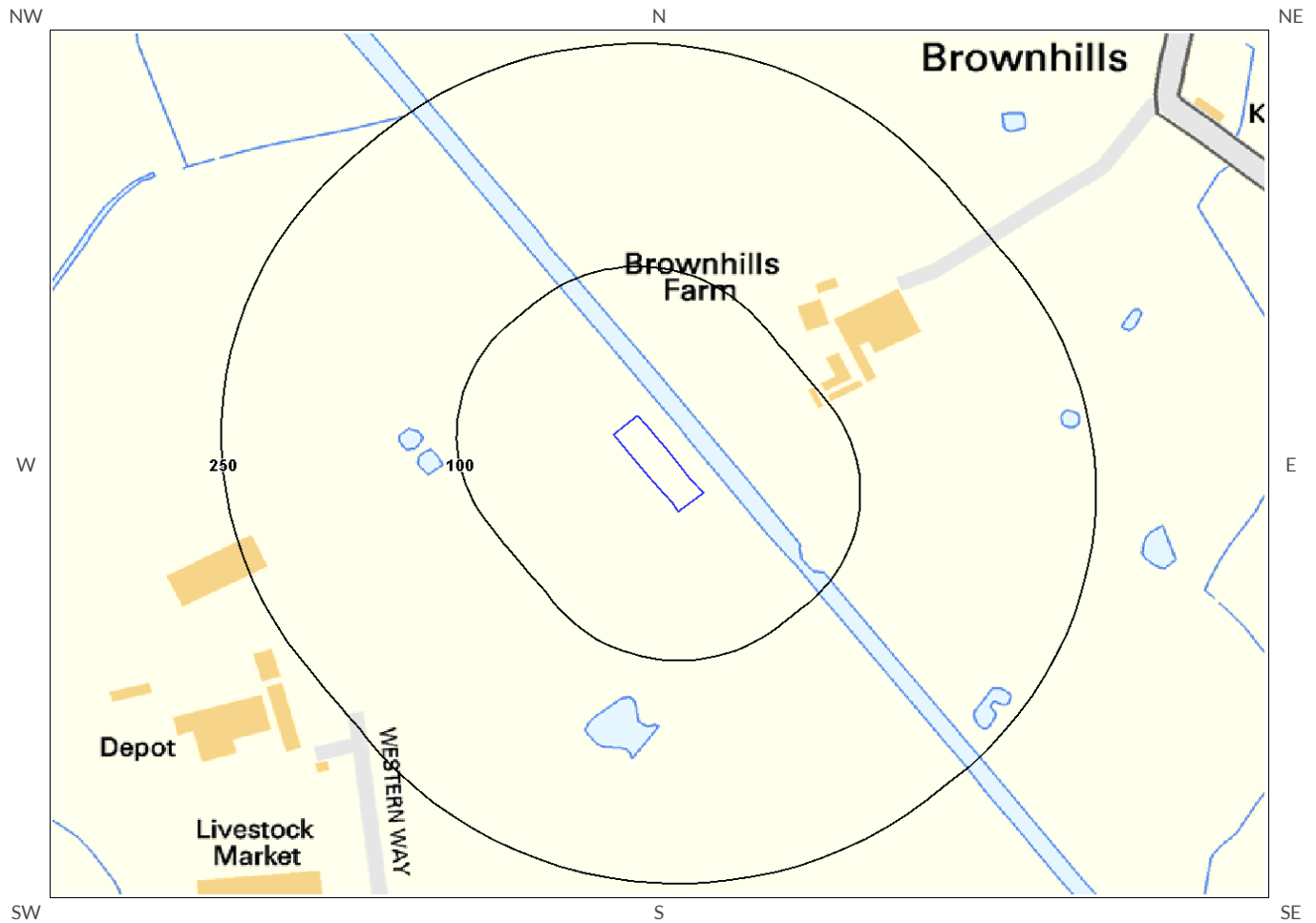
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

4.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.





5 Borehole Records Map



Borehole Records Legend



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-  Site Outline
-  Borehole Locations
-  125
-  250 Search Buffers (m)



5 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

0

Database searched and no data found.



6 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

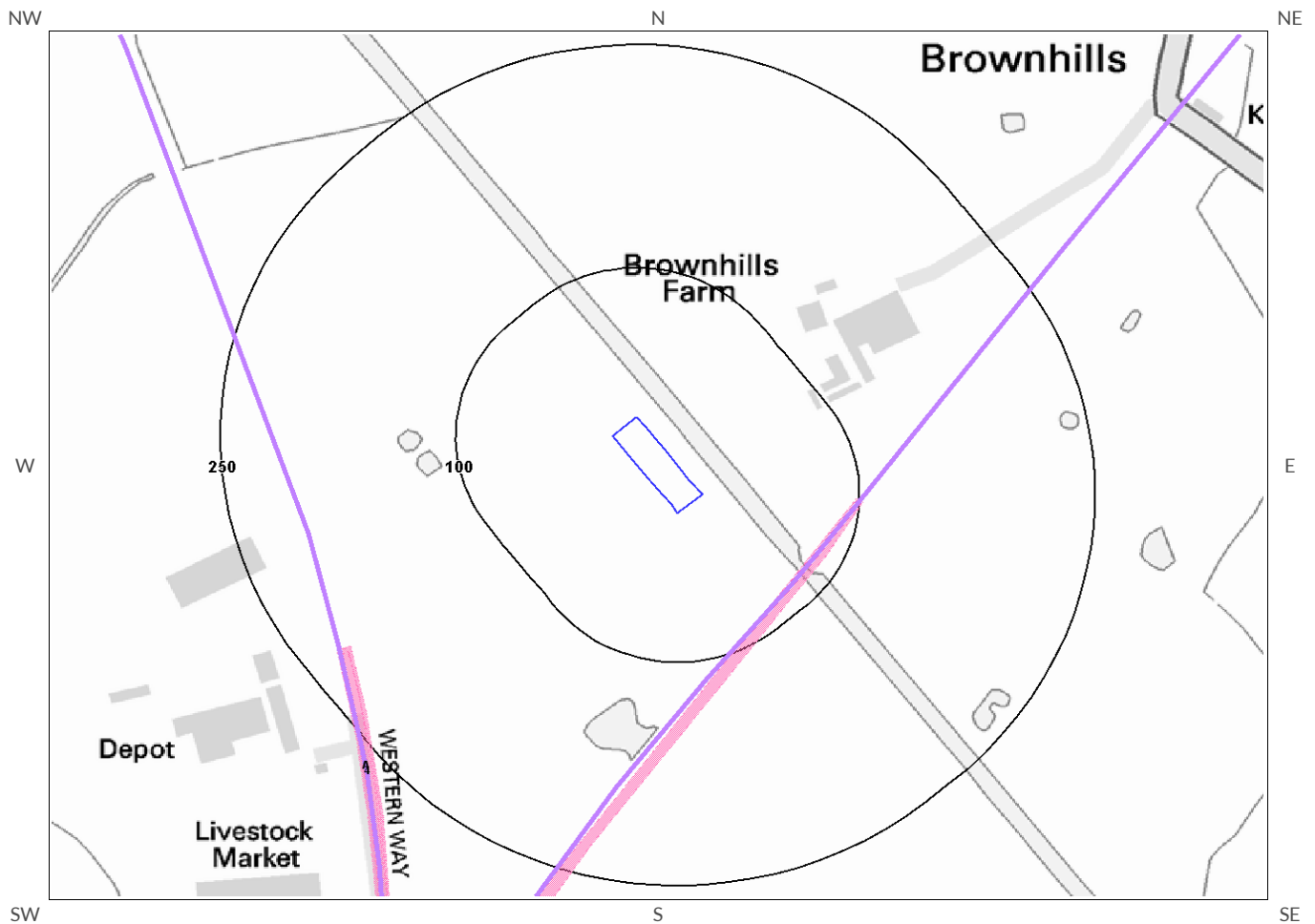
9

For further information on how this data is calculated and limitations upon its use, please see the GroundSure Geolnsight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
1.0	W	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
134.0	S	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
140.0	S	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
151.0	SE	RuralSoil	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
155.0	W	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
159.0	SE	RuralSoil	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
233.0	W	RuralSoil	<15 mg/kg	<1.8 mg/kg	20 - 40 mg/kg	<15 mg/kg	<100 mg/kg
239.0	SW	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

7 Railways and Tunnels Map

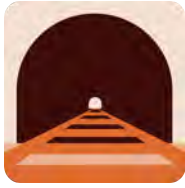


Railways and Tunnels Legend



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7 Railways and Tunnels

7.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.

7.2 Historical Railway and Tunnel Features

This data is derived from GroundSure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1	80	SE	367354 335322	Railway Sidings	1965
2A	221	SW	367356 335318	Railway Sidings	1926
3A	221	SW	367356 335318	Railway Sidings	1901
4	222	SW	367347 335453	Railway Sidings	1902

Any records that have been identified are represented on the Railways and Tunnels Map.

7.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Status
82	SE	Dismantled
83	SE	Abandoned
84	SE	Abandoned
204	W	Abandoned
204	W	Abandoned

Note: multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels Map.

7.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Note: multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels Map.

7.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail.

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a GroundSure HS2 and Crossrail Report.

Contact Details



GroundSure Helpline
Telephone: 08444 159 000
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BGS Geological Hazards Reports and general geological enquiries



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Report Reference: GS-1846222

Client Reference: 1440-15

Standard Terms and Conditions

1 Definitions

In these terms and conditions unless the context otherwise requires:

"Beneficiary" means the person or entity for whose benefit the Client has obtained the Services.

"Client" means the party or parties entering into a Contract with GroundSure.

"Commercial" means any building or property which is not Residential.

"Confidential Information" means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by GroundSure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

"Support Services" means Support Services provided by GroundSure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Contract" means the contract between GroundSure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

"Third Party Data Provider" means any third party providing Third Party Content to GroundSure.

"Data Reports" means reports comprising factual data with no accompanying interpretation.

"Fees" has the meaning set out in clause 5.1.

"GroundSure" means GroundSure Limited, a company registered in England and Wales under number 03421028.

"GroundSure Materials" means all materials prepared by GroundSure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

"Intellectual Property" means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

"Mapping" means a map, map data or a combination of historical maps of various ages, time periods and scales.

"Order" means an electronic, written or other order form submitted by the Client requesting Services from GroundSure in respect of a specified Site.

"Ordnance Survey" means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

"Order Website" means the online platform through which Orders may be placed by the Client and accepted by GroundSure.

"Report" means a Risk Screening Report or Data Report for Commercial or Residential property.

"Residential" means any building or property used as or intended to be used as a single dwelling.

"Risk Screening Report" means a risk screening report comprising factual data with an accompanying interpretation by GroundSure.

"Services" means any Report, Mapping and/or Support Services which GroundSure has agreed to provide by accepting an Order pursuant to clause 2.6.

"Site" means the area of land in respect of which the Client has requested GroundSure to provide the Services.

"Third Party Content" means data, database information or other information which is provided to GroundSure by a Third Party Data Provider.

"User Guide" means the user guide, as amended from time to time, available upon request from GroundSure and on the website (www.GroundSure.com) and forming part of this Contract.

2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 GroundSure agrees to provide the Services in accordance with the Contract.

2.2 GroundSure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. In addition you acknowledge and agree that GroundSure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 GroundSure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by GroundSure. GroundSure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by GroundSure. GroundSure's acceptance of an Order

shall be binding only when made in writing and signed by GroundSure's authorised representative or when accepted through the Order Website.

3 The Client's obligations

3.1 The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to GroundSure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to GroundSure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as GroundSure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable GroundSure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the GroundSure Materials, or use the GroundSure Materials in a manner for which they were not intended. The Client may make the GroundSure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that GroundSure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

4 Reliance

4.1 The Client acknowledges that the Services provided by GroundSure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by GroundSure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

(i) the Beneficiary,

(ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),

(iv) the first purchaser or first tenant of the Site, and

(v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by GroundSure. Any party considering such Reports and Services does so at their own risk.

5 Fees and Disbursements

5.1 GroundSure shall charge and the Client shall pay fees at the rate and frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by GroundSure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

5.2 The Client shall pay all outstanding Fees to GroundSure in full without deduction, counterclaim or set off within 30 days of the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of GroundSure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

6 Intellectual Property and Confidentiality

6.1 Subject to

(i) full payment of all relevant Fees and

(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the GroundSure Materials.

6.2 All Intellectual Property in the GroundSure Materials are and shall remain owned by GroundSure or GroundSure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the GroundSure Materials shall:

(i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the GroundSure Materials in order to advise the Beneficiary in a professional capacity. However, GroundSure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

7. Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of GroundSure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by GroundSure or its employees, agents or subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 GroundSure shall not be liable for

(i) loss of profits;

(ii) loss of business;

(iii) depletion of goodwill and/or similar losses;

(iv) loss of anticipated savings;

(v) loss of goods;

(vi) loss of contract;

(vii) loss of use;

(viii) loss or corruption of data or information;

(ix) business interruption;

(x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

(xi) loss or damage that arise as a result of the use of all or part of the GroundSure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the GroundSure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of GroundSure's internet ordering service.

7.5 GroundSure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 GroundSure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of GroundSure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against GroundSure in relation to the Services or other matters arising pursuant to the Contract.

8 GroundSure's right to suspend or terminate

8.1 If GroundSure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, GroundSure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 GroundSure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to GroundSure within 30

days of the Payment Date; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or

(iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon GroundSure's acceptance of the Order; and

(ii) the Reports and/or Mapping provided under this Contract are

(a) supplied to the Client's specification(s) and in any event

(b) by their nature cannot be returned.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

(i) GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in GroundSure's possession or control; and

(ii) the Client shall pay to GroundSure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination or suspension of the Contract.

11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of GroundSure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to GroundSure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through GroundSure.

12.3 GroundSure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of GroundSure.

12.4 No failure on the part of GroundSure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

(i) the Client or Beneficiary's failure to provide facilities, access or information;

(ii) fire, storm, flood, tempest or epidemic;

(iii) Acts of God or the public enemy;

(iv) riot, civil commotion or war;

(v) strikes, labour disputes or industrial action;

(vi) acts or regulations of any governmental or other agency;

(vii) suspension or delay of services at public registries by Third

Party Data Providers;

(viii) changes in law; or

(ix) any other reason beyond GroundSure's reasonable control.

In the event that GroundSure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then GroundSure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly

given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 GroundSure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at GroundSure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law

APPENDIX 4



GroundSure Envirolnsight

Address: Hales Sawmills, Western Way, Market Drayton,
Date: 14 Jan 2015
Reference: GS-1846221
Client: Pam Brown Associates



Aerial Photograph Capture date: 28-Mar-2012
Grid Reference: 367521,335646
Site Size: 0.13ha

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Environmental Permits, Incidents and Registers		On-site	0-50m	51-250	251-500		
1.1 Industrial Sites Holding Environmental Permits and/or Authorisations							
1.1.1	Records of historic IPC Authorisations	0	0	0	0		
1.1.2	Records of Part A(1) and IPPC Authorised Activities	0	0	0	0		
1.1.3	Records of Water Industry Referrals (potentially harmful discharges to the public sewer)	0	0	0	0		
1.1.4	Records of Red List Discharge Consents (potentially harmful discharges to controlled waters)	0	0	0	0		
1.1.5	Records of List 1 Dangerous Substances Inventory sites	0	0	0	0		
1.1.6	Records of List 2 Dangerous Substances Inventory sites	0	0	0	0		
1.1.7	Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0		
1.1.8	Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0		
1.1.9	Records of Licensed Discharge Consents	0	0	0	3		
1.1.10	Records of Planning Hazardous Substance Consents and Enforcements	0	0	0	0		
1.2	Records of COMAH and NIHHS sites	0	0	0	0		
1.3 Environment Agency Recorded Pollution Incidents							
1.3.1	National Incidents Recording System, List 2	0	0	3	0		
1.3.2	National Incidents Recording System, List 1	0	0	0	0		
1.4	Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0		
Section 2: Landfill and Other Waste Sites		On-site	0-50m	51-250	251-500	501-1000	1000-5000
2.1 Landfill Sites							
2.1.1	Environment Agency Registered Landfill Sites	0	0	0	0	0	Not searched
2.1.2	Environment Agency Historic Landfill Sites	0	0	0	0	0	0
2.1.3	BGS/DoE Landfill Site Survey	0	0	0	0	0	0
2.1.4	GroundSure Local Authority Landfill Sites Data	0	0	0	0	1	0
2.2 Landfill and Other Waste Sites Findings							
2.2.1	Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
2.2.2	Environment Agency Licensed Waste Sites	0	0	0	0	0	0

Section 3: Current Land Use	On-site	0-50m	51-250	251-500
3.1 Current Industrial Sites Data	0	0	0	Not searched
3.2 Records of Petrol and Fuel Sites	0	0	0	0
3.3 Underground High Pressure Oil and Gas Pipelines	0	0	0	0

Section 4: Geology

4.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
4.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes
4.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 5: Hydrogeology and Hydrology

	0-500m
5.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes
5.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
5.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	4	12
5.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	1
5.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	1	4
5.6 Source Protection Zones (within 500m of the study site)	1	0	0	0	Not searched	Not searched
5.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
5.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	1	0	Not searched	Not searched
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
5.9 Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	Yes	Yes
5.10 Detailed River Network entries within 500m of the site	0	1	1	8	Not searched	Not searched
5.11 Surface water features within 250m of the study site	No	Yes	Yes	Not searched	Not searched	Not searched

Section 6: Flooding

6.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	No
6.2 Are there any Environment Agency Zone 3 floodplains within 250m of the study site?	No
6.3 Are there any Flood Defences within 250m of the study site?	No
6.4 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
6.5 Are there any areas used for Flood Storage within 250m of the study site?	No
6.6 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Potential at Surface
6.7 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Moderate

Section 7: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
7.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
7.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
7.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
7.5 Records of Ramsar sites	0	0	0	0	0	0
7.6 Records of Ancient Woodlands	0	0	0	0	0	0
7.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
7.8 Records of World Heritage Sites	0	0	0	0	0	0
7.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
7.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
7.11 Records of National Parks	0	0	0	0	0	0
7.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
7.13 Records of Nitrate Vulnerable Zones	1	0	1	0	1	0
7.14 Records of Green Belt Data	0	0	0	0	0	0

Section 8: Natural Hazards

8.1 What is the maximum risk of natural ground subsidence?	Very Low
8.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Very Low
8.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
8.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
8.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
8.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
8.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Very Low

Section 9: Mining

9.1 Are there any coal mining areas within 75m of the study site?	No
9.2 What is the risk of subsidence relating to shallow mining within 150m of the study site?	Negligible
9.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between GroundSure and the Client. The document contains the following sections:

1. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

2. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

3. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure underground oil and gas pipelines.

4. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

5. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

6. Flooding

Provides information on surface water flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

7. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

8. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence.

9. Mining

Provides information on areas of coal and shallow mining.

10. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, GroundSure provide a free Technical Helpline (08444 159000) for further information and guidance.

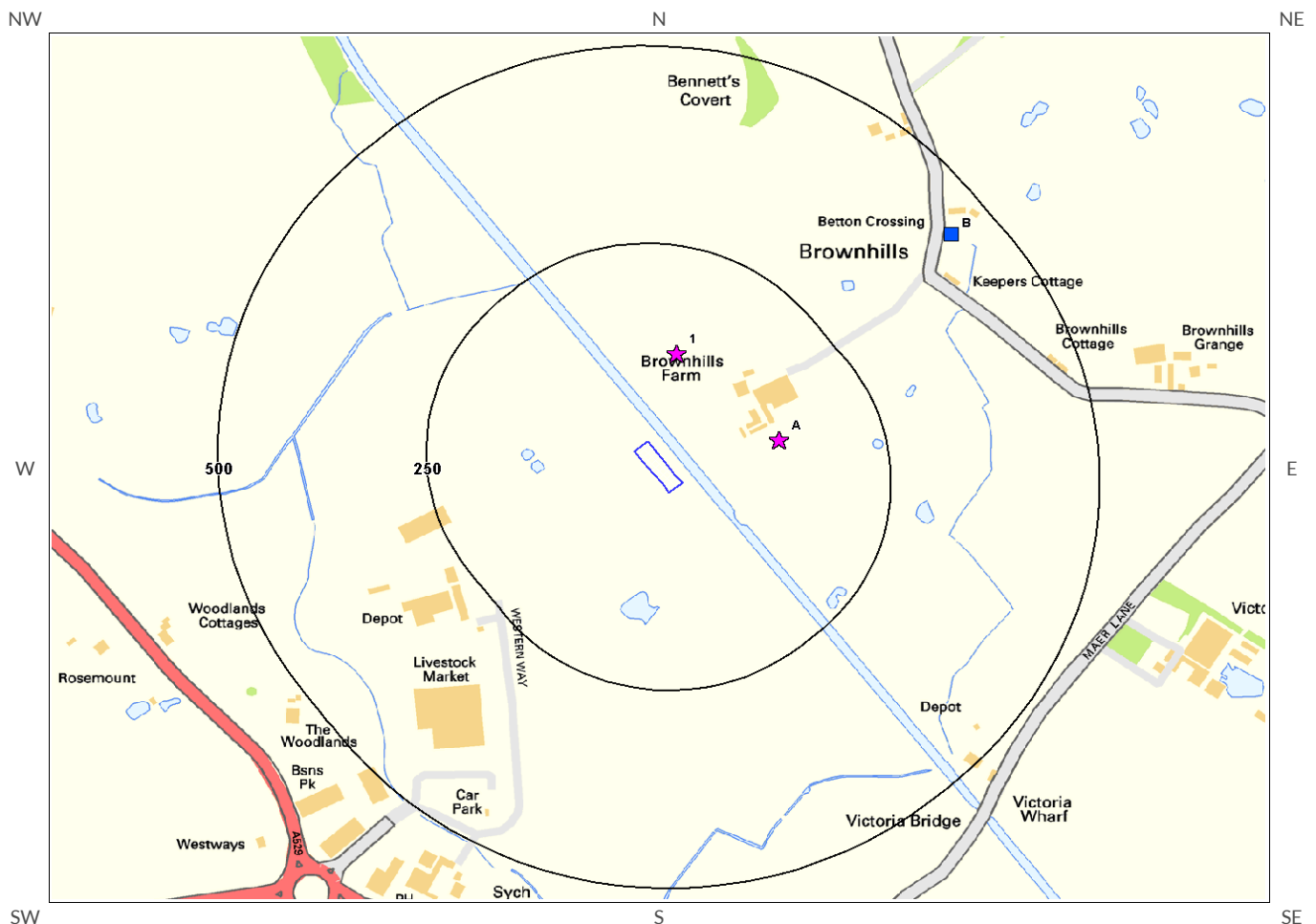
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.


1. Environmental Permits, Incidents and Registers Map



Environmental Permits, Incidents and Registers Legend

Mapping sourced from 

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- | | | | | | |
|-------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------|
|  | Site Outline |  | Recorded Pollution Incident |  | RAS 3 & 4 Authorisations |
|  | Search Buffers (m) |  | Dangerous Substances (List 1) |  | Part A(1) Authorised Processes and Historic IPC Authorisations |
| | |  | Dangerous Substances (List 2) |  | Part A(2) and Part B Authorised Processes |
| | |  | Water Industry Referrals |  | COMAH / NIHHS Sites |
| | |  | Licenced Discharge Consents |  | Sites Determined as Contaminated Land |
| | |  | Red List Discharge Consents |  | Hazardous Substance Consents and Enforcements |



1. Environmental Permits, Incidents and Registers

1.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

1.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

1.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

1.1.3 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

1.1.4 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

1.1.5 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

1.1.6 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

1.1.7 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

0

Database searched and no data found.

1.1.8 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

1.1.9 Records of Licensed Discharge Consents within 500m of the study site:

3

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance	Direction	NGR	Details	
4B	447.0	NE	367880 335960	Address: Betton Stw, Betton, Near Market Drayton, Shropshire Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company Permit Number: 016810050 Permit Version: 1	Receiving Water: Trib River Duckow Status: Revoked - Unspecified Issue date: - Effective Date: 12/1/1980 Revocation Date: 30/1/1985
5B	447.0	NE	367880 335960	Address: Betton Stw, Betton, Near Market Drayton, Shropshire Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company Permit Number: 016810050 Permit Version: 2	Receiving Water: Trib River Duckow Status: Revoked - Unspecified Issue date: - Effective Date: 31/1/1985 Revocation Date: -
6B	447.0	NE	367880 335960	Address: Betton Stw, Betton, Near Market Drayton, Shropshire Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company Permit Number: 016810050 Permit Version: 3	Receiving Water: Trib River Duckow Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: - Effective Date: - Revocation Date: -

1.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

1.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

1.3 Environment Agency Recorded Pollution Incidents

1.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site: 3

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance	Direction	NGR	Details	
1	116.0	N	367550 335810	Incident Date: 30/09/2001 Incident Identification: 33928 Pollutant: Agricultural Materials and Wastes Pollutant Description: Slurry and Dilute Slurry	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
2A	127.0	NE	367673 335701	Incident Date: 19/07/2002 Incident Identification: 92841 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
3A	127.0	NE	367673 335701	Incident Date: 19/07/2002 Incident Identification: 92841 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

1.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site: 0

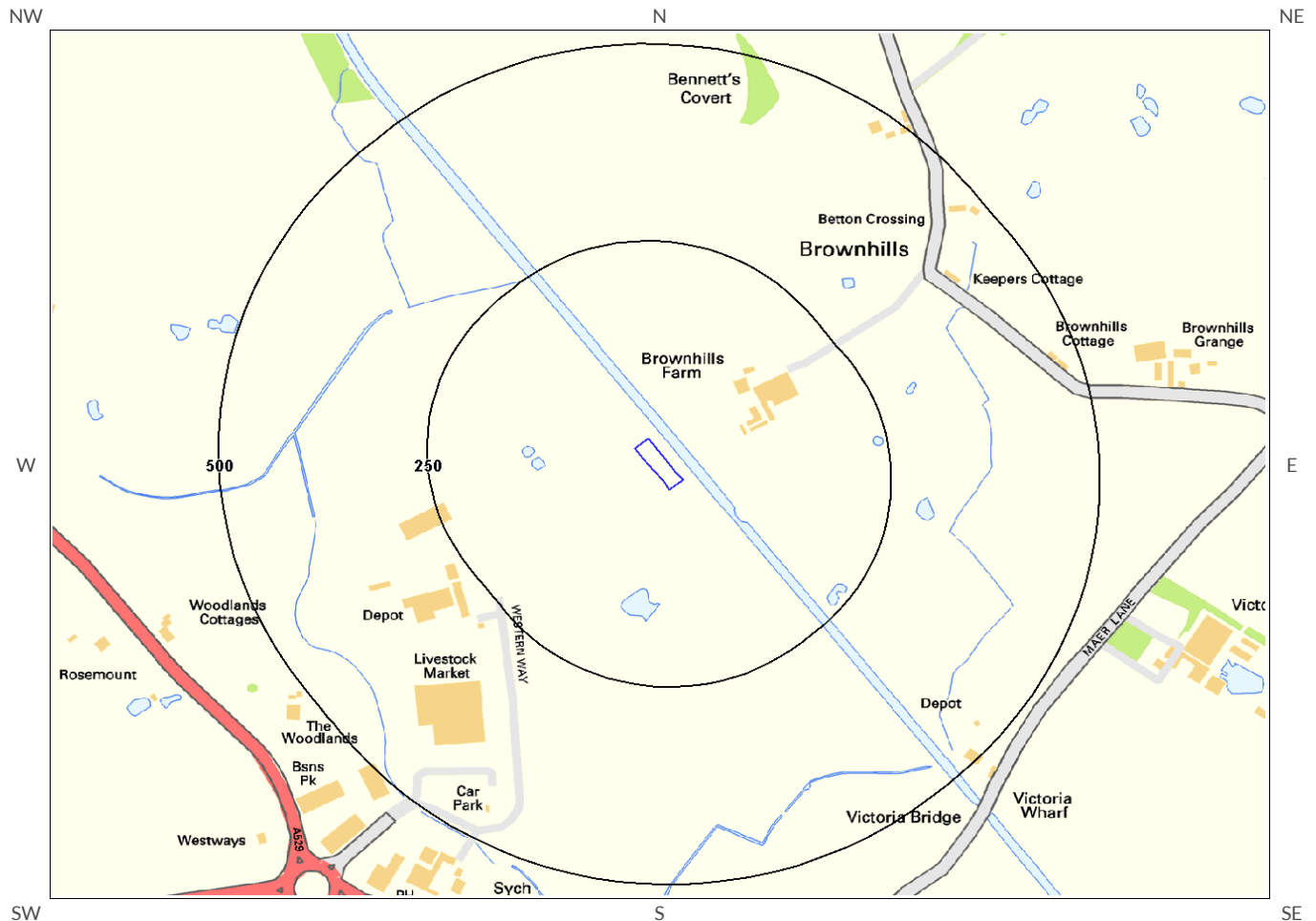
Database searched and no data found.

1.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site? 0

Database searched and no data found.









2. Landfill and Other Waste Sites Map



Landfill and Other Waste Sites Legend



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- | | | | | | |
|-------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|----------------------------------|
|  | Site Outline |  | E.A. Active Landfill |  | Historic and Planned Waste Sites |
|  | Search Buffers (m) |  | E.A. Historic Landfill |  | E.A. Licensed Waste Site |
| | |  | Local Authority Landfill |  | BGS / DoE Survey Landfill |



2. Landfill and Other Waste Sites

2.1 Landfill Sites

2.1.1 Records from Environment Agency landfill data within 1000m of the study site:

0

Database searched and no data found.

2.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site:

0

Database searched and no data found.

2.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

2.1.4 Records of Local Authority landfill sites within 1500m of the study site:

1

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	813.0	E		Refuse Tip	1964 mapping	Polygon

2.2 Other Waste Sites

2.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

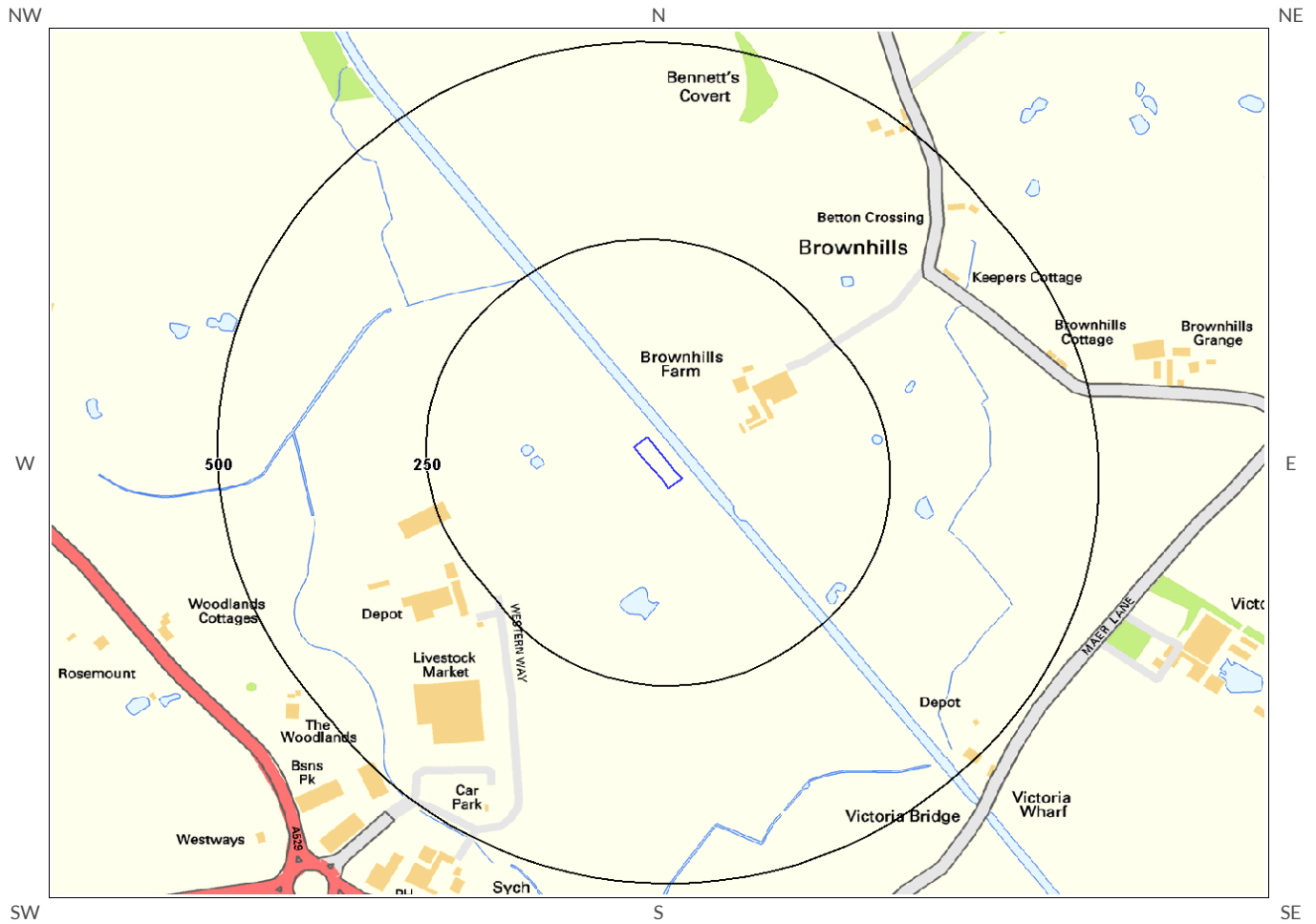
Database searched and no data found.

2.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site:

0

Database searched and no data found.







3. Current Land Use Map



Current Land Use Legend



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-  Site Outline
-  Current Industrial Sites
-  Petrol & Fuel Sites
-  Underground High Pressure Oil & Fuel Pipelines
-  250 Search Buffers (m)
-  500 Search Buffers (m)



3. Current Land Uses

3.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 0

Database searched and no data found.

3.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

3.3 Underground High Pressure Oil and Gas Pipelines

Records of high pressure underground pipelines within 500m of the study site: 0

Database searched and no data found.



4. Geology

4.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

4.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

4.3 Bedrock and Solid Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
BOM-MDST	BOLLIN MUDSTONE MEMBER	MUDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

5. Hydrogeology and Hydrology

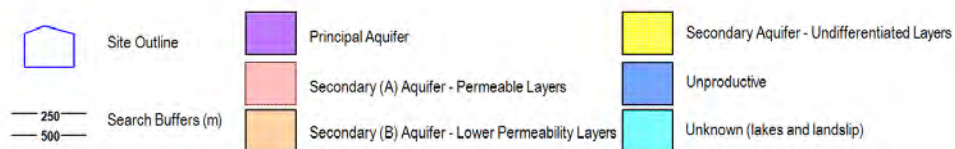
5a. Aquifer Within Superficial Geology



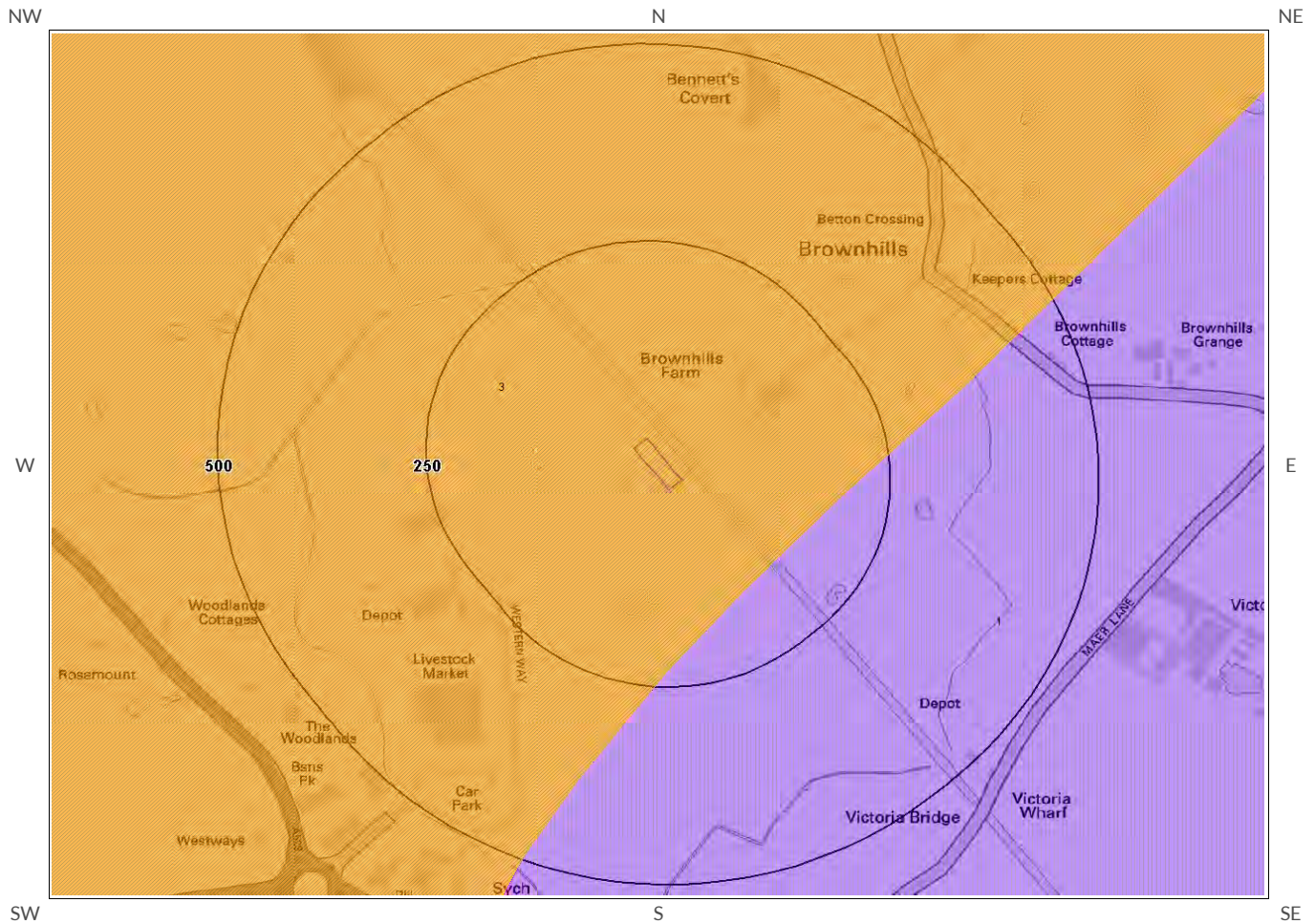
Aquifer Within Superficial Geology



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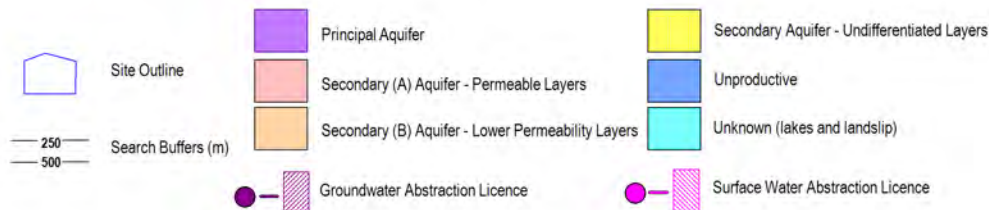
5b. Aquifer Within Bedrock Geology and Abstraction Licenses



Aquifer Within Bedrock Geology and Abstraction Licenses



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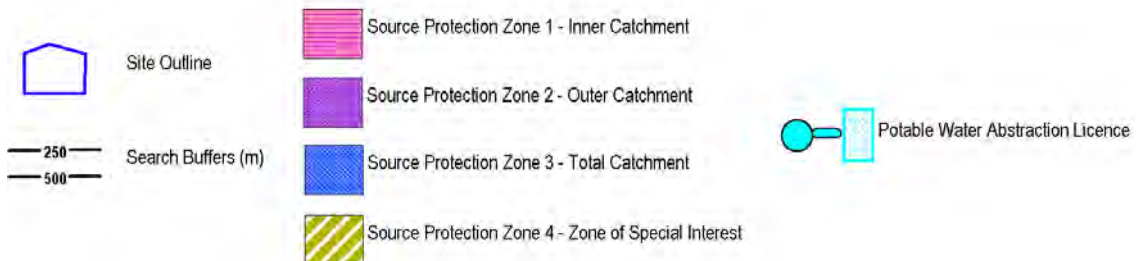
5c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



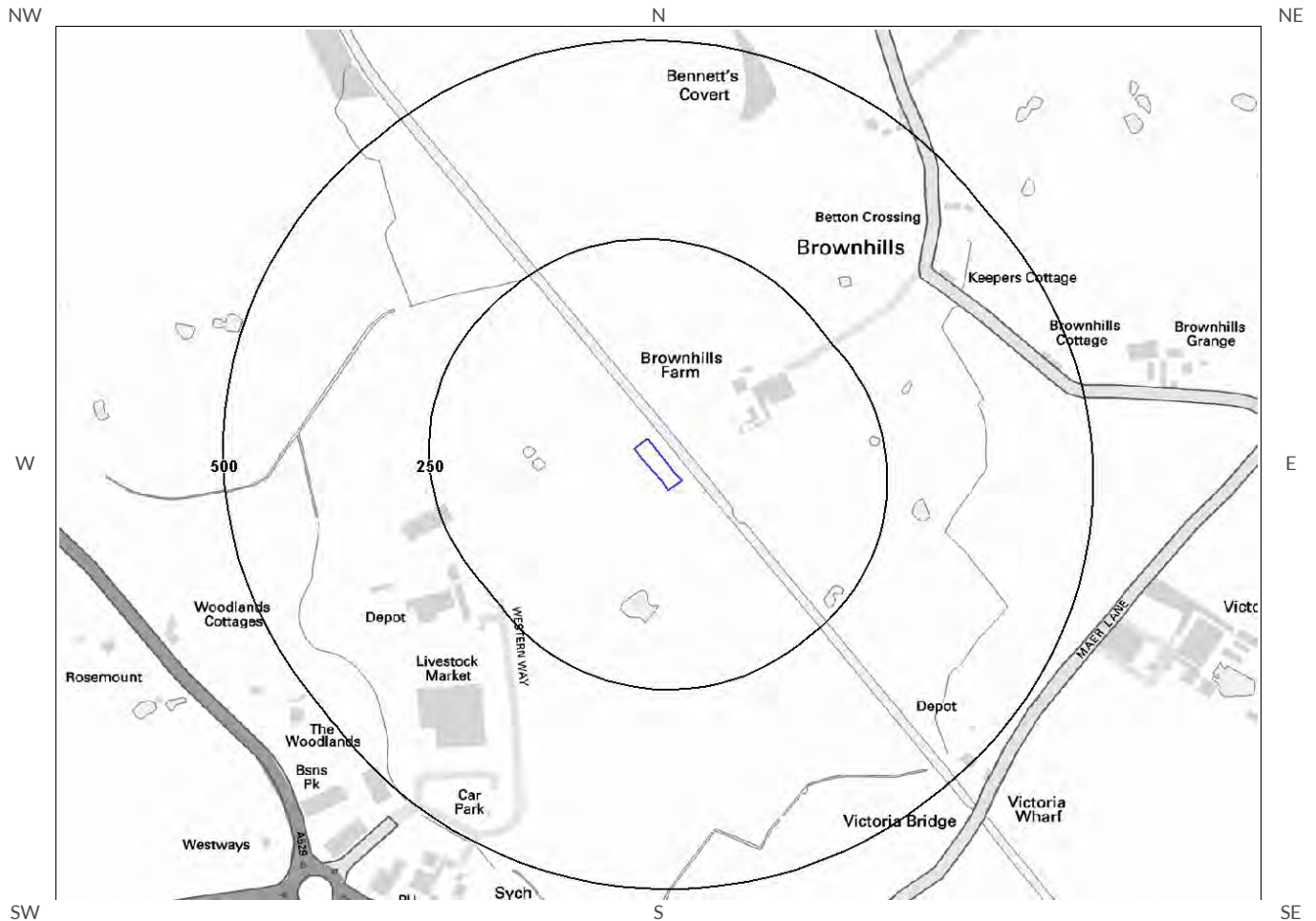
Map Legend
Source Protection Zones and
Potable Water Abstraction Licenses



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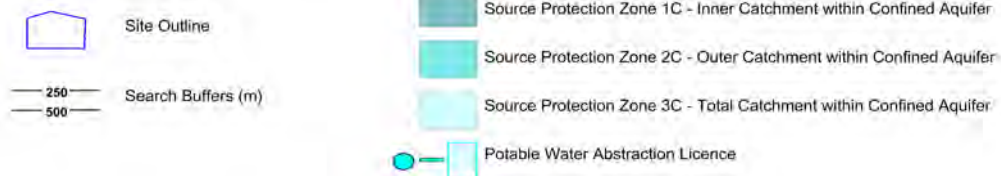
5d. Hydrology Source Protection Zones within confined aquifer



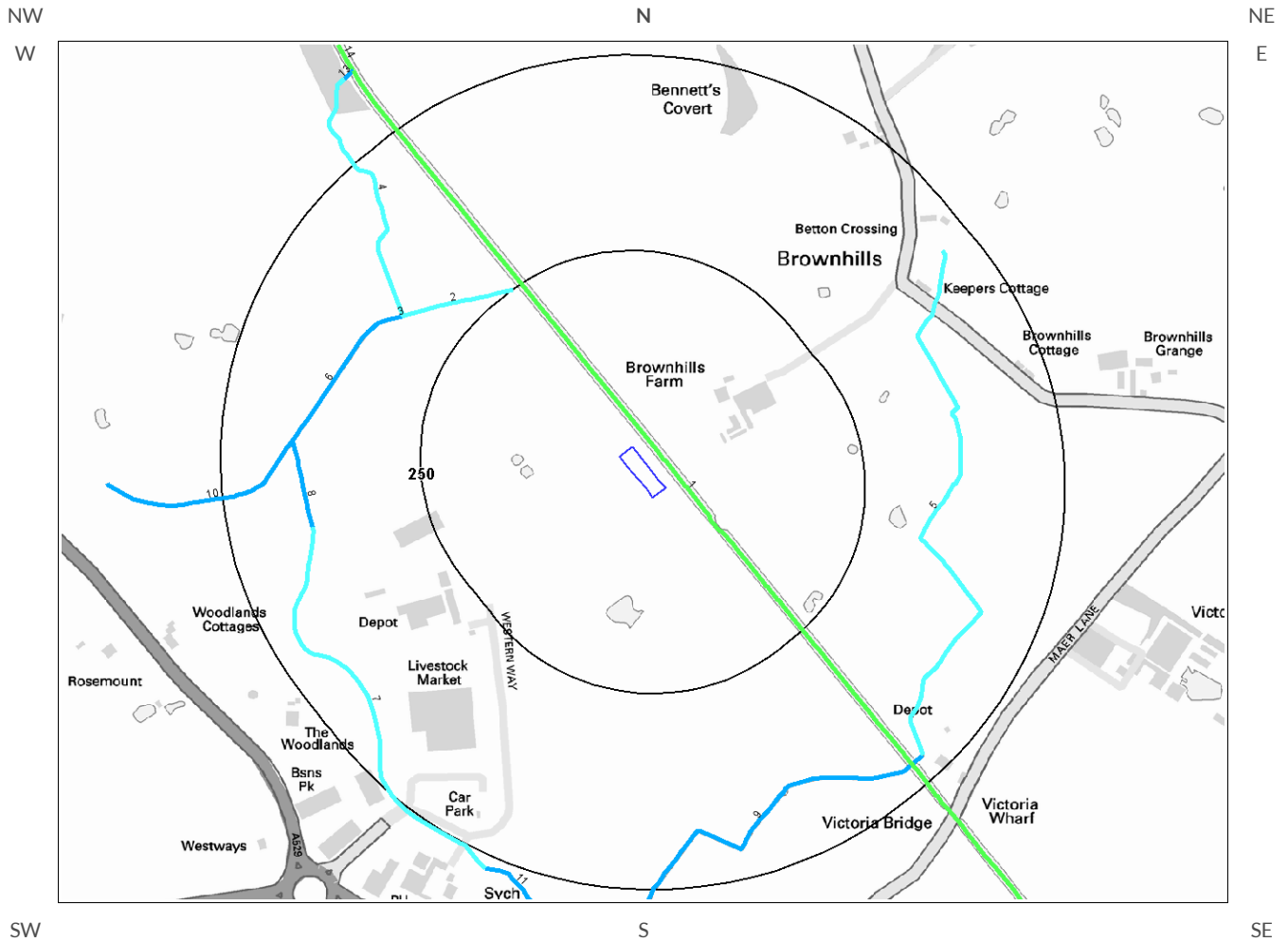
Hydrology Source Protection Zones



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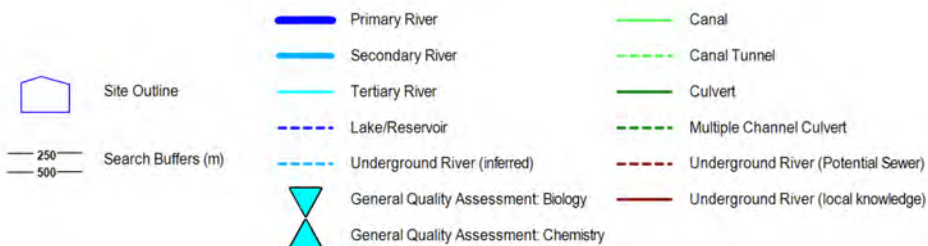
5 e. Hydrology – Detailed River Network and River Quality



Hydrology – Detailed River Network and River Quality

Mapping sourced from Ordnance Survey

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5. Hydrogeology and Hydrology

5.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? **Yes**

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the GroundSure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (5a):

ID	Distance (m)	Direction	Designation	Description
5	0.0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

5.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? **Yes**

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the GroundSure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (5b):

ID	Distance (m)	Direction	Designation	Description
3	0.0	On Site	Secondary B	Predominantly lower permeability layers which may store/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
1	151.0	SE	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

5.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site?

Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (5b):

ID	Distance (m)	Direction	NGR	Details
Not shown	695.0	S	367580 334940	Licence No: 2568001257 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole At Maer Lane, Market Drayton, Shropshire Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 2277 Original Start Date: 26/3/1998 Expiry Date: 26/03/2008 Issue No: 100 Version Start Date: 26/3/1998 Version End Date:
Not shown	695.0	S	367580 334940	Licence No: 2568001257 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole At Maer Lane, Market Drayton, Shropshire Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 2277 Original Start Date: 26/3/1998 Expiry Date: 26/03/2008 Issue No: 100 Version Start Date: 26/3/1998 Version End Date:
Not shown	850.0	N	367800 336500	Licence No: 2568001152 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Borehole At Betton Moss Farm, Market Drayton Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 2070 Original Start Date: 3/3/1966 Expiry Date: - Issue No: 100 Version Start Date: 3/3/1966 Version End Date:
Not shown	850.0	N	367800 336500	Licence No: 2568001152 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "borehole At Betton Moss Farm, Market Drayton" Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 2070 Original Start Date: 3/3/1966 Expiry Date: - Issue No: 100 Version Start Date: 3/3/1966 Version End Date:
Not shown	1204.0	N	367600 336900	Licence No: 2568001048 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Borehole At Pear Tree Farm, Betton, Market Drayton Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 0236 Original Start Date: 14/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/1/1966 Version End Date:
Not shown	1204.0	N	367600 336900	Licence No: 2568001048 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "borehole At Pear Tree Farm, Betton, Market Drayton" Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 236 Original Start Date: 14/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/1/1966 Version End Date:
Not shown	1335.0	S	367600 334300	Licence No: 18/54/04/1244 Details: Process water Direct Source: Groundwater Midlands Region Point: Market Drayton - Borehole 2 Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 16/1/1989 Expiry Date: - Issue No: 100 Version Start Date: 16/1/1989 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1586.0	S	367630 334050	Licence No: 18/54/04/1422 Details: Process water Direct Source: Groundwater Midlands Region Point: Phoenix Bank, Market Drayton - Borehole Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: A/54/04/1455 Original Start Date: 15/11/2000 Expiry Date: 31/3/2011 Issue No: 1 Version Start Date: 15/11/2000 Version End Date:
Not shown	1586.0	S	367630 334050	Licence No: 18/54/04/1422 Details: Water Bottling Direct Source: Groundwater Midlands Region Point: Phoenix Bank, Market Drayton - Borehole Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: A/54/04/1455 Original Start Date: 15/11/2000 Expiry Date: 31/3/2011 Issue No: 1 Version Start Date: 15/11/2000 Version End Date:
Not shown	1586.0	S	367630 334050	Licence No: 18/54/04/1422/1 Details: Water Bottling Direct Source: Groundwater Midlands Region Point: Phoenix Bank, Market Drayton - Borehole Data Type: Point	Annual Volume (m ³): 12775 Max Daily Volume (m ³): 35 Original Application No: A/54/04/1455 Original Start Date: 6/6/2003 Expiry Date: - Issue No: 1 Version Start Date: 6/6/2003 Version End Date:
Not shown	1586.0	S	367630 334050	Licence No: 18/54/04/1422/1 Details: Process Water Direct Source: Groundwater Midlands Region Point: Phoenix Bank, Market Drayton - Borehole Data Type: Point	Annual Volume (m ³): 12775 Max Daily Volume (m ³): 35 Original Application No: A/54/04/1455 Original Start Date: 6/6/2003 Expiry Date: - Issue No: 1 Version Start Date: 6/6/2003 Version End Date:
Not shown	1591.0	SE	368640 334480	Licence No: 18/54/04/1255 Details: Fish Farm/Cress Pond Throughflow Direct Source: Groundwater Midlands Region Point: Broomhall Grange - Borehole Data Type: Point	Annual Volume (m ³): 239608 Max Daily Volume (m ³): 1964 Original Application No: - Original Start Date: 30/3/1990 Expiry Date: - Issue No: 100 Version Start Date: 30/3/1990 Version End Date:
Not shown	1672.0	SE	369000 334800	Licence No: 18/54/04/0939 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: Shiffords Bridge - Borehole 2 Data Type: Point	Annual Volume (m ³): 829645 Max Daily Volume (m ³): 3300 Original Application No: NPS/WR/005226 Original Start Date: 21/4/1969 Expiry Date: - Issue No: 102 Version Start Date: 22/10/2010 Version End Date:
Not shown	1713.0	SE	369100 334900	Licence No: 18/54/04/0939 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: Shiffords Bridge - Borehole 1 Data Type: Point	Annual Volume (m ³): 829645 Max Daily Volume (m ³): 3300 Original Application No: NPS/WR/005226 Original Start Date: 21/4/1969 Expiry Date: - Issue No: 102 Version Start Date: 22/10/2010 Version End Date:
Not shown	1905.0	N	367400 337600	Licence No: 2568001134 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Borehole At Betton Wood,market-Drayton,shropshire Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 1993 Original Start Date: 15/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 15/2/1966 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1905.0	N	367400 337600	Licence No: 2568001134 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "borehole At Betton Wood,market-Drayton,shropshire" Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 1993 Original Start Date: 15/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 15/2/1966 Version End Date:

5.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Yes

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (5b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1767.0	SE	369080 334750	Licence No: 18/54/04/1280 Details: Fish Farm/Cress Pond Throughflow Direct Source: Surface Water Midlands Region Point: Broomhall Grange - River Tern Data Type: Point Annual Volume (m ³): 7884000 Max Daily Volume (m ³): 21600 Application No: - Original Start Date: 3/4/1991 Expiry Date: - Issue No: 100 Version Start Date: 14/7/2003 Version End Date:

5.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (5c):

ID	Distance (m)	Direction	NGR	Details
Not shown	695.0	S	367580 334940	Licence No: 2568001257 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole At Maer Lane, Market Drayton, Shropshire Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 2277 Original Start Date: 26/3/1998 Expiry Date: 26/03/2008 Issue No: 100 Version Start Date: Version End Date:
Not shown	1586.0	S	367630 334050	Licence No: 18/54/04/1422/1 Details: Water Bottling Direct Source: Groundwater Midlands Region Point: Phoenix Bank, Market Drayton - Borehole Data Type: Point Annual Volume (m ³): 12775 Max Daily Volume (m ³): 35 Original Application No: A/54/04/1455 Original Start Date: 6/6/2003 Expiry Date: - Issue No: 1 Version Start Date: Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1586.0	S	367630 334050	Licence No: 18/54/04/1422 Details: Water Bottling Direct Source: Groundwater Midlands Region Point: Phoenix Bank, Market Drayton - Borehole Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: A/54/04/1455 Original Start Date: 15/11/2000 Expiry Date: 31/3/2011 Issue No: 1 Version Start Date: Version End Date:
Not shown	1672.0	SE	369000 334800	Licence No: 18/54/04/0939 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: Shiffords Bridge - Borehole 2 Data Type: Point	Annual Volume (m ³): 829645 Max Daily Volume (m ³): 3300 Original Application No: NPS/WR/005226 Original Start Date: 21/4/1969 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1713.0	SE	369100 334900	Licence No: 18/54/04/0939 Details: Potable Water Supply - Direct Direct Source: Groundwater Midlands Region Point: Shiffords Bridge - Borehole 1 Data Type: Point	Annual Volume (m ³): 829645 Max Daily Volume (m ³): 3300 Original Application No: NPS/WR/005226 Original Start Date: 21/4/1969 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:

5.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site?

Yes

The following Source Protection Zones records are represented on the SPZ and Potable Water Abstraction Map (5c):

ID	Distance (m)	Direction	Type	Description
1	0.0	On Site	3	Total Catchment

5.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site?

No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

5.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency information on groundwater vulnerability and soil leaching potential within 500m of the study site? Yes

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
132	SE	Major Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.

5.9 River Quality

Is there any Environment Agency information on river quality within 1500m of the study site? Yes

5.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (5d):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	1282.0	SE	368300 334600	River Name: Shropshire Union Canal (tern) Reach: Br Nr. Park Heath To Market Drayton End/Start of Stretch: End of Stretch NGR	F	E	E	E	E

5.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (5d):

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	922.0	SE	368100 334900	River Name: Shropshire Union Canal Reach: Qsl Market Drayton To Middlewich Branch End/Start of Stretch: Start of Stretch NGR	C	C	C	C	B
Not shown	1282.0	SE	368300 334600	River Name: Shropshire Union Canal Reach: Br Nr Park Heath To Market Drayton End/Start of Stretch: End of Stretch NGR	B	A	B	B	A
Not shown	1344.0	SE	368400 334600	River Name: Shropshire Union Canal Reach: Br Nr Park Heath To Market Drayton End/Start of Stretch: Sample Point NGR	B	A	B	B	A

5.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site?

Yes

The following Detailed River Network records are represented on the Hydrology Map (5e):

ID	Distance (m)	Direction	Details
1	21.0	NE	River Name: Shropshire Union Canal (Main Line) Welsh River Name: - Alternative Name: - River Type: Canal Main River Status: Currently Undefined
2	249.0	NW	River Name: - Welsh River Name: - Alternative Name: - River Type: Tertiary River Main River Status: Currently Undefined
3	325.0	NW	River Name: - Welsh River Name: - Alternative Name: - River Type: Tertiary River Main River Status: Currently Undefined
4	325.0	NW	River Name: - Welsh River Name: - Alternative Name: - River Type: Tertiary River Main River Status: Currently Undefined
5	326.0	E	River Name: - Welsh River Name: - Alternative Name: - River Type: Tertiary River Main River Status: Currently Undefined
6	327.0	NW	River Name: - Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
7	395.0	W	River Name: - Welsh River Name: - Alternative Name: - River Type: Tertiary River Main River Status: Currently Undefined
8	395.0	W	River Name: - Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
9	405.0	SE	River Name: - Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined
10	410.0	W	River Name: - Welsh River Name: - Alternative Name: - River Type: Secondary River Main River Status: Currently Undefined

5.11 Surface Water Features

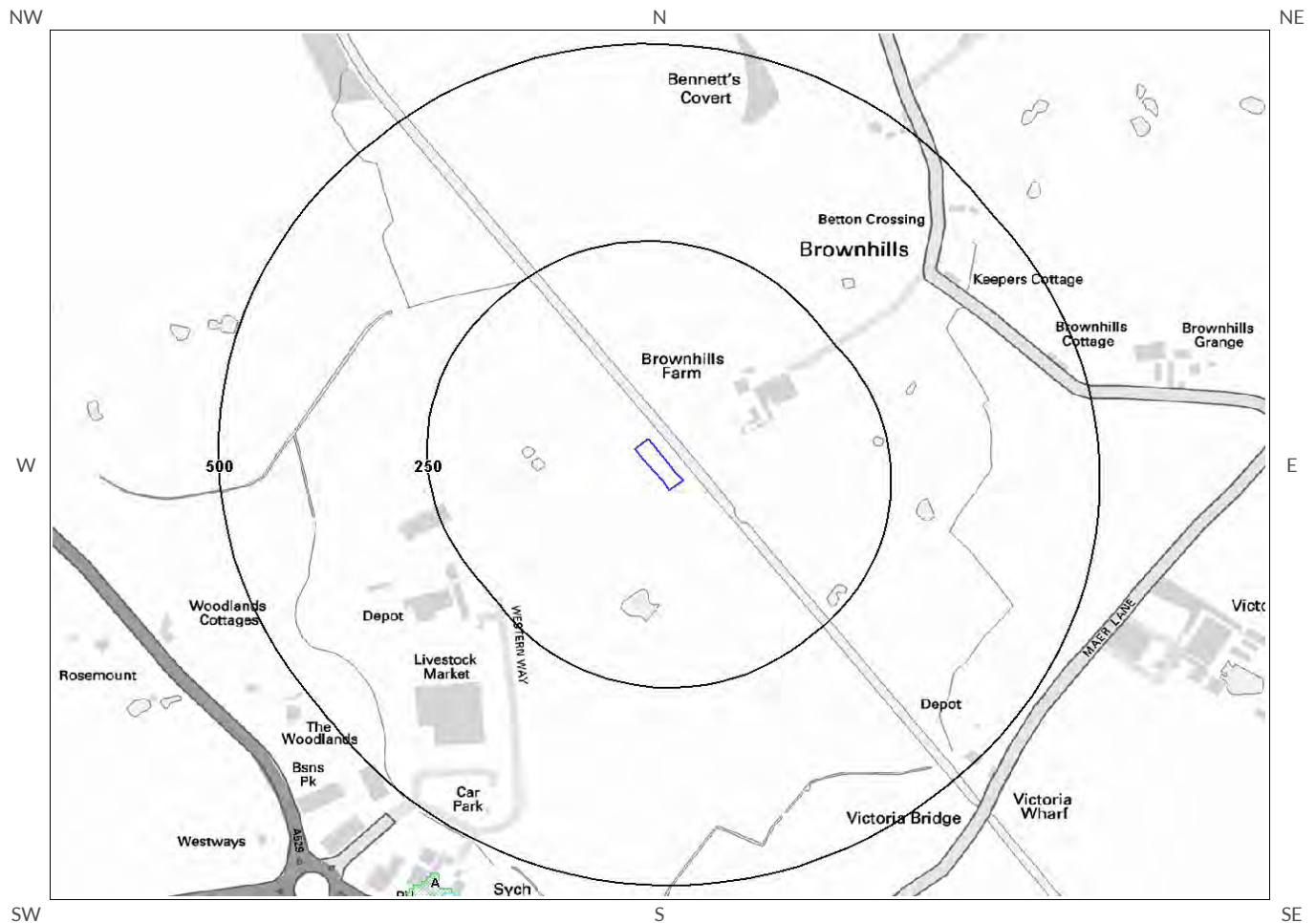
Are there any surface water features within 250m of the study site?

Yes

The following surface water records are not represented on mapping:

Distance (m)	Direction
15.0	NE
111.0	W
121.0	W
128.0	S
226.0	SE
249.0	NW

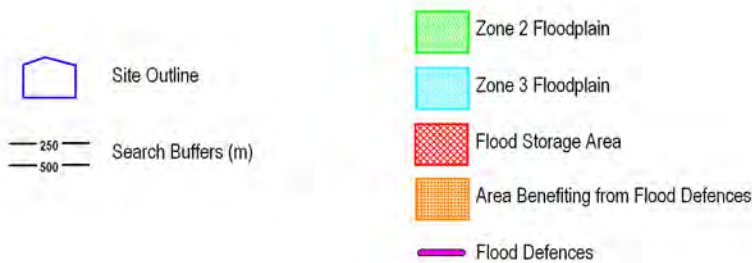
6. Environment Agency Flood Map for planning (from rivers and the sea)



Environment Agency Flood Map for planning (from rivers and the sea)



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6. Flooding

6.1 Zone 2 Flooding

Environment Agency Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 1 – Environment Agency Flood Map for Planning:

Is the site within 250m of an Environment Agency Zone 2 floodplain? No

Database searched and no data found.

6.2 Zone 3 Flooding

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 1 – Environment Agency Flood Map for Planning.

Is the site within 250m of an Environment Agency Zone 3 floodplain? No

Database searched and no data found.

6.3 Flood Defences

Are there any Flood Defences within 250m of the study site? No

Database searched and no data found.

6.4 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

6.5 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

6.6 Groundwater Flooding Susceptibility Areas

6.6.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site?

Yes

Does this relate to Clearwater Flooding or Superficial Deposits Flooding? Superficial Deposits Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

6.6.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

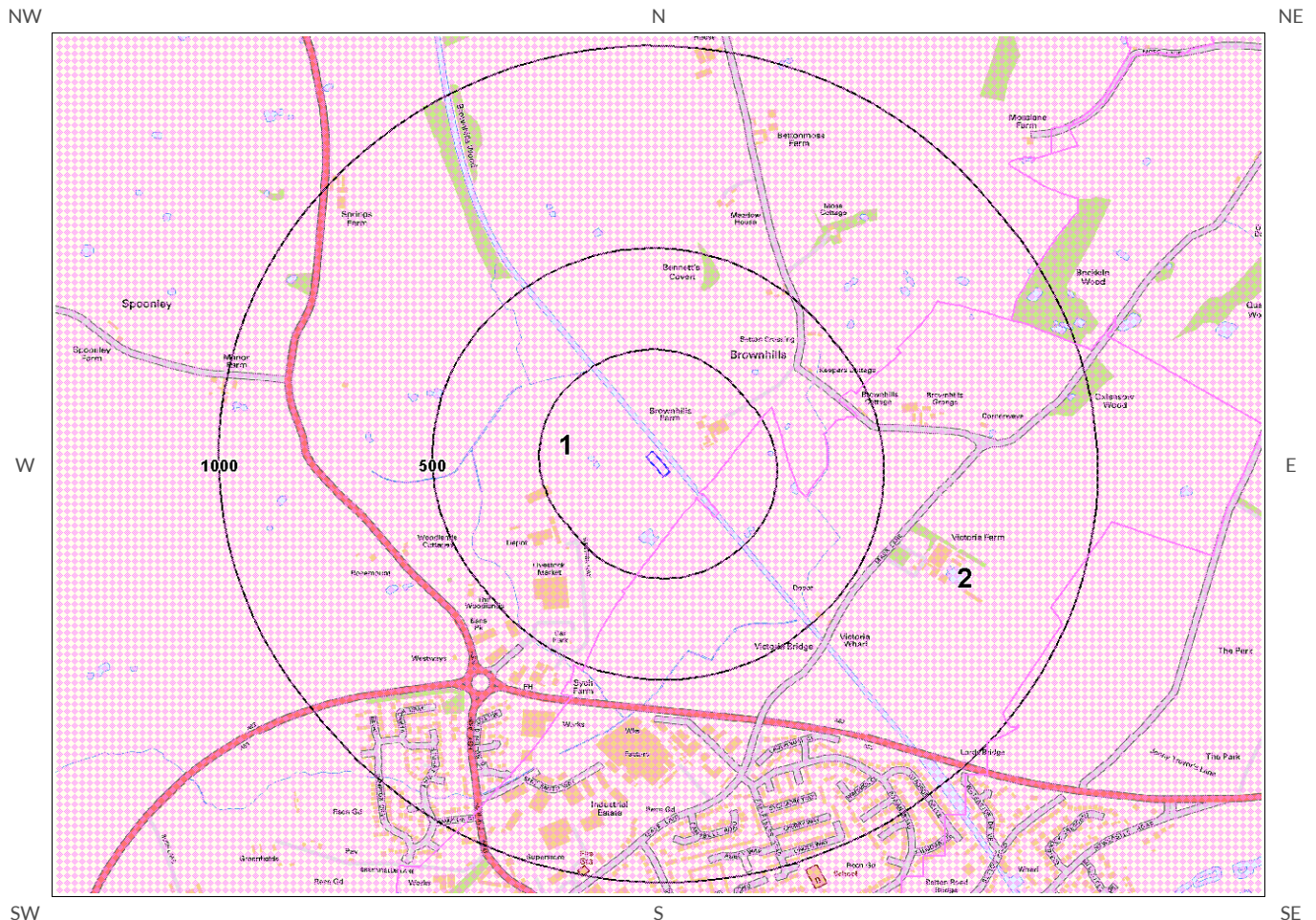
6.7 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result? Moderate

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

7. Designated Environmentally Sensitive Sites Map



Designated Environmentally Sensitive Sites Map



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7. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? Yes

7.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site: 0

Database searched and no data found.

7.2 Records of National Nature Reserves (NNR) within 2000m of the study site: 0

Database searched and no data found.

7.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site: 0

Database searched and no data found.

7.4 Records of Special Protection Areas (SPA) within 2000m of the study site: 0

Database searched and no data found.

7.5 Records of Ramsar sites within 2000m of the study site: 0

Database searched and no data found.

7.6 Records of Ancient Woodland within 2000m of the study site:

0

Database searched and no data found.

7.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

0

Database searched and no data found.

7.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

7.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

7.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

7.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

7.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

7.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

3

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
1	0.0	On Site	Existing	DEFRA
2	85.0	SE	Existing	DEFRA
3	883.0	NE	Existing	DEFRA

7.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.



8. Natural Hazards Findings

8.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **GroundSure GeoInsight**, available from our [website](#). The following information has been found:

8.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

8.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

* This indicates an automatically generated 50m buffer and site.

8.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site?

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

8.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site?

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

8.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

8.1.6 Running Sand

What is the maximum Running Sand** hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

* This indicates an automatically generated 50m buffer and site.



9. Mining

9.1 Coal Mining

Are there any coal mining areas within 75m of the study site?

No

Database searched and no data found.

9.2 Shallow Mining

What is the subsidence hazard relating to shallow mining on-site*?

Negligible

*Please note this data is searched with a 150m buffer.

9.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site?

No

Guidance: No Guidance Required.

Contact Details

GroundSure Helpline
Telephone: 08444 159 000
info@groundsure.com



British Geological Survey Enquiries

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BGS Geological Hazards Reports and general geological enquiries

Environment Agency

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Rotherham, S60 1BY
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Web: www.environment-agency.gov.uk
Email: enquiries@environment-agency.gov.uk



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Web: <http://www.shropshire.gov.uk/>
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Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England who retain the Copyright and Intellectual Property Rights for the data. PointX © Database Right/Copyright, Thomson Directories Limited © Copyright Link Interchange Network Limited © Database Right/Copyright and Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028].
This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.

Standard Terms and Conditions

1 Definitions

In these terms and conditions unless the context otherwise requires:

"Beneficiary" means the person or entity for whose benefit the Client has obtained the Services.

"Client" means the party or parties entering into a Contract with GroundSure.

"Commercial" means any building or property which is not Residential.

"Confidential Information" means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by GroundSure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

"Support Services" means Support Services provided by GroundSure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Contract" means the contract between GroundSure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

"Third Party Data Provider" means any third party providing Third Party Content to GroundSure.

"Data Reports" means reports comprising factual data with no accompanying interpretation.

"Fees" has the meaning set out in clause 5.1.

"GroundSure" means GroundSure Limited, a company registered in England and Wales under number 03421028.

"GroundSure Materials" means all materials prepared by GroundSure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

"Intellectual Property" means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

"Mapping" means a map, map data or a combination of historical maps of various ages, time periods and scales.

"Order" means an electronic, written or other order form submitted by the Client requesting Services from GroundSure in respect of a specified Site.

"Ordnance Survey" means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

"Order Website" means the online platform through which Orders may be placed by the Client and accepted by GroundSure.

"Report" means a Risk Screening Report or Data Report for Commercial or Residential property.

"Residential" means any building or property used as or intended to be used as a single dwelling.

"Risk Screening Report" means a risk screening report comprising factual data with an accompanying interpretation by GroundSure.

"Services" means any Report, Mapping and/or Support Services which GroundSure has agreed to provide by accepting an Order pursuant to clause 2.6.

"Site" means the area of land in respect of which the Client has requested GroundSure to provide the Services.

"Third Party Content" means data, database information or other information which is provided to GroundSure by a Third Party Data Provider.

"User Guide" means the user guide, as amended from time to time, available upon request from GroundSure and on the website (www.GroundSure.com) and forming part of this Contract.

2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 GroundSure agrees to provide the Services in accordance with the Contract.

2.2 GroundSure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions

implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. In addition you acknowledge and agree that GroundSure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 GroundSure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by GroundSure. GroundSure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by GroundSure. GroundSure's acceptance of an Order shall be binding only when made in writing and signed by GroundSure's authorised representative or when accepted through the Order Website.

3 The Client's obligations

3.1 The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to GroundSure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to GroundSure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as GroundSure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable GroundSure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the GroundSure Materials, or use the GroundSure Materials in a manner for which they were not intended. The Client may make the GroundSure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that GroundSure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

4 Reliance

4.1 The Client acknowledges that the Services provided by GroundSure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by GroundSure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

(i) the Beneficiary,

(ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),

(iv) the first purchaser or first tenant of the Site, and

(v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by GroundSure. Any party considering such Reports and Services does so at their own risk.

5 Fees and Disbursements

5.1 GroundSure shall charge and the Client shall pay fees at the rate and frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by GroundSure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

5.2 The Client shall pay all outstanding Fees to GroundSure in full without deduction, counterclaim or set off within 30 days of the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of GroundSure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

6 Intellectual Property and Confidentiality

6.1 Subject to

(i) full payment of all relevant Fees and

(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the GroundSure Materials.

6.2 All Intellectual Property in the GroundSure Materials are and shall remain owned by GroundSure or GroundSure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the GroundSure Materials shall:

(i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the GroundSure Materials in order to advise the Beneficiary in a professional capacity. However, GroundSure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

7. Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of GroundSure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by GroundSure or its employees, agents or subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death

or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 GroundSure shall not be liable for

- (i) loss of profits;
- (ii) loss of business;
- (iii) depletion of goodwill and/or similar losses;
- (iv) loss of anticipated savings;
- (v) loss of goods;
- (vi) loss of contract;
- (vii) loss of use;
- (viii) loss or corruption of data or information;
- (ix) business interruption;
- (x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

(xi) loss or damage that arise as a result of the use of all or part of the GroundSure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the GroundSure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of GroundSure's internet ordering service.

7.5 GroundSure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 GroundSure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of GroundSure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against GroundSure in relation to the Services or other matters arising pursuant to the Contract.

8 GroundSure's right to suspend or terminate

8.1 If GroundSure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, GroundSure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 GroundSure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to GroundSure within 30 days of the Payment Date; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or

(iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon GroundSure's acceptance of the Order; and

(ii) the Reports and/or Mapping provided under this Contract are

(a) supplied to the Client's specification(s) and in any event

(b) by their nature cannot be returned.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

(i) GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in

GroundSure's possession or control; and

(ii) the Client shall pay to GroundSure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination or suspension of the Contract.

11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of GroundSure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to GroundSure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through GroundSure.

12.3 GroundSure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of GroundSure.

12.4 No failure on the part of GroundSure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

- (i) the Client or Beneficiary's failure to provide facilities, access or information;
- (ii) fire, storm, flood, tempest or epidemic;
- (iii) Acts of God or the public enemy;
- (iv) riot, civil commotion or war;
- (v) strikes, labour disputes or industrial action;
- (vi) acts or regulations of any governmental or other agency;
- (vii) suspension or delay of services at public registries by Third Party Data Providers;
- (viii) changes in law; or
- (ix) any other reason beyond GroundSure's reasonable control.

In the event that GroundSure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then GroundSure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English

law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 GroundSure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at GroundSure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law. © GroundSure Limited June 2013

APPENDIX 5

Site Details:

Hales Sawmills, Western Way,
Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: County Series

Map date: 1880

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1880
Revised 1880
Edition N/A
Copyright N/A
Levelled N/A

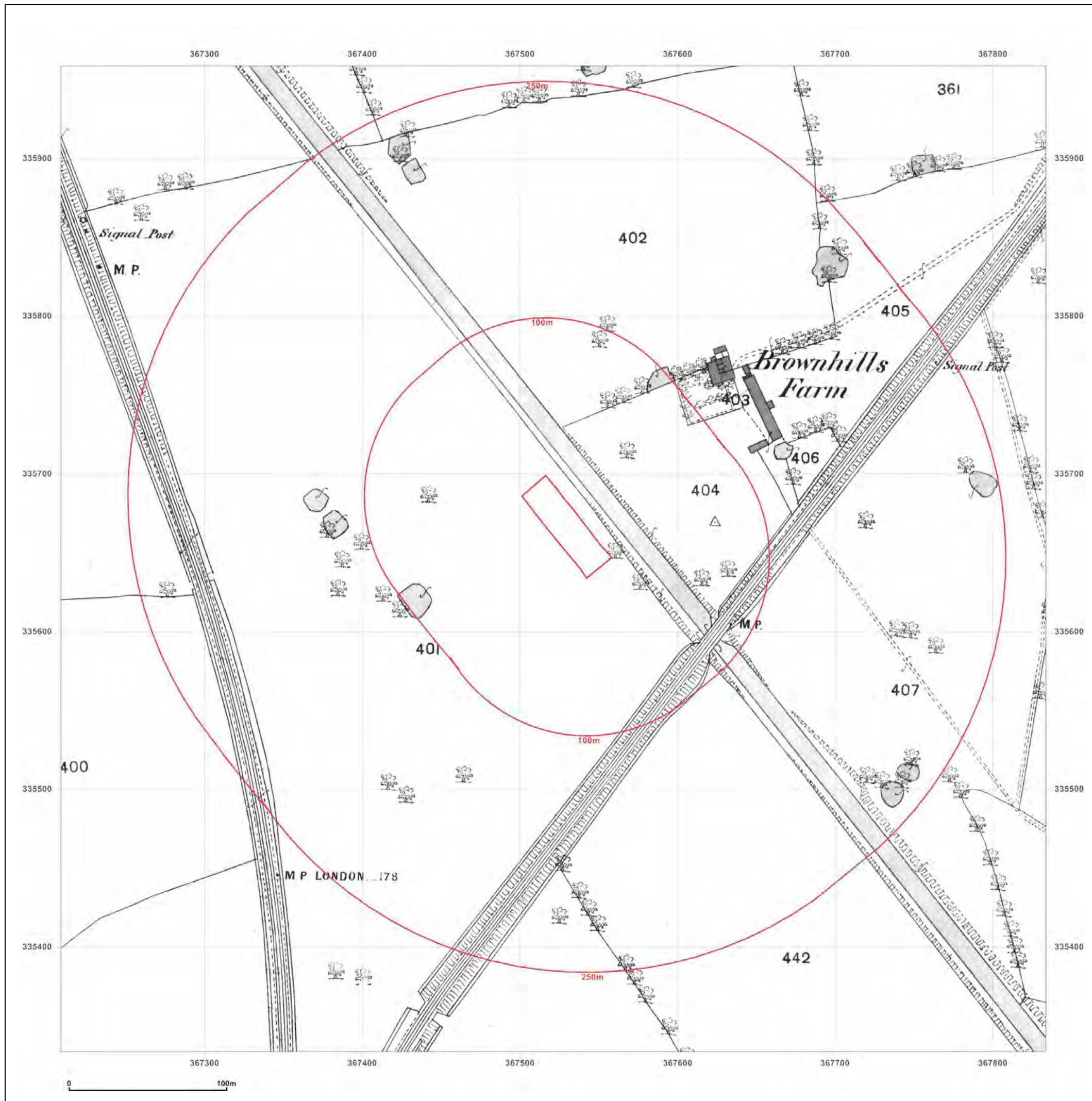


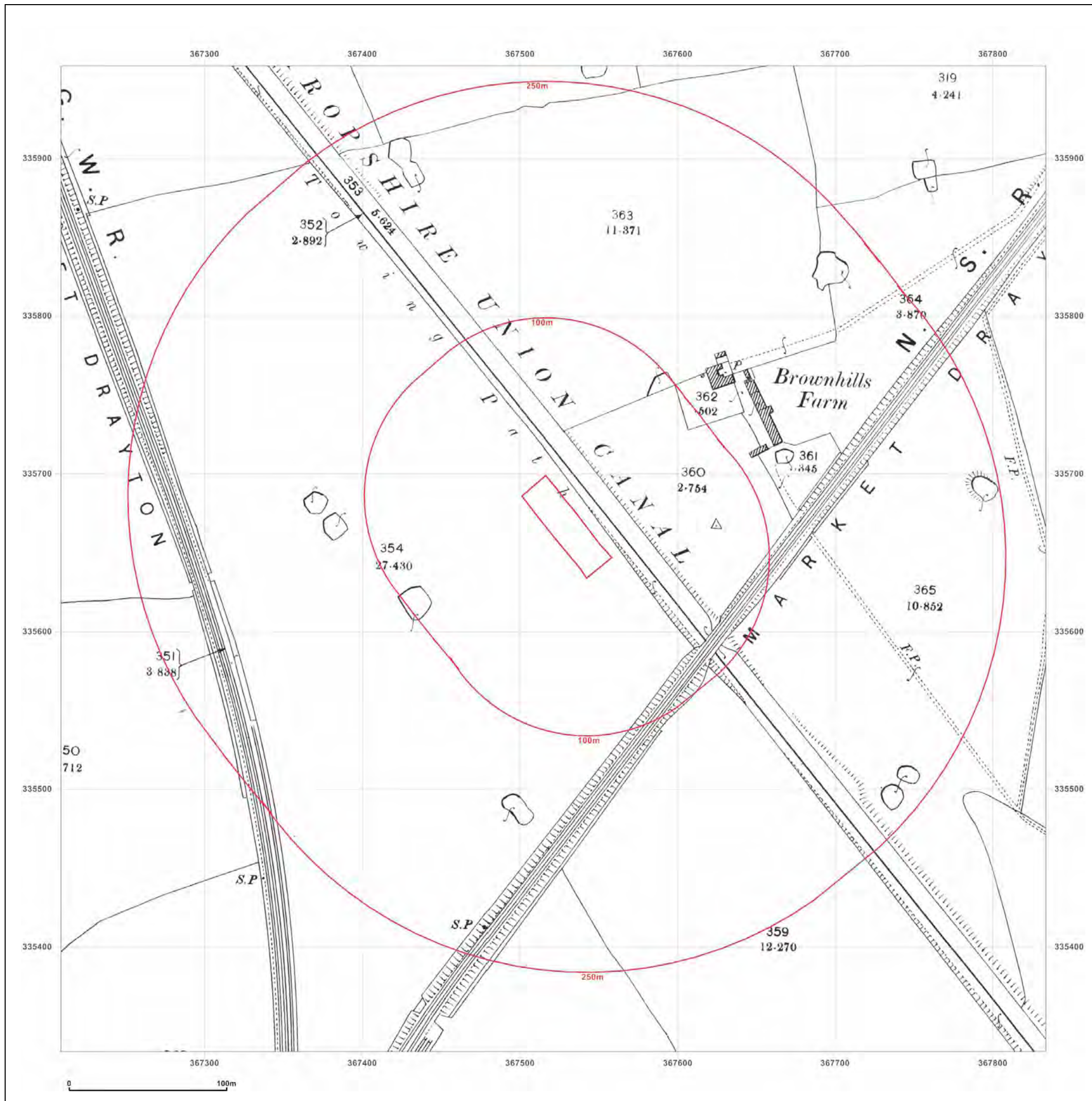
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Production date: 14 January 2015

To view map legend click here [Legend](#)





Site Details:

Hales Sawmills, Western Way,
Market Drayton

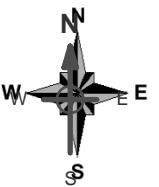
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Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: County Series

Map date: 1901

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1901
Revised 1901
Edition N/A
Copyright N/A
Levelled N/A

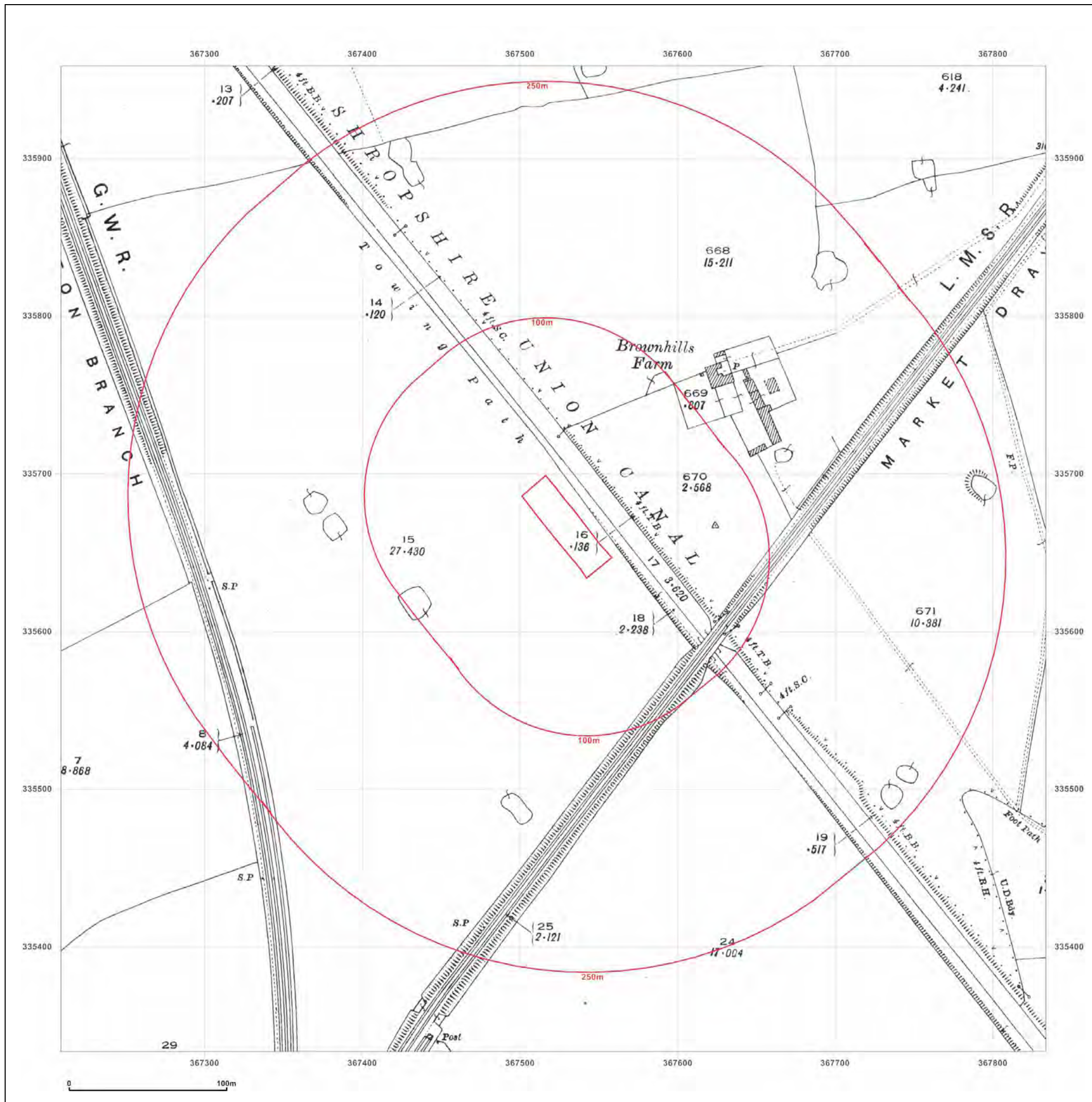


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Site Details:

Hales Sawmills, Western Way,
Market Drayton

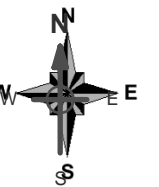
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Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: County Series

Map date: 1926

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Printed at: 1:2,500



Surveyed 1926
Revised 1926
Edition N/A
Copyright N/A
Levelled N/A

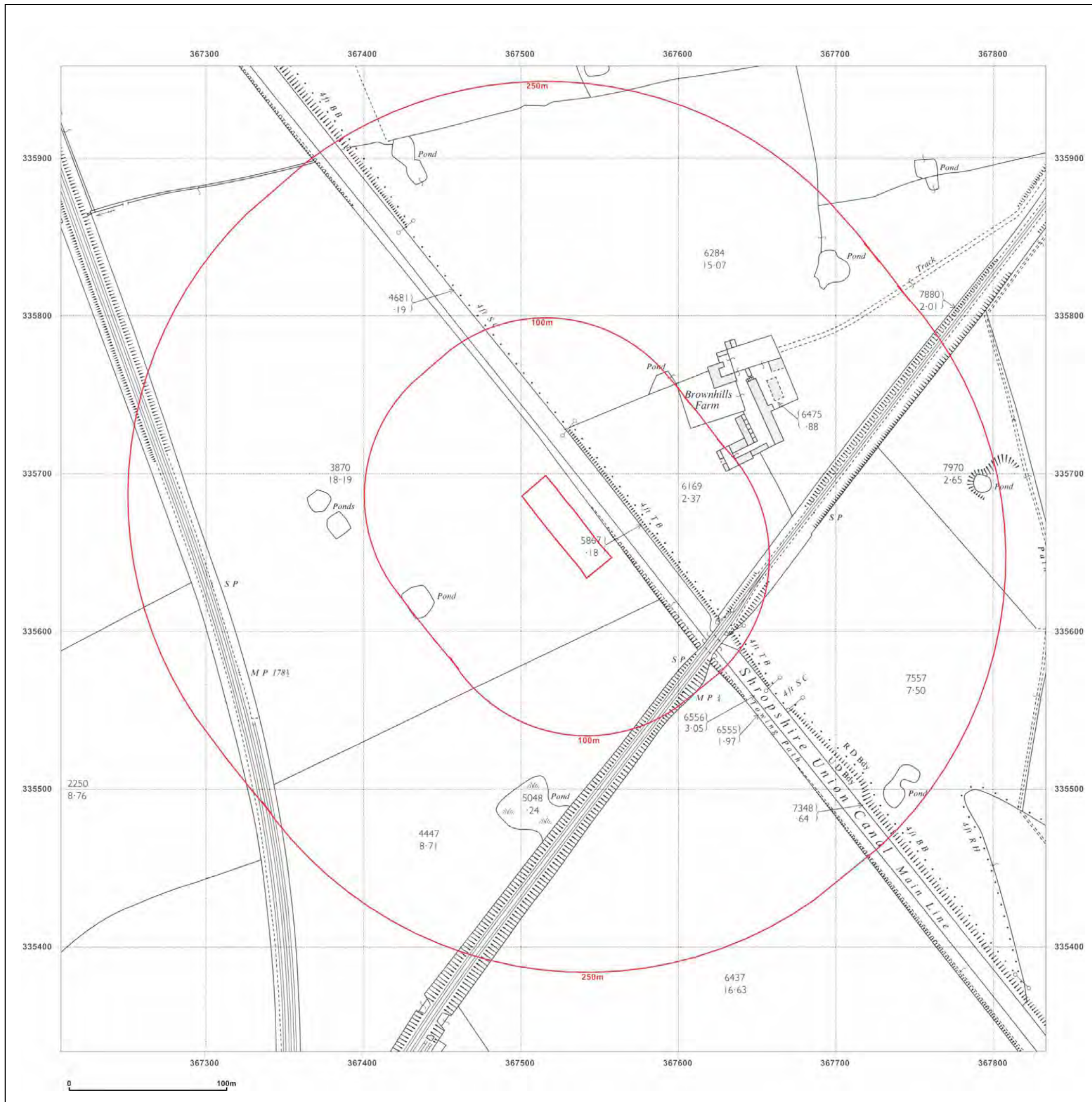


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Site Details:

Hales Sawmills, Western Way,
Market Drayton

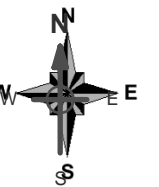
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Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: National Grid

Map date: 1965

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1961



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Site Details:

Hales Sawmills, Western Way,
Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: National Grid

Map date: 1977

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1977
Revised 1977
Edition N/A
Copyright 1978
Levelled 1968

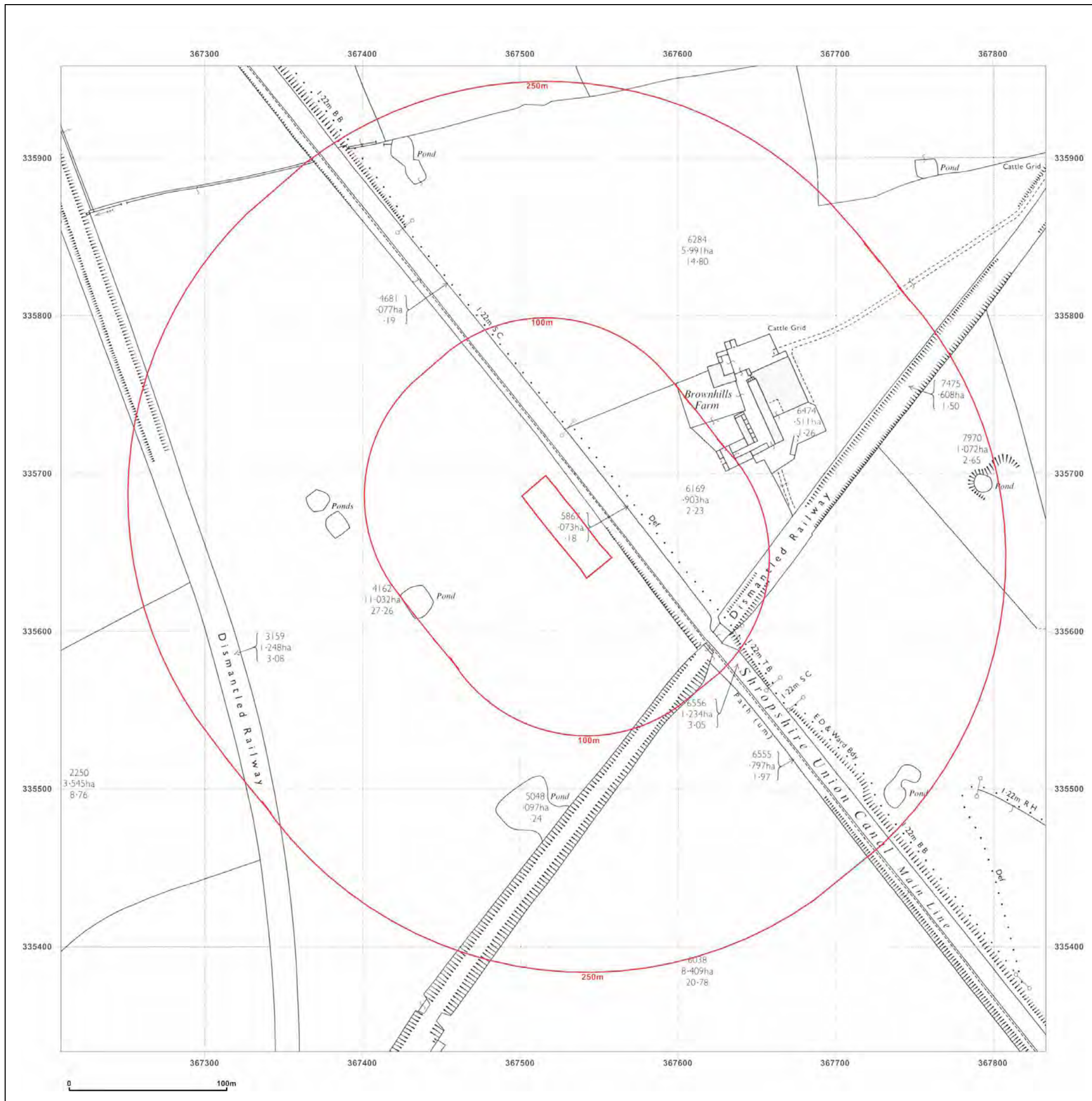


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Production date: 14 January 2015

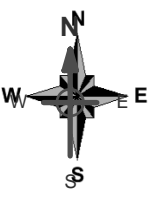
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Site Details:
 Hales Sawmills, Western Way,
 Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: National Grid
Map date: 1983
Scale: 1:2,500
Printed at: 1:2,500



Surveyed 1983
 Revised 1983
 Edition N/A
 Copyright 1985
 Levelled 1968

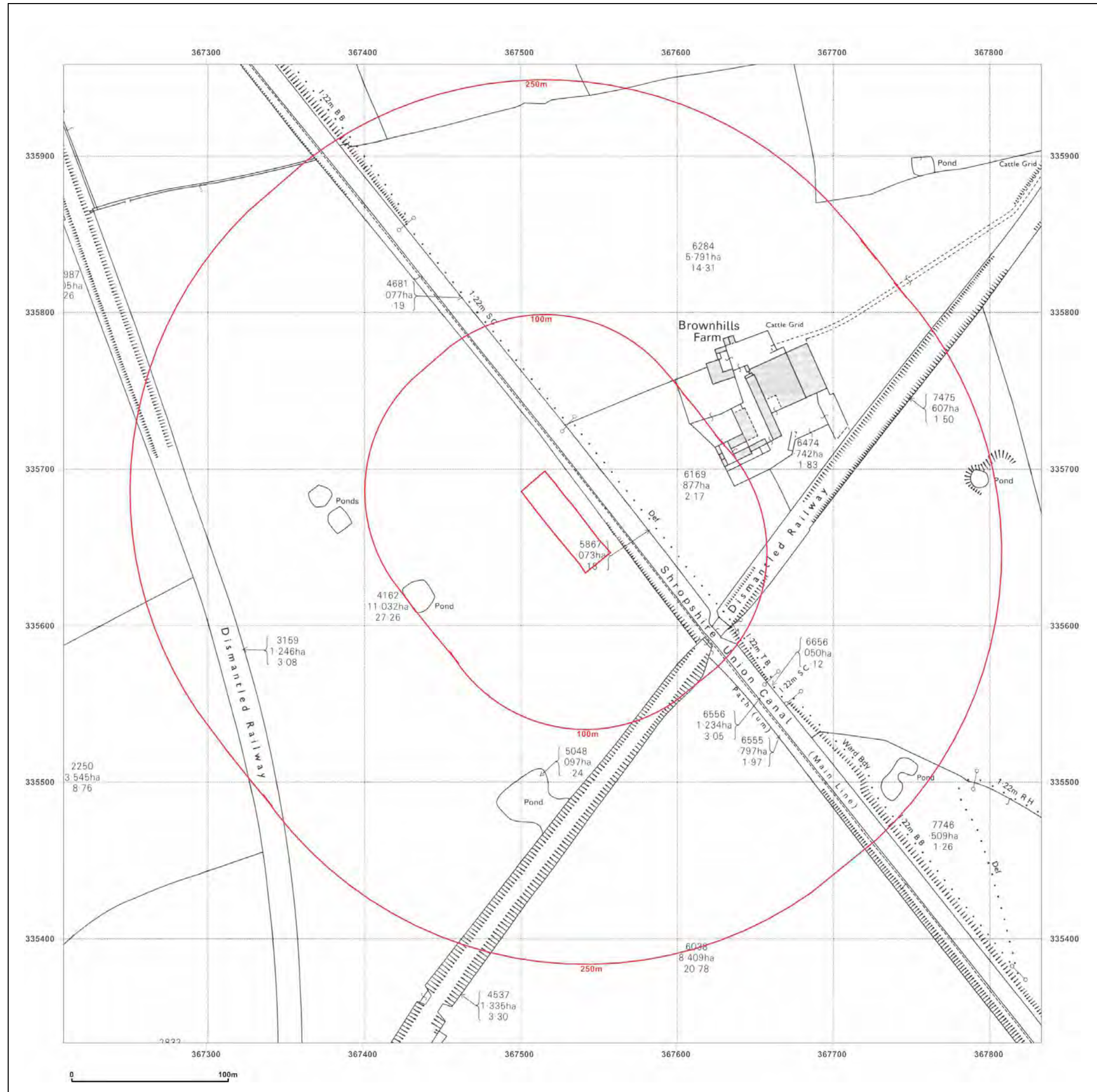
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Site Details:

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Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: National Grid

Map date: 1985

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1961
Revised 1983
Edition N/A
Copyright 1985
Levelled 1981

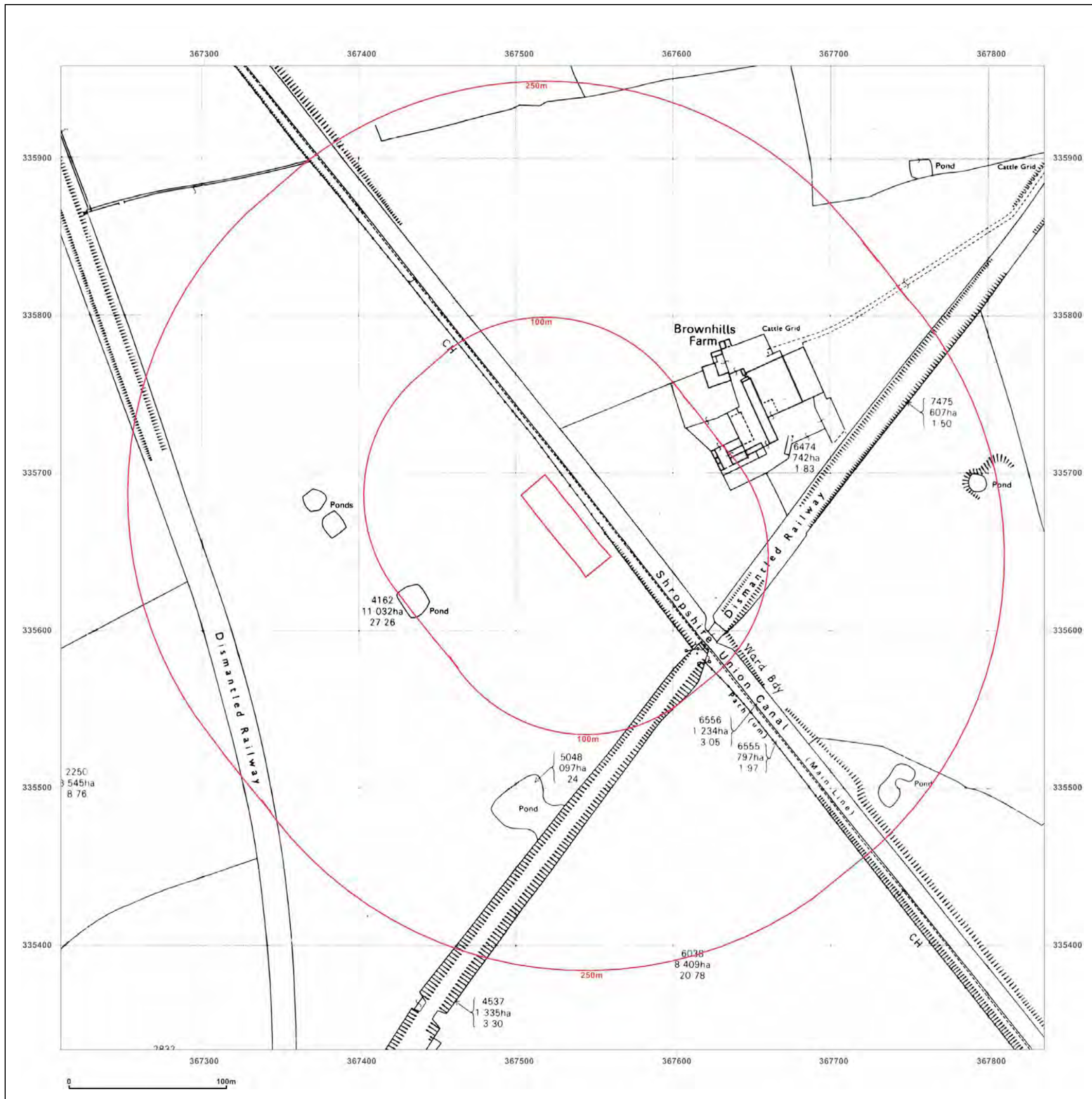


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Site Details:

Hales Sawmills, Western Way,
Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: National Grid

Map date: 1989

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

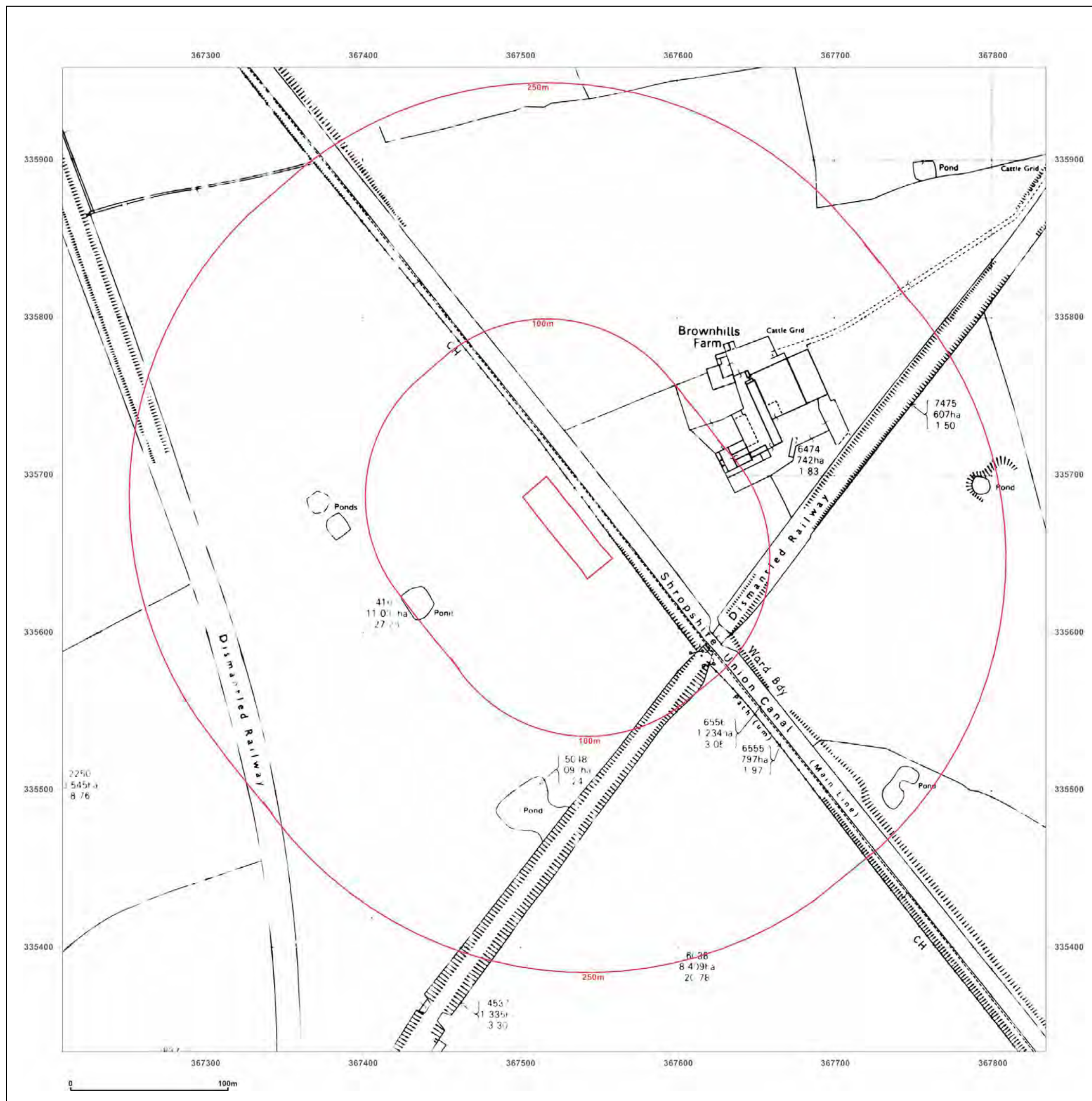


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Site Details:

Hales Sawmills, Western Way,
Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: National Grid

Map date: 1994

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

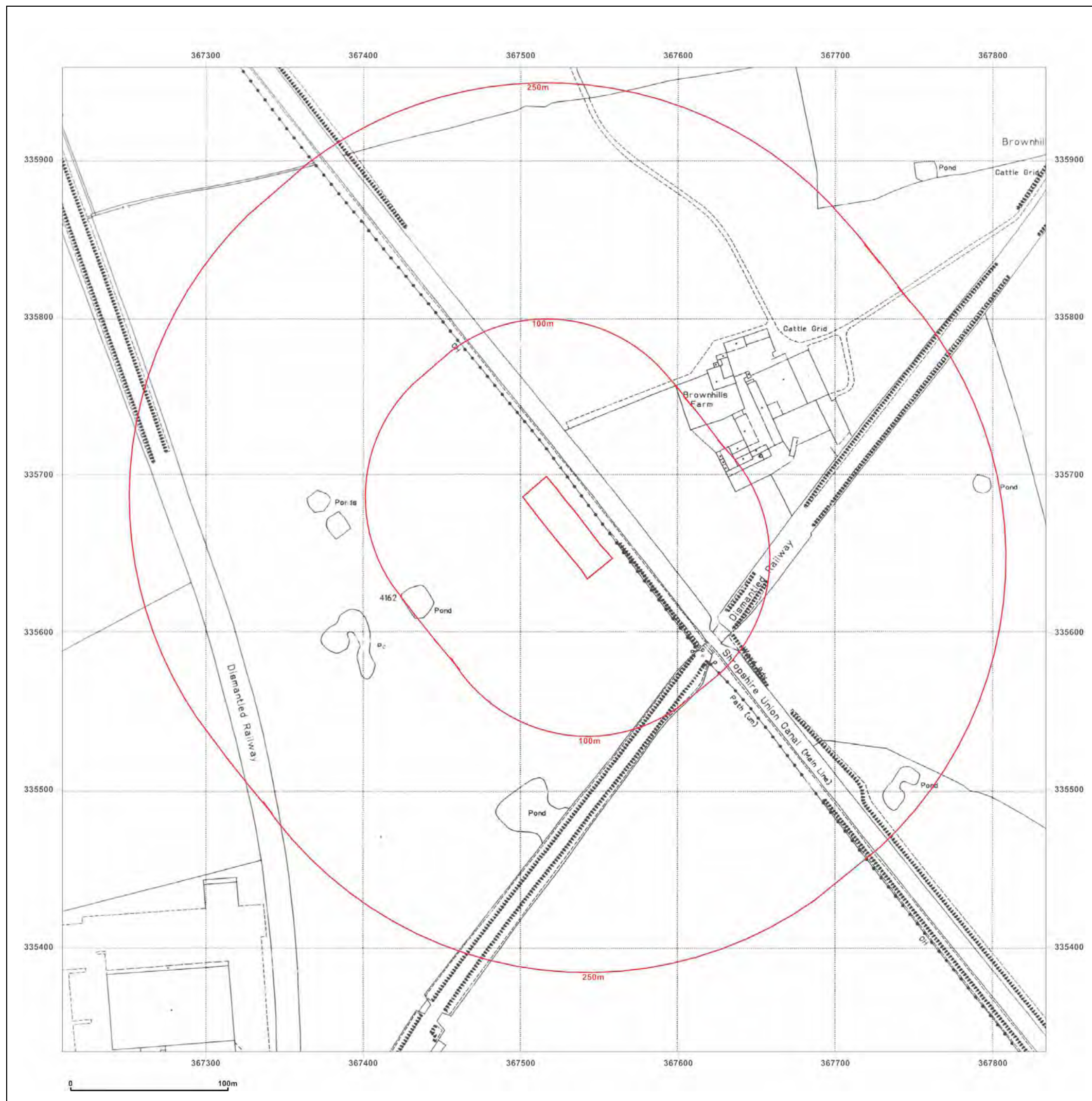


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APPENDIX 6

Site Details:

Hales Sawmills, Western Way,
Market Drayton

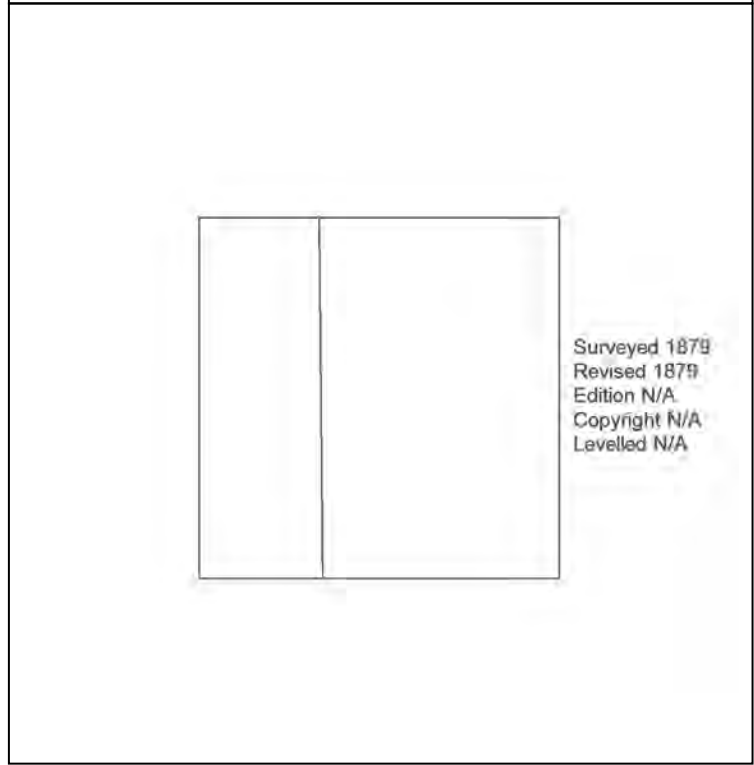
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Grid Ref: 367521, 335646

Map Name: County Series

Map date: 1879

Scale: 1:10,560

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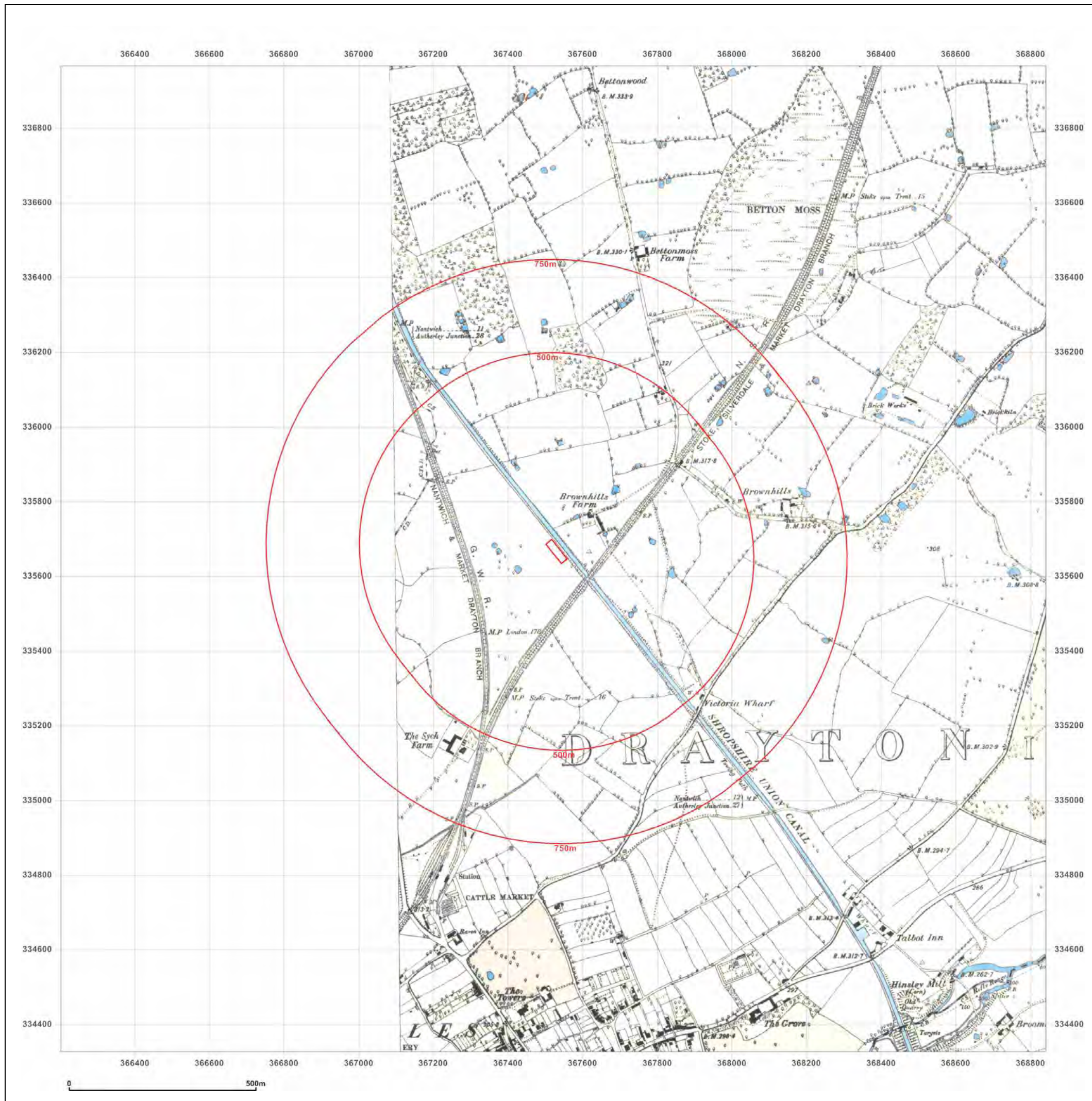


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Production date: 14 January 2015

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Site Details:

Hales Sawmills, Western Way,
Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: County Series

Map date: 1879

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1879
Revised 1879
Edition N/A
Copyright N/A
Levelled N/A

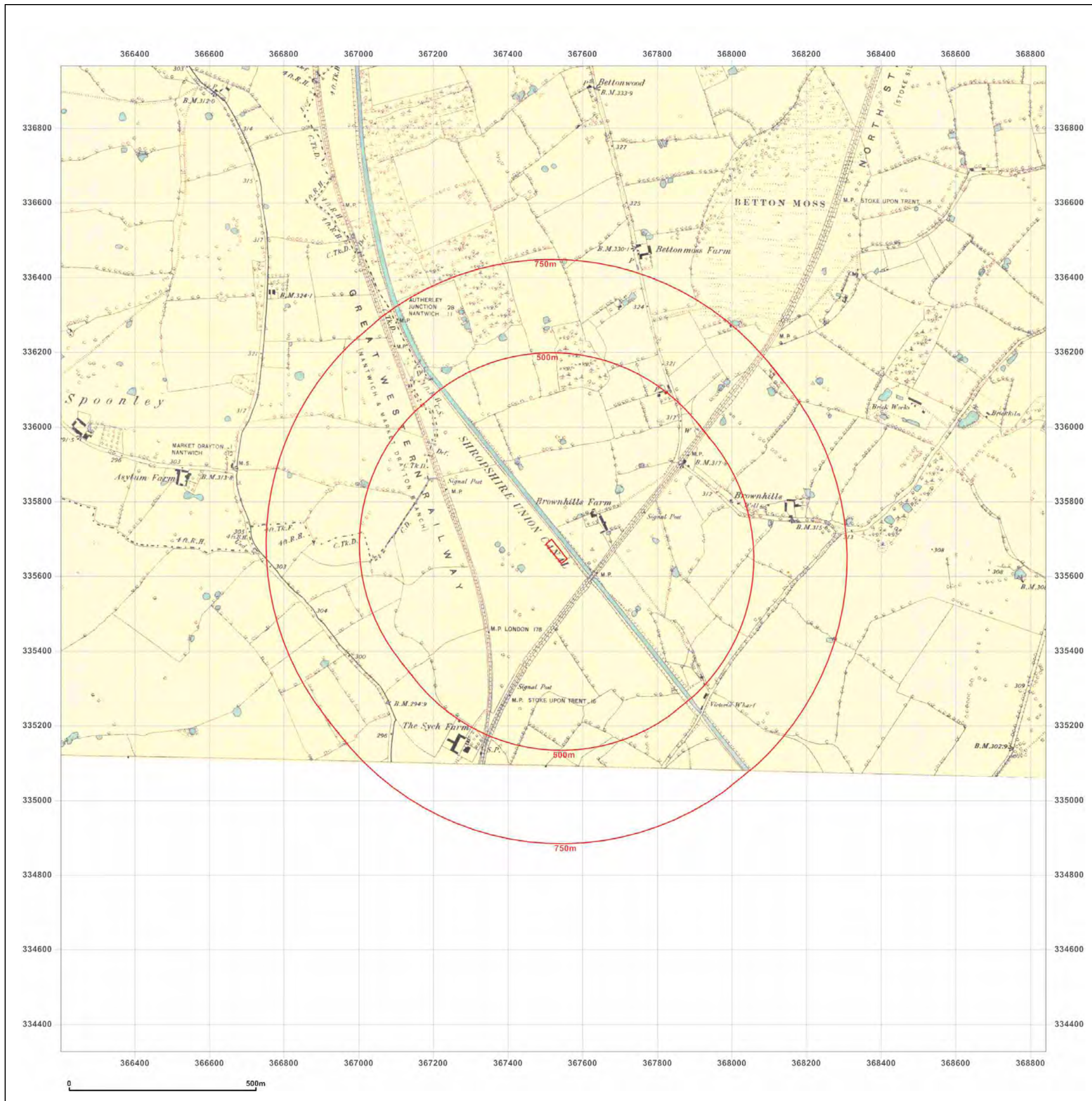


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Production date: 14 January 2015

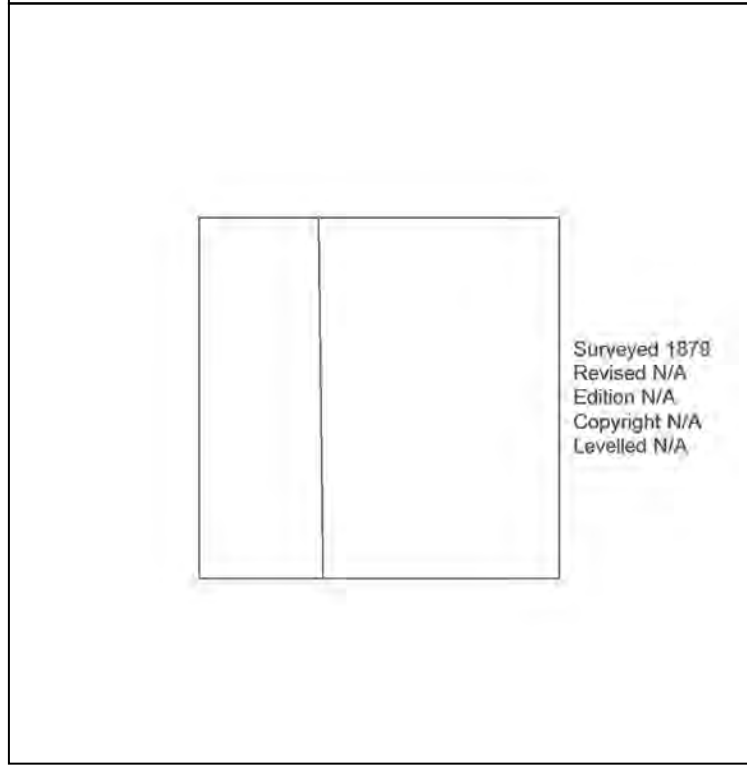
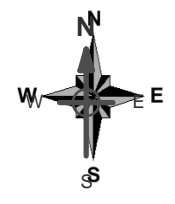
To view map legend click here [Legend](#)



Site Details:
 Hales Sawmills, Western Way,
 Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: County Series
Map date: 1889
Scale: 1:10,560
Printed at: 1:10,560



Surveyed 1878
 Revised N/A
 Edition N/A
 Copyright N/A
 Levelled N/A

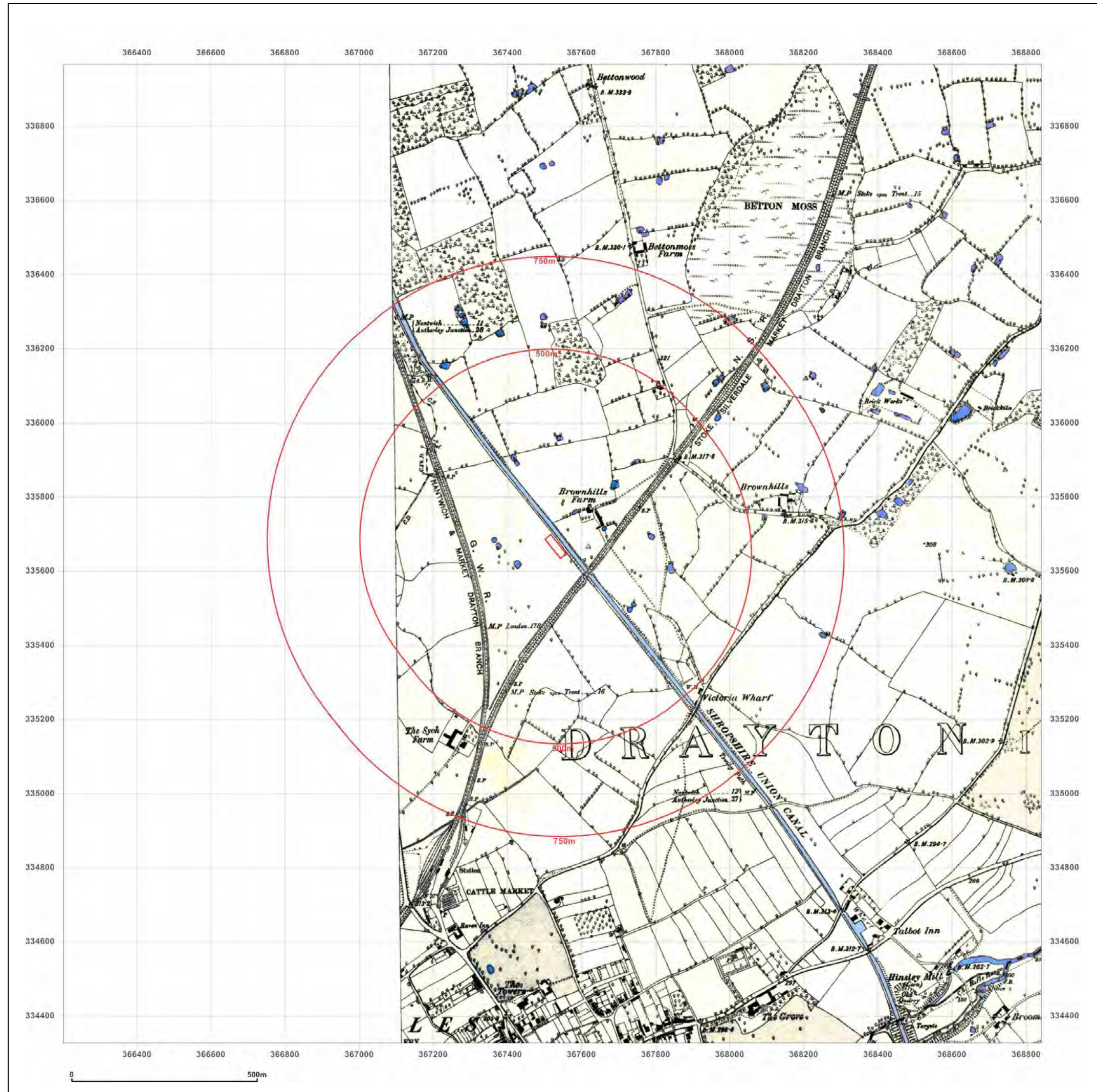
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Site Details:

Hales Sawmills, Western Way,
Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: County Series

Map date: 1899-1900

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1879
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1878
Revised 1900
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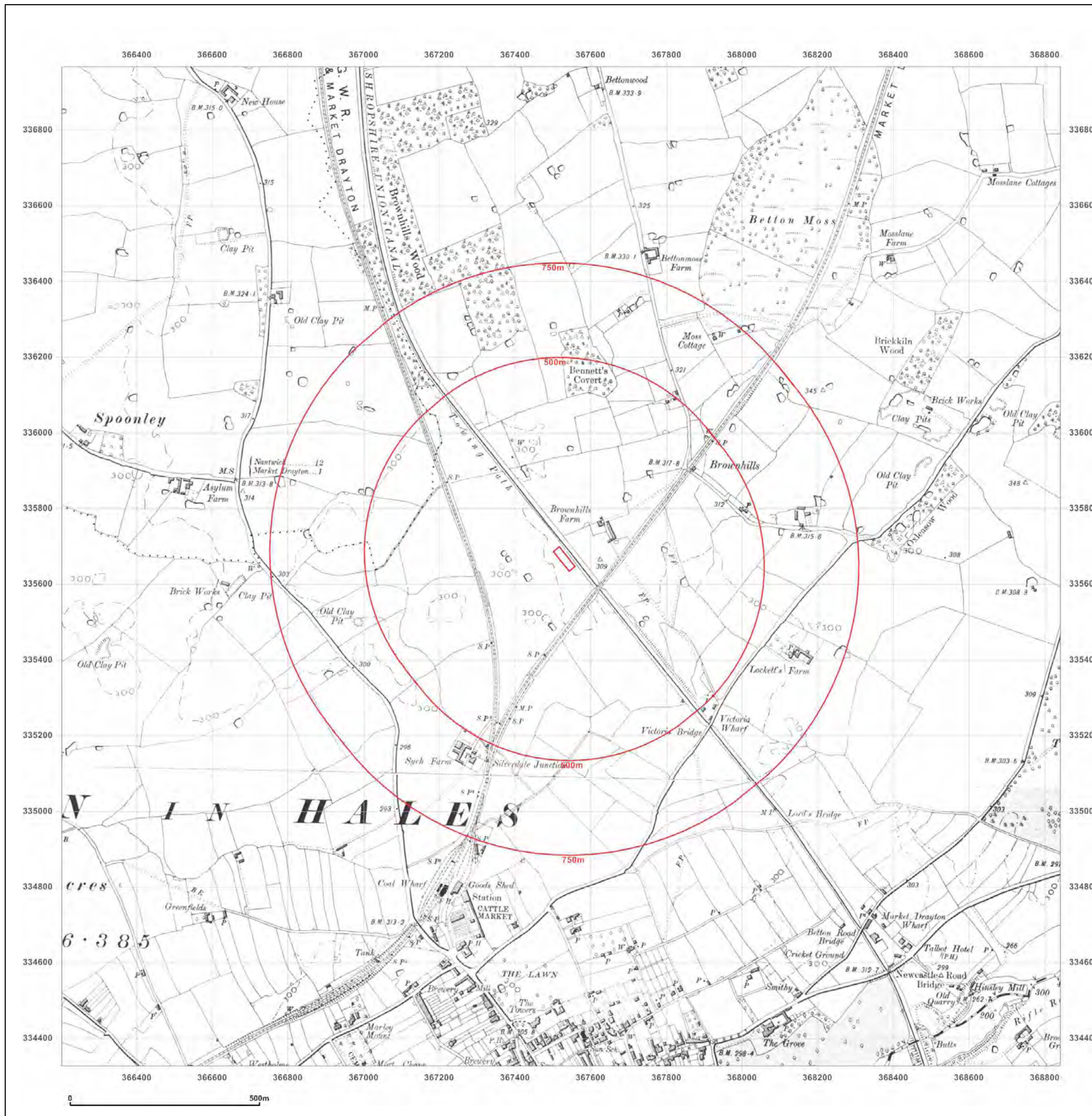


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Site Details:

Hales Sawmills, Western Way,
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Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: County Series

Map date: 1924-1925

Scale: 1:10,560

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Surveyed 1879
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Surveyed 1878
Revised 1925
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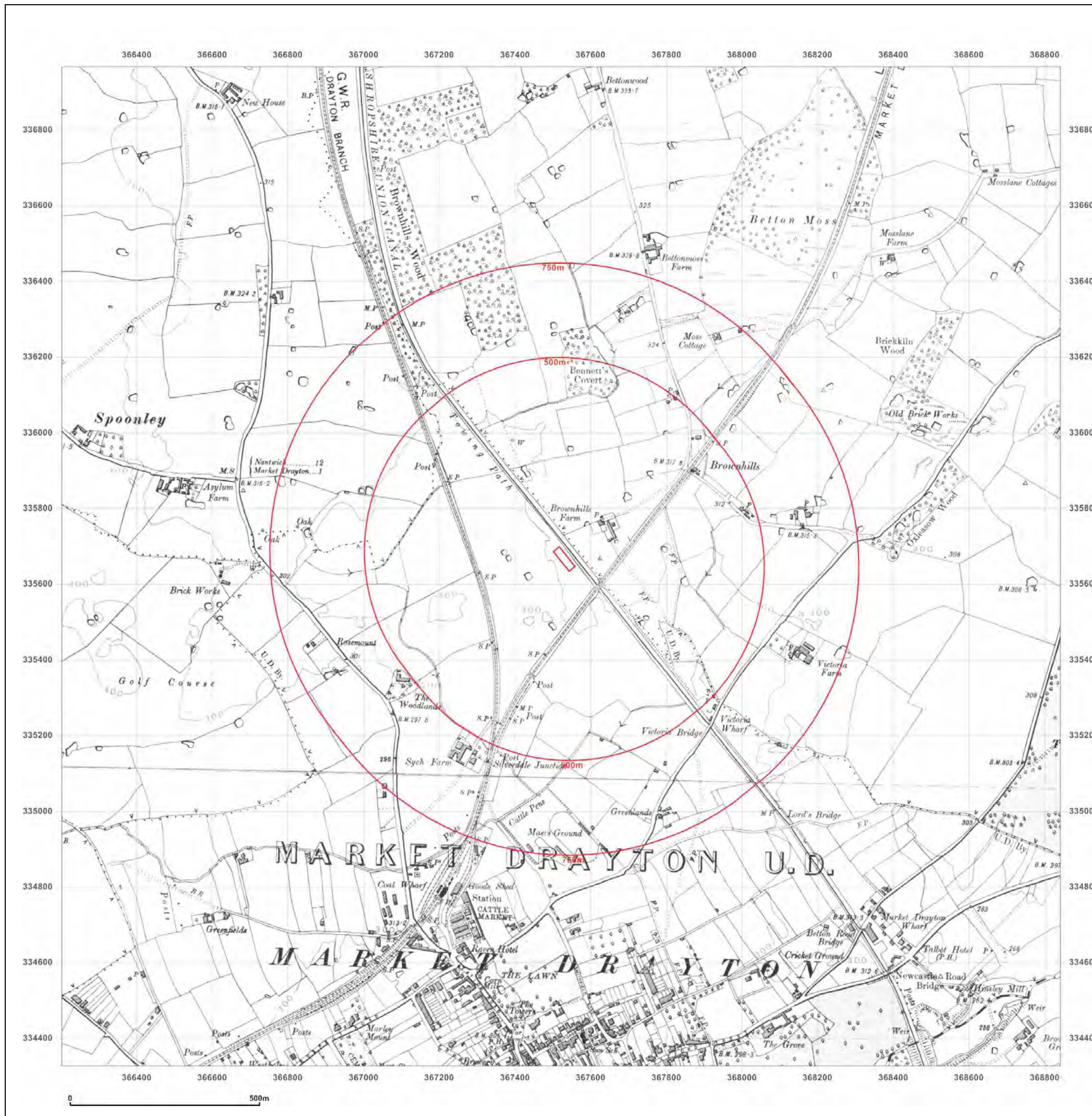


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Site Details:

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Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: County Series

Map date: 1925-1929

Scale: 1:10,560

Printed at: 1:10,560



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Edition N/A
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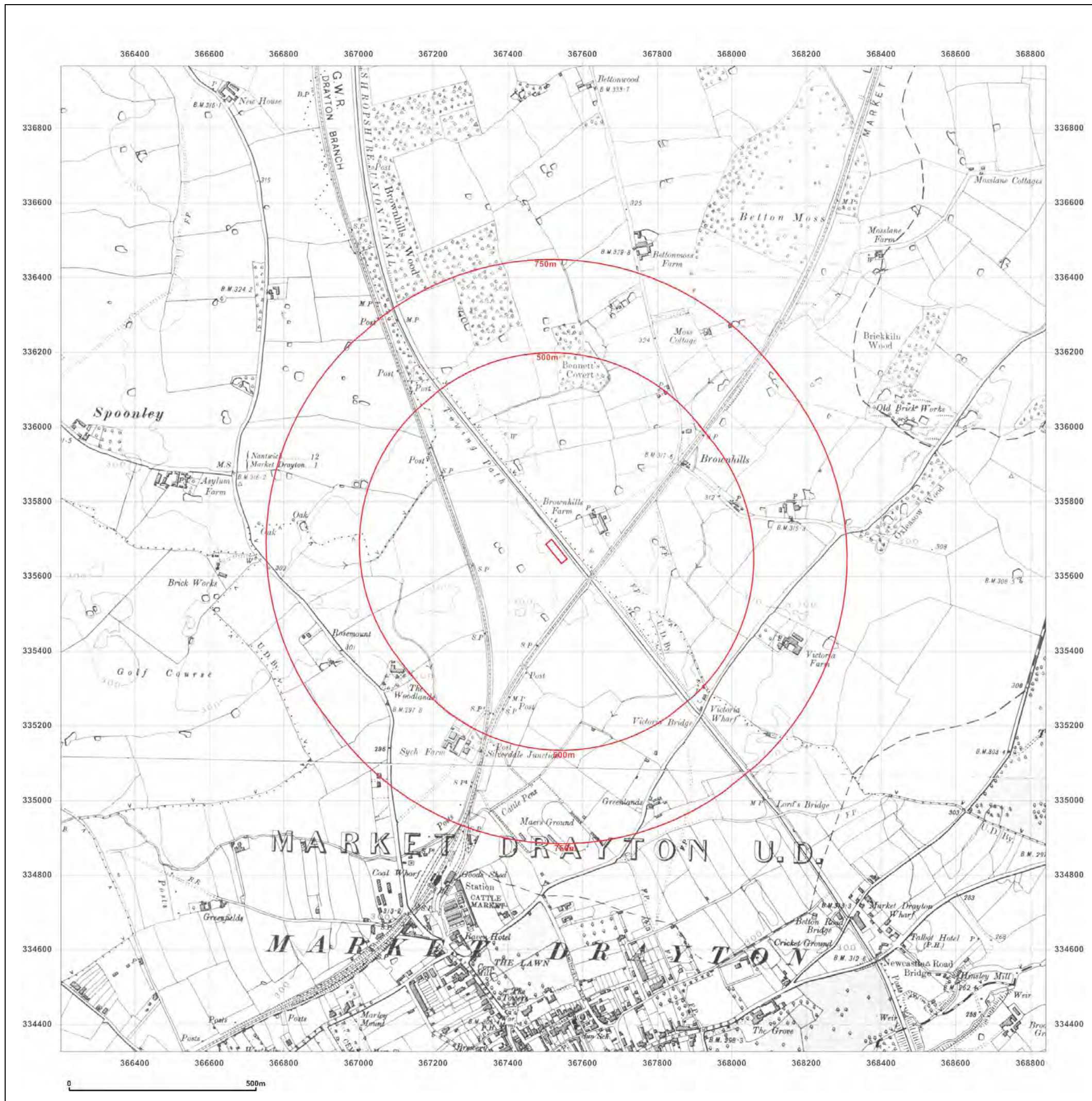


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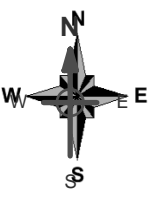
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Site Details:
 Hales Sawmills, Western Way,
 Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: Provisional
Map date: 1949
Scale: 1:10,560
Printed at: 1:10,560



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 Edition N/A
 Copyright N/A
 Levelled N/A

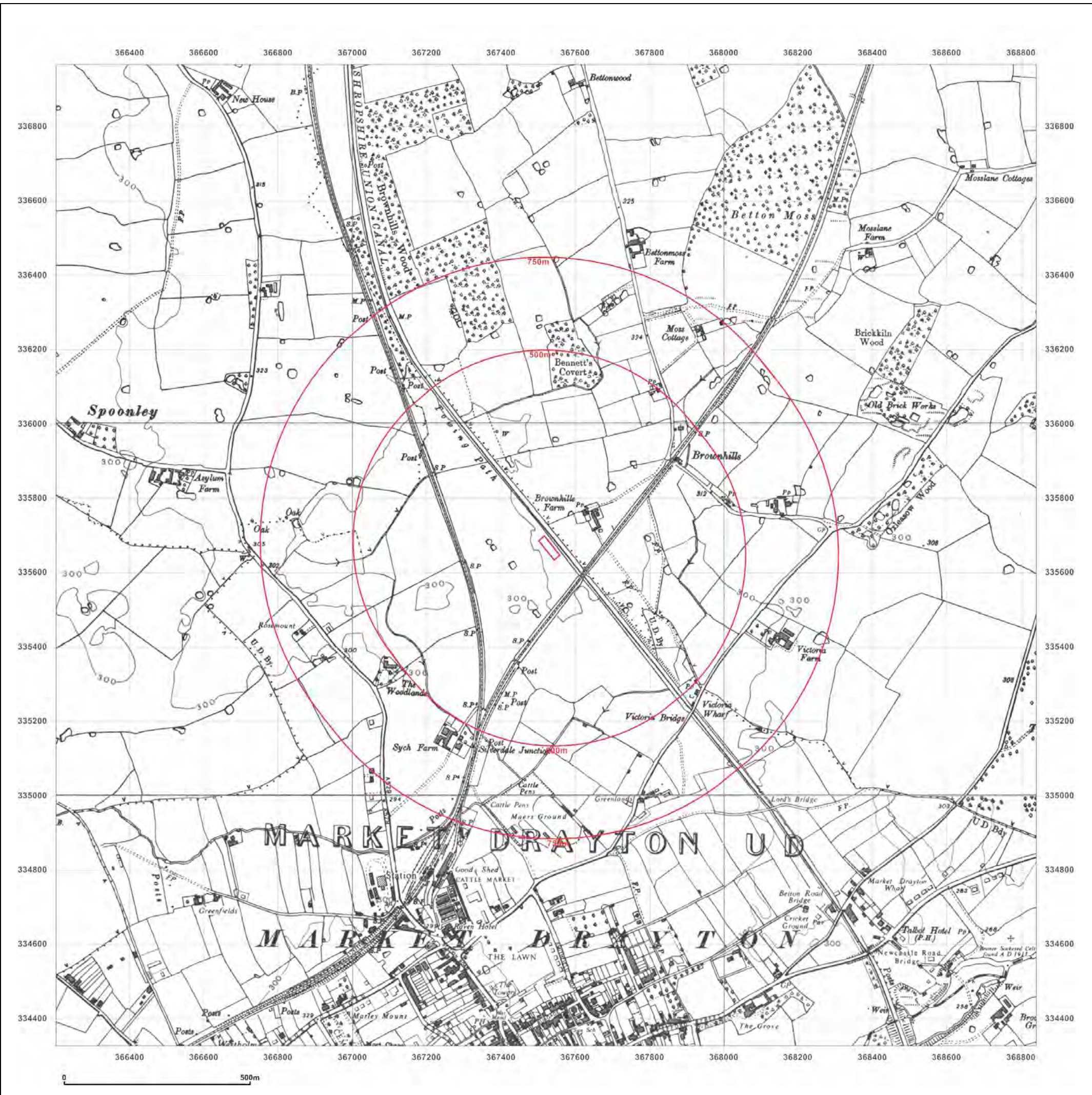
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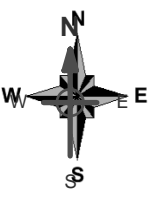
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Grid Ref: 367521, 335646

Map Name: Provisional

Map date: 1968

Scale: 1:10,560

Printed at: 1:10,560



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 Edition N/A
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 Revised 1968
 Edition N/A
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 Levelled N/A

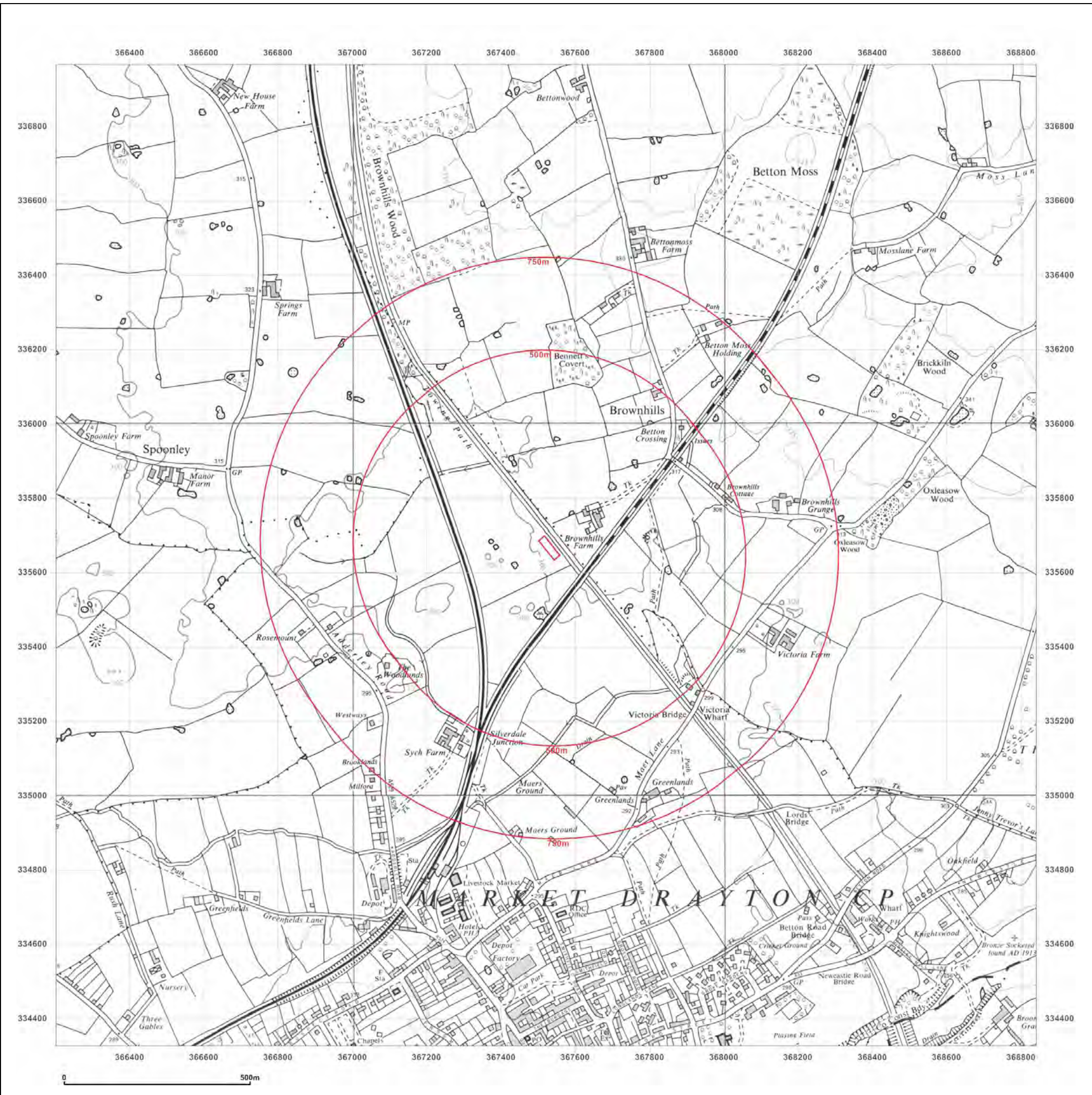
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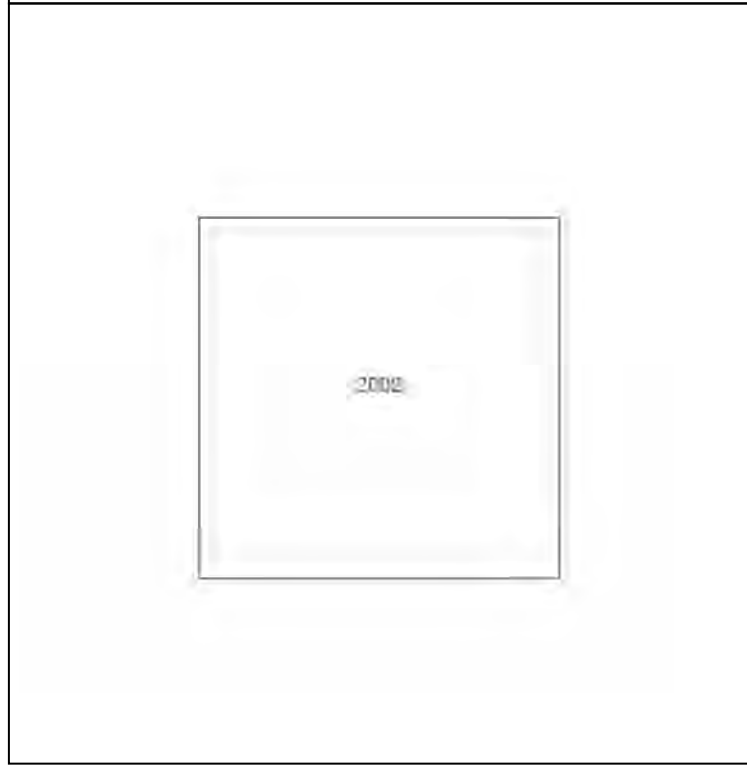
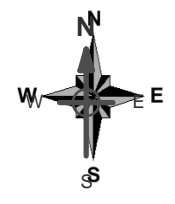
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Site Details:
 Hales Sawmills, Western Way,
 Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: 1:10,000 Raster
Map date: 2002
Scale: 1:10,000
Printed at: 1:10,000



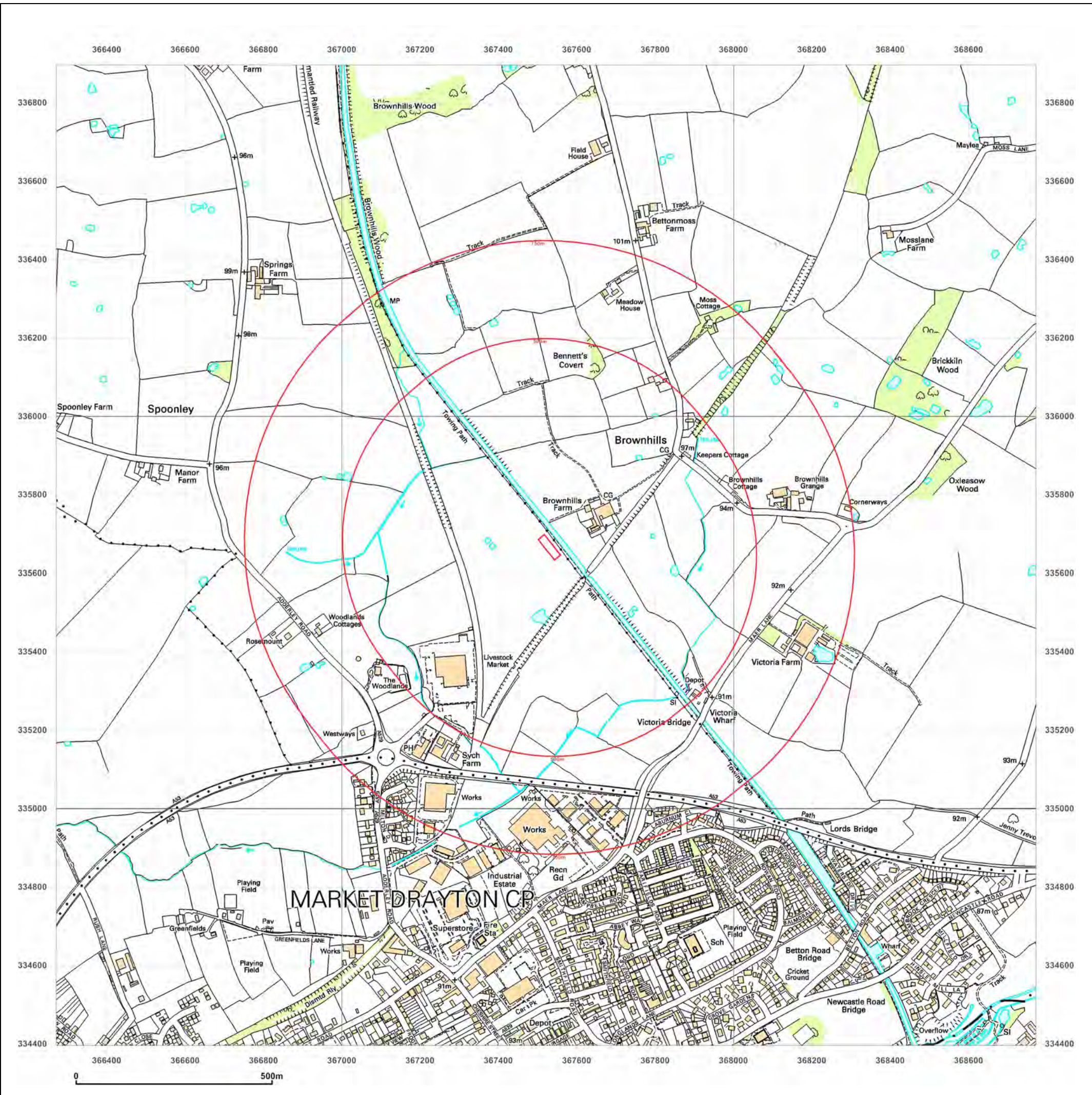
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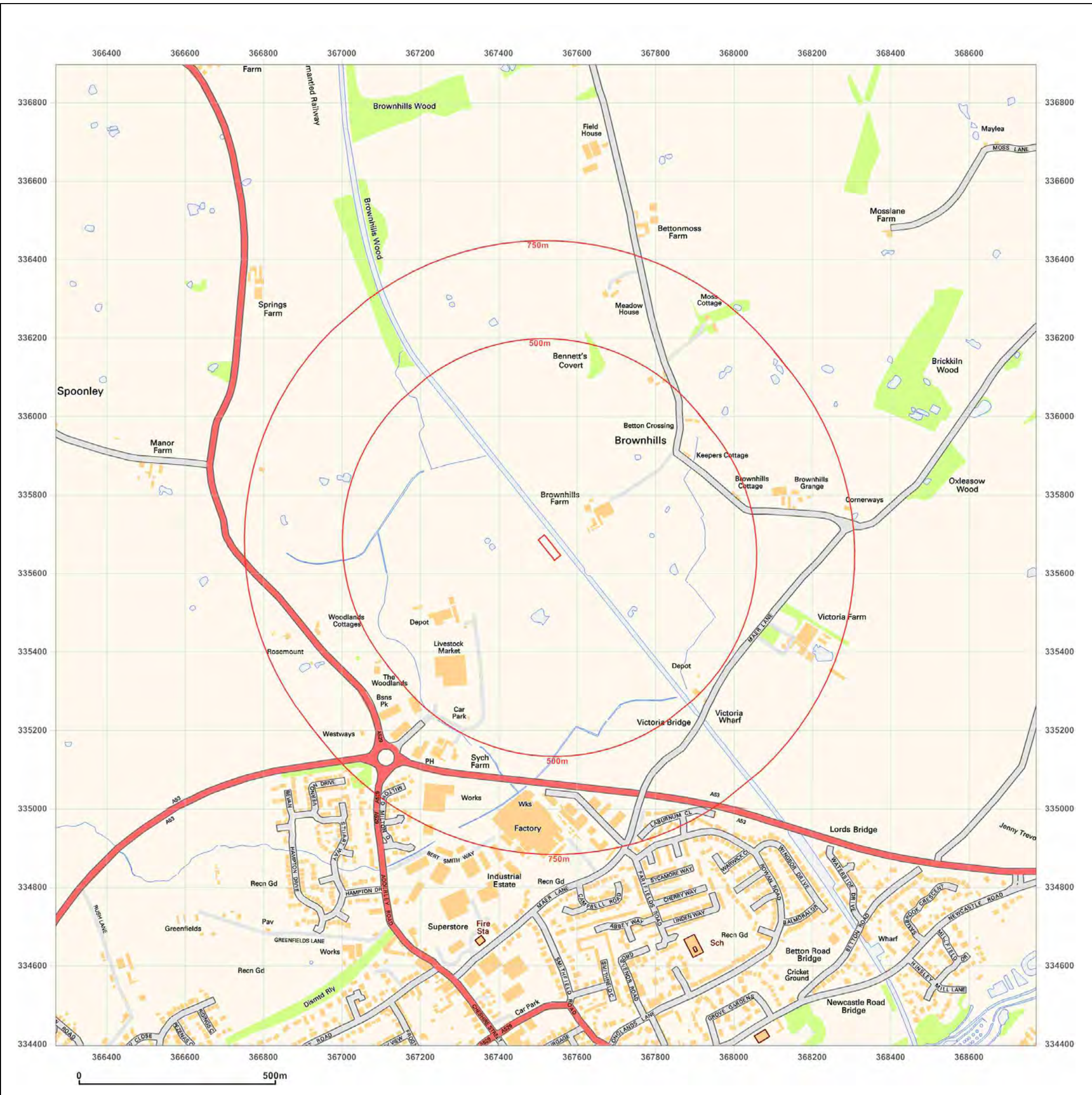
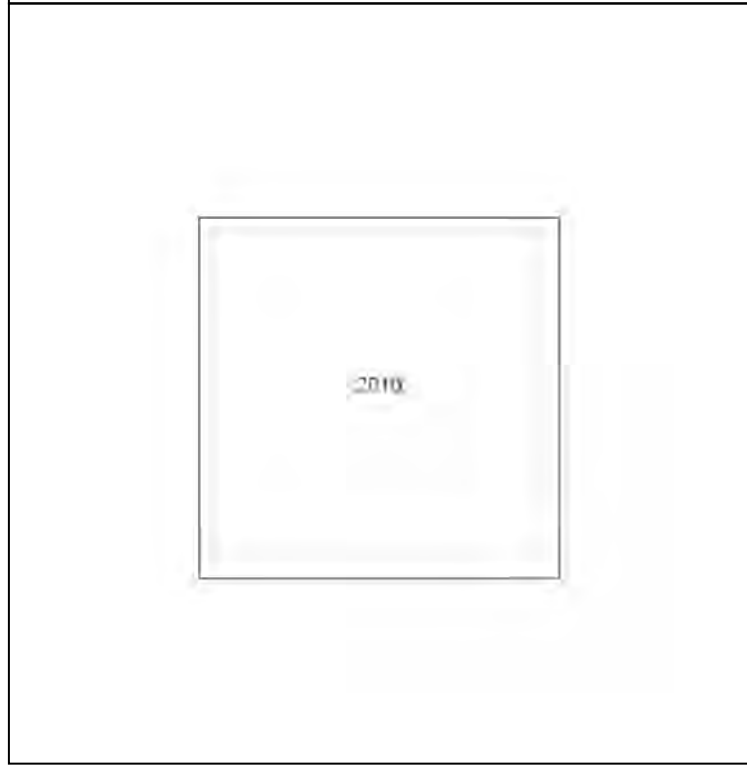
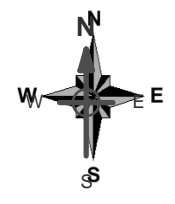
To view map legend click here [Legend](#)



Site Details:
 Hales Sawmills, Western Way,
 Market Drayton

Client Ref: 1440-15
Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: National Grid
Map date: 2010
Scale: 1:10,000
Printed at: 1:10,000



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Site Details:

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Market Drayton

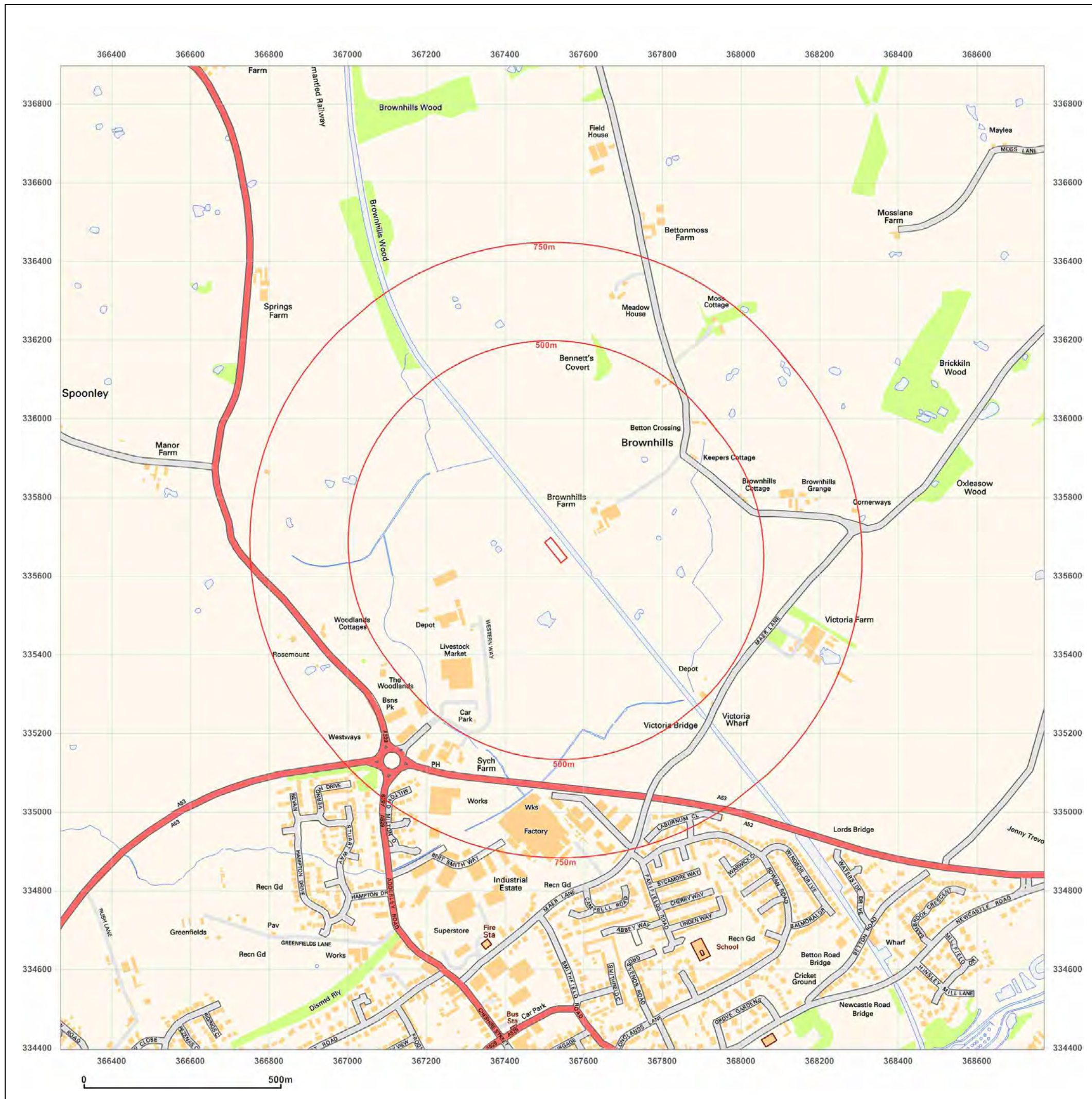
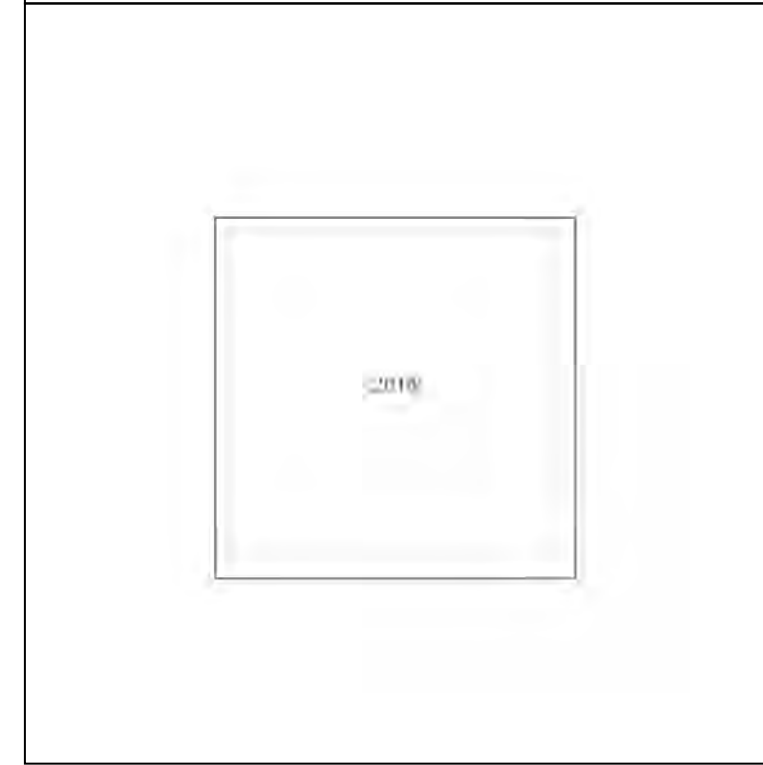
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Report Ref: GS-1846223
Grid Ref: 367521, 335646

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000



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APPENDIX 7

DEFINITIONS USED IN RISK EVALUATION

This Appendix provides definitions of the terms used in the classification of harm, probability of a pollutant linkage becoming established, and classification of overall risk, as described in CIRIA Report C552¹

CLASSIFICATION OF CONSEQUENCE/HARM

Table A, reproduced from CIRIA C552 (Table 6.3)¹, provides definitions of the terms used in the classification of consequence. Hazards are classed according to the magnitude of the potential consequence (severity) when reaching a receptor. This is known as environmental harm and can be classified as minor, mild, medium or severe.

Table A. Classification of Consequence/Harm

Classification	Definition	Examples
Severe	Short-term (acute) risk to human health likely to result in 'significant harm' as defined by the Environmental Protection Act 1990, Part IIA/ Short-term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem.	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from a site into controlled water. Explosion causing building collapse.
Medium	Chronic damage to Human Health ('Significant Harm' as defined in DETR (2000)). Pollution of sensitive water resources. A significant change in a particular ecosystem, or organism forming part of such ecosystem.	Concentrations of a contaminant exceed generic or site specific assessment criteria. Leaching of contaminants from a site to a major or minor aquifer. Death of a species within a designated nature reserve.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in the 'draft circular of contaminated land', DETR 2000). Damage to sensitive buildings/structures/services or the environment.	Pollution of non-classified groundwater. Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent effects to human health (easily prevented by means such as PPE). Easily repairable effects/damage to buildings, structures and services.	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discolouration of concrete.

¹ Rudland, D., Lancefield, R.M., Mayel, P.N. (2001) "Contaminated land Risk Assessment: A guide to good practice. CIRIA C552. UK.

CLASSIFICATION OF PROBABILITY

The likelihood that receptors could be affected by on site contaminants, if present, is classified using CIRIA C552 (Table 6.4) ¹. Table B, reproduced from CIRIA C552, provides definitions of the terms used when assessing the likelihood of a pollution linkage becoming established.

Table B. Classification of Probability

Classification	Definition
High Likelihood	There is a pollution linkage and an event that either appears very likely in the short-term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all of the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long term.
Low Likelihood	There is a pollutant linkage and circumstances are possible under which an event could occur, however it is by no means certain that even over a longer period that such an event would take place, and it is less likely in the shorter term.
Unlikely	There is a pollutant linkage, but circumstances are such that it is improbable that an event would occur even in the very long term.

RISK ASSESSMENT

The risk categories are assessed based upon the consequence vs. probability assigned to each scenario, based upon guidance originally produced by the DETR (2000). Table C shows a reproduction of the risk matrix (Table 6.5) as published in CIRIA C552, which is used to evaluate the overall risk to each identified receptor on the basis of consequence v probability. Table D records the definition of each of the risk categories, and is reproduced from Table 6.6 in CIRIA C552.

Table C. Classification of Consequence v Probability

Probability	Consequence			
	Severe	Medium	Mild	Minor
High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
Low Likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table D. Description of Risk Classifications and Likely Action Required

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