
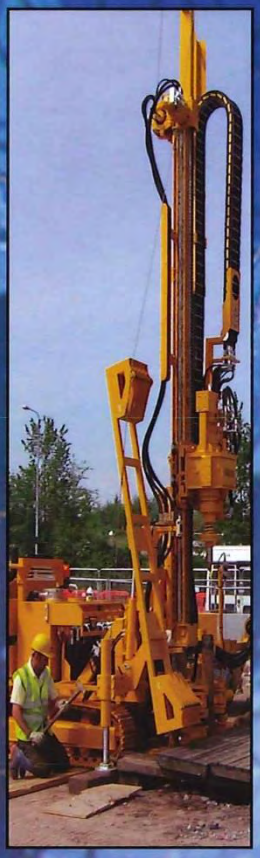


TerraConsult

February 2015
Report No 2177/R/001/1

WOOD TREATMENT PART A2 PERMIT APPLICATION

SITE REPORT

Carried out for: **Charles Ransford and Son Ltd**

TerraConsult

CHARLES RANSFORD AND SON LTD

WOOD TREATMENT PART A2 PERMIT APPLICATION

SITE REPORT

Date: February 2015

TerraConsult

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CHARLES RANSFORD AND SON LTD

WOOD TREATMENT FACILITY

PART A2 PERMIT APPLICATION: SITE REPORT

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CHARLES RANSFORD AND SON LTD

WOOD TREATMENT FACILITY

PART A2 PERMIT APPLICATION: SITE REPORT

1. INTRODUCTION

1.1 Background Information

1.1.1 TerraConsult Limited (TerraConsult) was commissioned by Charles Ransford and Son Ltd (Ransfords) to carry out a preliminary site investigation in support of a Part A2 permit application for their existing wood treatment facility in Bishops Castle, Shropshire. The purpose of the report is to provide information on conditions at the site prior to issue of the new permit and inform intrusive site investigations if required.

1.1.2 This report has been devised to comply with the relevant principles and requirements of a range of guidance including:

- Part IIA of the Environment Protection Act, 1990;
- Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, April 2012);
- BS5930:1999 +A2:2010: "Code of practice for site investigations";
- BS10175: 2011 +A1:2013 "Investigation of Potentially Contaminated Sites - Code of Practice";
- Defra/Environment Agency (2004) Report CLR11 "Model Procedures for the Management of Land Contamination";
- Environment Agency (2011) Report GPLC1 "Guiding Principles for Land Contamination";
- Environment Agency (2013) Report GP3 "Groundwater protection: Principles and Practice" Version 1.1.
- Environment Agency (2013) Environmental Permitting Regulations Guidance for Applicants H5: Site Condition Report – Guidance and Templates
- DEFRA (2012) Environmental Permitting General Guidance Manual on Policy and Procedures for A2 and B Installations.

1.1.3 TerraConsult's service constraints and report limitations are in Appendix A and a description of environmental risk assessment methodology and terminology is in Appendix B.

1.2 Previous Investigations

1.2.1 TerraConsult is not aware of any previous reports relating to this site.

1.3 Development Proposals and Planning Status

1.3.1 Ransfords operates a wood treatment activity at their Bishops Castle site with a throughput of > 75m^3/day. Such an activity is a Part A(2) activity listed in Schedule 1 of the Environmental Permitting (England and Wales)(Amendment) Regulations (2013). This means the area of site where the wood treatment is currently carried out is classified as an installation and will require a Part A2 permit to operate after 6th July 2015. This type of permit application requires a site condition report to characterise site conditions prior to permit issue. Subject to availability of suitable data, it may be necessary to carry out an intrusive site investigation to confirm ground conditions and quantify historic contamination from previous land uses.

1.3.2 The findings and conclusions of the risk assessments have been set out and recommendations are given for further site investigations. If there is a subsequent change in the proposed land use, the risk assessments and conclusions should be reviewed to determine whether they are still applicable for the revised end use.

1.4 Objectives of the Investigation

1.4.1 The main objective of the investigation is to provide information for the permit application Site Report. The specific activities carried out are as follows:

- undertake a desk-based assessment of available information and history of the site;
- carry out a site walkover survey;
- develop a preliminary conceptual site model according to the findings of the investigation;
- environmental and geotechnical hazard assessment; and,
- recommend a scope for the Phase 2 Investigation, if required.

2. SITE LOCATION AND DESCRIPTION

2.1 Site Location

2.1.1 The basic site information is detailed in Table 1 and general site location is indicated on drawing referenced 2177/1/002. The permit boundary is detailed on drawing referenced 2177/1/001 and includes an area the proposed activity is likely to be expanded into at a later date.

Table 1. Key Site Information

Name of Applicant	Charles Ransford and Son Limited
Name of Site Owner	As above
Activity Address	Love Lane Industrial Estate Station Road Bishops Castle Shropshire SY9 5AQ
National Grid Reference	SO325886
H5 Document Reference	2177/R/003
Date for Site Condition Report at permit application	July 2015
Date for Site Condition Report at permit surrender	TBC
Document reference for site plans	Permit Boundary: 2177/1/001 Site Location Plan: 2177/1/002

2.2 Site Description

External Layout

2.2.1 A TerraConsult representative visited site on 18th November 2014. The larger Ransfords site is accessed from Love Lane (A488) via the access road to a small industrial estate. The building used for the wood treatment activity is located to the west of site past the main office and weighbridge. All site surfaces from the main highway to and from the building have been recently resurfaced with concrete or tarmac.

2.2.2 The main wood treatment building is approximately 80 m long (east to west) and 30 m wide. The wood treatment vessels are housed in an outrigger building extending 30 m south from the eastern half of main building. The main building is accessed via sliding doors on its east and west elevations. The outrigger building opens internally to the main building. The area of future development sits directly to the east of the outrigger building. It is currently surfaced with tarmac and used for external storage of wood products.

2.2.3 An electrical substation is situated immediately adjacent to the south elevation of the main building. To the west is a collection of disused buildings associated with the saw mill which are understood to have been used for wood preparation and preservation activities. This area is also for the external storage of products, machinery and sundries associated with the larger facility. A covered area used to dry out cut wood prior to chemical treatment runs the majority of the length of the north elevation of the main building. Immediately north of that is a large shed used as a workshop for construction of pre-fabricated wood products. To the east of the main building and outrigger is an

open yard used for storage of finished wood products. A fuel depot with 4 tanks containing diesel fuel is situated in this area.

Drainage

2.2.4 McCartneys' drawing referenced LSV 431/01A dated February 2011 shows the network of surface drains across the wider site. There is a combination of storm drains, foul sewage and water mains servicing the site along with power cables supplying variable voltages. Two separate surface water drains run underneath the application site and connect at a location northeast of the weighbridge office. It is understood neither drain is accessible through the sealed surface inside the shed nor does water drain into them from inside the shed.

2.2.5 There was no evidence of burrowing animals or habitats suitable for amphibians in the immediate vicinity of the building. The only vegetation on site is associated with older areas or outside the operators control i.e. within the electrical substation compound. No evidence of invasive plant species was noted.

Internal Layout

2.2.6 The building walls are constructed from concrete blockwork to around 1 m above ground level and then corrugated sheeting to roof level. The entirety of the internal space of the main building and outrigger is sealed with concrete. The floor slopes inwards from the access doors and then southwards towards the outrigger building. The 3 treatment vessels are orientated with their doors facing the main building. Each vessel contains a set of rails which extend outwards into the main building. Wood is loaded onto bogeys which are then wheeled in their entirety into the vessels.

2.2.7 Behind the treatment vessels are 3 tanks. One contains fresh water which is continually topped up from a borehole sunk into the ground to the rear of the outrigger (further details in Table 2). The other two tanks contain the wood preservative with either a green or brown pigment. The Material Safety Data Sheets (MSDS) for these chemicals is included in Appendix E. Prior to any chemical treatment, the wood is subject to a vacuum for a period of 0.5 hours to draw out moisture. On completion the tanks are completely filled with a pre-mixed 3-4% solution of the CX10-based wood treatment agent, pressurised and left to soak for 1.5 hours. On completion the liquid drains by gravity into an open catch pit directly underneath the tank where it can be mixed with fresh solution and re-used. The whole process is automated with the exception of placement / removal of the wood from the vessels.

Internal Drainage

2.2.8 The treated wood is wheeled out of the vessels and removed from the bogeys by fork lift. The wood is stacked directly on the ground (at an angle to assist drainage) with the free product allowed to run off and flow down slope back toward the vessels. Raised guides on the building floor help direct any liquid flow toward gullies stretching across the outrigger. These gullies then flow toward the bunded storage tanks (called mixing tanks at this site) situated below ground level beneath the wood treatment vessels. This liquid is then reused in the wood treatment process. There is no direct connection between the internal drainage system and the external drains which channel surface water, storm water or sewage to their respective outlets.

Containment Integrity

2.2.9 The mixing tanks were excavated into the ground beneath the site. These were then lined with concrete (unknown thickness) on the base and sides of the tanks. No electronic or mechanical leak detection measures were installed with the tanks. Metal tanks then sit within the concrete lined tanks. The metal tanks hold the green treatment agent between uses in the vessels above. This liquid is topped up automatically from a mixture of water, green pigment and treatment agents. Liquid which drains from the drying area flows into the concrete tank outside the metal tanks. This is pumped into the vessel which treats the wood with brown pigmented agents.

2.2.10 The surrounding ground was also sealed with concrete and sloped with a shallow gradient toward the mixing tanks. This ensures that if any of the tanks sitting above the slab fail (brown treatment vessel, water tank and raw chemical storage tanks), all liquid will drain into the mixing tanks. The bunded area around the mixing tanks has sufficient capacity to retain 150 % of the total storage and mixing tank volume.

2.3 History

2.3.1 Table 2 summarises the historic development and land use for the site and its surroundings. The maps used are previous editions of the County Series and Ordnance Survey dating back to 1851 (Appendix C). Historic photographs (Appendix D) and local interest websites have also been referenced.

Table 2. Summary of Examined Historical Mapping and Photographs

Information Resource	On-site Features	Off-site Features
1883 / 1884 County Series 1:2,500 and 1:10,560	The current site area is occupied by the platform and sidings of Bishop's Castle Railway Station. The station building is located within the area where the main building currently stands. A small building sits at the current boundary between the main building and outrigger.	The railway line extends eastwards from the railway station. There is no continuation of the line to the west. Love Lane is identified to the southeast and Brampton Road to the southwest. Both roads follow their current route. Two turntables are position to the west of the station and are separated by a long carriage shed. A brick goods shed is positioned to the immediate east of the current building boundary. The track passes through the goods shed. The weighbridge (still present today) is evident approxiametly 75m to the south west. With the exception of the railway and associated infrastructure, the north east and west of site is dominated by agricultural fields. Church Street runs north to south approximately 150 m to the west with the majority of built development associated with this road. A gas works is identified < 100 m to the west, southwest of the site boundary at the eastern end of Horsefair road.

Table 2. Summary of Examined Historical Mapping and Photographs

Information Resource	On-site Features	Off-site Features
1903 County Series 1:2,500 and 1:10,560	Further detail has been added to the railway station e.g. location of cattle pen, crane and goods sheds. One of the turntables has been removed and replaced by a single road engine shed. (description from http://www.disused-stations.org.uk/b/bishops_castle)	No significant change
Undated (early 20th Century) photographs (facing east)	Close-up detail of station building and platform shown. Platform appears to be a hardstanding and not a sealed surface.	The arched entrance to the east goods shed is evident in the background.
1903 Photograph (facing southeast)	An unmade road runs downhill toward the station. A train is shown being loaded with timber.	
1910 Photograph (facing west)	The up-slope to the station platform is visible.	The single road timber railway shed is visible, as are the railway sidings.
1924 County Series 1:10,560	No significant Change	Presence of auction mart is noted to the north of the railway station. A sewage works has been constructed 500 m to the southeast of the site.
1926 County Series 1:2,500	No significant Change	No significant Change
1928 County Series 1:10,560	No significant Change	No significant Change
1928 Photograph (facing west)	Goods wagons are parked on the sidings. The station appears unkempt.	N/A
1938 County Series 1:10,560	No significant Change	No significant change
1937 photograph (facing west)	The railway track has apparently been lifted, but the station building is still intact. A pile of railway ballast is positioned in front of the station building on the tracks.	N/A
1939 Photograph (facing north east)	Unidentifiable material (possibly rubble) is piled up on the old platform.	The entrance to the railway goods shed has been bricked up. The railway track has been become vegetated.
1945 Aerial Photograph	Station building is still evident along with railway goods vehicles	The form of the gas works is not clear (series of buildings / sheds). Small mounds of dark material (coke or coal) are evident nearby.
1948 Aerial Photograph	No significant change	No significant change

Table 2. Summary of Examined Historical Mapping and Photographs

Information Resource	On-site Features	Off-site Features
1949 County Series 1:10,560	Railway appears to have been decommissioned although outline of the station is still evident.	Railway track referred to 'Track of Old railway'; assumed to be decommissioned.
1950 Aerial Photograph	No significant change	A long Nissan-style hut has been constructed to the west.
1951 Photograph (facing north east)	The building (described as a goods dock) located at the boundary of the main building and the outrigger is still visible.	No significant change
1950 Aerial Photograph	No significant change	A new building has been constructed parallel to the Nissan Hut. Static tanks appear to be present to the south of the building.
Mid-1950s Photograph (facing north east)	It's unclear where the photograph has been taken in relation to the old station. Wood is stockpiled extensively in the vicinity. A tanker lorry is parked on site. It is not clear what liquid it may contain.	
1959 Aerial Photograph	No significant change	No significant change
1962 Photograph (facing east)	The 1962 photograph shows the entirety of the site. The low wall in the foreground of the mid-1950s image is evidently the edge of the old platform. The building adjacent appears to have a cyclone filter or silo and may be a sawmill. The substation is visible in its current location.	The old brick shed is still evident in the background. Wood is stockpiled extensively around the site. 3 static tanks are evident to the north where the road tanker was parked in the earlier photograph. Anecdotally evidence suggests this was a fuel depot. There is no obvious visible evidence of a gasworks to the west, however a large bay containing coal or coke is situated immediately west of the substation compound. This may be associated with the two coal merchants which are reported to have operated from the site (http://www.disused-stations.org.uk/b/bishops_castle)
1973 Aerial Photograph	No significant change	No significant change
1975 County Series 1:2,500	No evidence of railway station or sidings. Buildings on site are referred to as timber yard.	Gas works are no longer evident, a builders yard now identified in its place. An egg packing station is located to the west and a clothing factory is to the north west. Issues (assumed to be associated with drainage) and a pond is identified to the north, east and south of the site. A housing estate has been developed to the south of the site.
1977 County Series 1:10,560	No significant change	A pumping station is indicated approximately 800 m to the south east.

Table 2. Summary of Examined Historical Mapping and Photographs

Information Resource	On-site Features	Off-site Features
1981 Aerial Photograph	No significant change	The Love Lane Industrial Estate has been constructed to the south east along with an electrical substation. A new building has been constructed within the sawmill complex at the location of the current timber cutting shed.
1986 County Series 1:2,500	No significant change	No significant change
1989 County Series 1:2,500	No significant change	Additional housing has been built to the south of the site.
1994 County Series 1:2,500	No significant change	The current timber cutting shed has been extended to the southwest.
2002 County Series 1:10,000	The outrigger has been added to the current building.	A business park has been developed < 500 m to the south
2010 1:10,000	No significant change	No significant change
2014 1:10,000	A larger building has been added to the north of the site and the intervening older shed removed.	No significant change
2012 Photograph (facing east)	All trace of the station has been removed although the slope down from the original site entrance is still evident.	N/A

http://www.disused- stations.org.uk/b/bishops_castle

3. ENVIRONMENTAL SETTING

3.1 Data Summary

3.1.1 A summary of the environmental background information (geology, hydrology, hydrogeology, database information, etc.) regulator consultation and other source information for this table is presented in Appendix C and/or is referred to in Table 3. This will be used as the base data to formulate a Conceptual Site Model (CSM).

Table 3. Environmental Data Summary

Component	Data Source	Data Summary
Regional Geology	1:50,000 BGS Solid and Drift Geology Maps. Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70	Drift Geology: Glaciofluvial sheet deposits (sand and gravel) and Humocky (moundy) glacial deposits (diamicton) of Devensian origin are present within 50 m of the site (see Figure 1) Solid Geology: The Baily Hill formation of interbedded sandstone and siltsone is within 50 m of the site (see Figure 2).
	Borehole Log for on-site abstraction borehole (Appendix F)	The installation log describes the following from ground level: • 0 to 10.6 m: grey gravels • 10.6 to 15.1 m: grey clay • 15.1 to 75.7 m: grey shale (assumed to be Baily Hill Formation)
	Made Ground	No recorded made ground is identified within 50 m of the site.
Mining	BGS Maps & Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70	No coal mining activities have been recorded within 1000 m of the site. Rare and localised, small-scale non-coal mining (vein minerals) activities may have been carried out on the site and 151 m to the south east. There's no evidence for any excavations except a possible slight embankment dug into the slope to the east to build the railway station. No natural or man-made cavities as a result of mining are located within 1000 m of the site.
Quarrying	Historic OS Plans Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70	The historic maps show no evidence of mineral extraction or quarrying at the site (e.g. brick pits, sand and gravel extraction, etc.).
Hydrogeology	Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70 www.environment-agency.gov.uk	Source Protection Zone: The site is not located within a groundwater Source Protection Zone (SPZ). The nearest SPZ is 350 m to the west (outer catchment of pumping station to the southwest) Aquifer (Drift): The ground directly beneath the site is classified as a Secondary A Aquifer. These contain '*…permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers*.' Immediately to the north of the site boundary is a Secondary Aquifer with no aquifer identified immediately north of this. These are assigned where '*…it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as*

Table 3. Environmental Data Summary

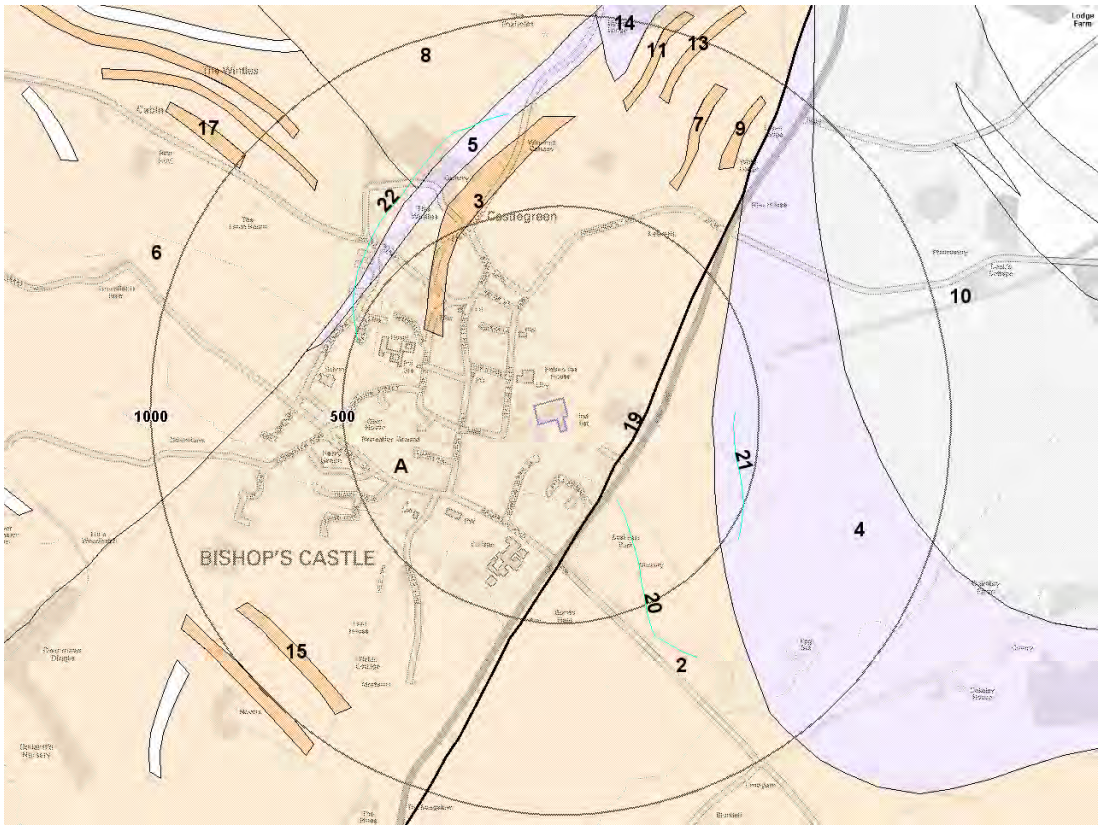
Component	Data Source	Data Summary
Hydrogeology (continued)	Groundwater, Surface Water and Potable abstractions.	*both minor and nonaquifer in different locations due to the variable characteristics of the rock type'*. Aquifer (Solid): The solid geology is classified as a Secondary (B) Aquifer for at least 500 m in each direction. These are described as '*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*.' No abstractions were identified by the Groundsure EnviroInsight report within 2000 m of the site. It is assumed the borehole located underneath the application site and the pumping station to the southeast abstract less than 20 m3/day as they are not registered under this search.
	On-site Abstraction Borehole Log	Water strikes reported at 40 m and 60.1 m below ground level. Hydrogen sulphide odour to groundwater abstracted from borehole could indicate the presence of pyrite in Siltstone
Hydrology	Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70	Flood Zones: The site is not located in a flood risk zone Pollution Incidents: Surface Water abstractions: There are no Discharge Consents: • A488 Bishops Castle Storm overflow to Tributary of Snakescroft Brook (177 m to south). • Blundell Hall sewage treatment works to ground (235 m to south, revoked March 2004, 286 m to south, active).
	Environment Agency Website search 02/12/2014	The nearest flood risk zone is associated with the small water course approximately 300 m to the south east. The maps identify a potential flooding risk associated with surface water in and around the wider site. The nearest water course to site (approximately 850 m to south east) reports historic water quality data (to 2009) as good with medium levels of nutrients.
	Drainage Plans	The drainage plan provided by Ransfords shows a network of drains located across the site. These connect with the culvert to the south.
	Buried Culverts	A culvert passes to the southwest of the site.
Radon Potential	Building Research Establishment, 2007, BR211 'Radon: Guidance on protective measures for new buildings'	The site is not situated within an area where full or basic protection measures are required and a geological assessment is not required. There are no radon protection measures required to be installed within new buildings.
Other Radiation	Historic land use Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70	No reasonable grounds for believing land to be radioactively contaminated (in accordance with 2005 extension of Part IIA of The Environmental Protection Act 1990).
Ordnance	Zetica Bomb Risk Map	Low risk for unexploded ordnance
		Charles Ranfords and Son Ltd is registered as a historical COMAH site. There are no registered Radioactive

Table 3. Environmental Data Summary

Component	Data Source	Data Summary
Environmental Database Information	Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70	Substances sites, Explosives Sites, Integrated Pollution Control (IPC) sites or Notification of Installations Handling Hazardous Substances (NIHHS) within 500m of the site. There are no potentially contaminative industrial sites registered within 500m of the site. No records relating to potential contamination associated with the former gas works.
		There are no recorded waste treatment, transfer and disposal site within 500m.
Landfill Search	Ordnance Survey Historical Mapping	No areas of waste deposit are noted on the historical mapping.
	Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70	Kerry Green household landfill site has been identified 497 m west of the site from Environment Agency records. The permit has been surrendered. King Grove landfill site has been identified from BGS / DOE records 606 m to the northwest of site. No details are provided.
	Environment Agency website search 02/12/2014	There are no registered landfill sites within 1 km of the site listed on the Environment Agency website
Fuel Station	Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70	There is an active Texaco petrol station located 221 m to the west of site. A second filling station was identified 343 m to the west but is now closed.
High pressure oil and gas pipelines	Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70	There are no high pressure oil or gas pipelines within 500 m of the site.
Ecology	Groundsure EnviroInsight Reports referenced HMD-147-1792169 & 70 MAGIC website 28/11/2014 http://magic.defra.gov.uk/home.htm	There are no Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA), Special Areas of Conservation (SAC), National Nature Reserves (NNR), National Parks, Areas of Outstanding Natural Beauty (AONB) or Ramsar (wetlands) within 2 km of the site.
Archaeology and building Heritage	MAGIC website 28/11/2014 http://magic.defra.gov.uk/home.htm	There are no scheduled ancient monuments, buildings in historic parks and gardens on site or buildings within the curtilage of the site.
Regulator Contact	Shropshire Council	The Environmental Health Officer for Shropshire Council has been consulted on the requirements of the A2 permit application.
	Environment Agency	The EA have not been consulted about the A2 application

Figure 1. Drift Geology

Figure 2. Solid Geology



4 HAZARD ASSESSMENT & PRELIMINARY CONCEPTUAL SITE MODEL

4.1 Potential On-Site Sources of Contamination

Activities associated with timber preparation and treatment

4.1.1 The wider site has been used for processing timber since at least the early 20th Century. This started with the exportation of timber from the town via the railway and continued after the closure of the station with the storage and cutting of timber on the same site. It is likely operation of the timber yard has required historic storage and use of treatment agents, fuel, lubricants, and other hydrocarbons. Spillages, unsuitable containment or mechanical breakdown may have resulted in emissions of any such substances to ground or site surfaces. Degradation of timber or saw dust may result in a potentially contaminating liquid with a high nutrient content entering groundwater or surface water.

4.1.2 All external and internal site surfaces are now sealed with tarmac or concrete, with the majority of wood processing activities carried out indoors with appropriate pollution control measures applied where necessary. Unprocessed timber, bark and wood chippings are stored externally on concrete surfaces. Wood products are also stored externally but kept physically separate to the pre-processed material. Vehicles are also parked externally at various locations around the site. The Material Safety Data Sheets for the chemicals currently used in the wood treatment process are included in Appendix E.

Railway Station and Sidings

4.1.3 The railway appeared to have an association with all local activities including movement of livestock, timber, import of solid fuels and other general provisions. As with the historic saw mill activities, there was potential for spillages of fuel (solid and liquid) and lubricants. There was potential for ground contamination from animal or human waste; the risk of long term residual contamination of this nature is likely to be low however.

Fuel Storage

4.1.4 Fuel for the saw mill activities is currently stored immediately adjacent to the permitted activity in a purpose-built tank farm with appropriate secondary containment. It is evident from historic aerial photographs that fuel has been stored at that same location since at least 1999. Leaks from the tanks or spillages during refuelling or use of the fuels may have resulted in emissions to ground. Historic photographs show the presence of a fueling depot to the north of the A2 permit application site boundary.

Livestock Management

4.1.5 Livestock has been transported via the railway and also traded at the Livestock Market at an adjacent site. Surface run-off contaminated with manure may have entered the ground or drainage historically and continue to do so.

Made Ground

4.1.6 Variable thicknesses of Made Ground are anticipated at the site due to the levelling which was likely to be required to build the current site. The site has been occupied by

a variety of structures which have now largely been demolished or potentially backfilled. The exact extent of foundations and associated below ground infrastructure removal is unknown and therefore may still be present on site. http://www.disused-stations.org.uk/b/bishops_castle describes the original platform as being uncovered during the demolition of the first shed on site. This was then covered in a thick plastic sheet and cement poured on top to form the foundations of the next shed (also since demolished). The made ground under the site may have the potential to produce ground gas, however this is subject to the readily biodegradable organic content of any fill material used.

4.2 Potential Off-Site Sources of Contamination

Electrical Sub Station

4.2.1 It is evident from historical maps and aerial photographs that there has been an electrical substation positioned immediately adjacent to the site since at least 1962. This was apparently expanded at some point between 1999 and 2014. Certain electrical substations may have been built with components containing PCBs and there is a risk that the ground may have been contaminated with them during construction, maintenance or decommissioning of the old infrastructure.

Gas Works

4.2.2 Historical maps show a gas works located to the west of the site in 1883 but no later than 1975. There are no further details about this facility except reference on www.bishopscastle.co.uk/tourism/history to coke being imported via the railway to the works. Gas works have the potential to generate a number of potentially contaminating and hazardous substances including but not limited to ammoniacal liquor, coal tar, spent oxide, foul lime and metals associated with these wastes. Potential sources of this contamination could be associated with underground storage tanks, pipework, above ground storage of coke, flue dust, clinker and boiler ash.

Builders / Car Yard

4.2.3 The land occupied by the gas works was replaced with a builders yard at some point between 1950 and 1975. There is no information relating to the decommissioning of the gas works or remediation of the land prior to the new activity taking place. At some point post 1989 the builders yard was replaced with a garage and car yard, although there may have been some overlap in activity. It is likely the gas works presents the highest risk of ground contamination, followed by the builders yard and car yard.

Industrial Units

4.2.4 Activities carried out in the adjacent industrial units may have been used for a variety of purposes. For example the unit closest to the permitted area was once used as a meat processing factory and may have produced a potentially contaminating effluent.

4.3 Identification of Pathways

Pathways to Human Health

4.3.1 Historic contamination at this site is most likely in the form of contaminated soil or groundwater. Any such contaminants may reach a human receptor by a number of

routes should they be exposed through dermal contact, inhalation or ingestion of any such material.

4.3.2 It is unlikely human receptors will be exposed to any historic contamination in the sites present state. All surfaces are sealed and there are no immediate plans to excavate into them. Should the operator wish to expand their activity or upgrade the infrastructure, it is possible the underlying ground may be exposed. It is considered that the risk of short term exposure for ground or other construction workers would be low unless there are asbestos fibres in any underlying the Made Ground. It is possible that the shallow groundwater underneath the site has been contaminated by historic activities. This deeper groundwater is abstracted and used in the treatment process but it is unlikely to have been impacted by the activity carried out above. It is possible that humans may come into contact with this water as it is pumped from the borehole and into the tank, but the risk of contamination being passed on is low.

Pathways to Controlled Waters

4.3.3 The sand and gravel drift deposits underneath the site (Secondary A Aquifer) support a pumping station 800 m to the south east (installation details in Appendix G). This is likely to be the most immediate receptor to historical contamination or emissions from the activity. The on-site borehole abstracts groundwater from the Baily Hill Formation the upper surface of which starts at 15 m below the site. This is classified as a Secondary B aquifer but contains enough groundwater to support limited abstraction for site use at a depth of 60 to 72 m below ground level.

4.3.4 Lateral or vertical migration of potentially contaminated groundwater offsite via the shallow groundwater is a viable pathway. There were a number of potentially significant contamination sources identified historically at or near the site, however most of these have since been removed. Current sources of pollution include the treatment building and the fuel tanks to the east.

4.3.5 The leaching of significant concentrations of contaminants from historic activities or made ground into the Secondary A Aquifer is unlikely to be significant due to the considerable time since these activities took place. Disturbance of this ground or removal of a surface sealing layer may re-mobilise some contamination however.

4.3.6 There is no direct link between the internal surfacing and drainage to external drainage systems. It is unlikely therefore that contamination or potentially contaminating activities occurring inside the building will be able to impact surface waters or off-site groundwater through infiltration. Contaminated groundwater may issue as a spring down-hydraulic gradient of the site and impact surface water receptors. Shallow groundwater levels may enter the sub-surface drainage and discharge at surface water receptors directly.

Pathways to Other Receptors

4.3.7 Other potential pathways that are possibly less significant to the site although may still require consideration are:

- potential phytotoxic effects on sensitive plants;

- chemical attack on foundations and services; and
- permeation of contaminants through potable water pipes.

4.4 Potential Receptors of Contamination

4.4.1 Based on the data described above, potential receptors to contamination have been identified in Table 4. The preliminary assessment of risks undertaken for the development considers potential risks to receptors A to F. The receptors A to F incorporate each of the receptors normally required by the Local Authority to be considered in planning conditions relating to land contamination i.e. Further receptor details are included in report referenced 2177/R/002.:

- Human Health (A & B)
- Property (including buildings, crops, livestock, pets, woodland, service lines) (E & F)
- Adjoining land (B & F)
- Controlled Waters – Surface and Groundwater (C & D)
- Ecological systems (E)
- Buildings and structures (F)

Table 4. Identified Potential Receptors

Identifier	Description
A	Human health during normal site operation
B	Human health during future construction / demolition works
C	Controlled waters – Surface Waters (rivers and streams).
D	Controlled waters – Groundwater (aquifers)
E	Local flora and fauna during site operation or site development.
F	Building structure and services.

4.4.2 It should be noted that there are no archaeological sites or ancient monuments considered to be within the zone of influence of the site.

4.4.3 The closest of each of the above receptor categories to the site are considered to be:

On-site

- Future site users;
- Construction workers at future developments;
- Operational buildings and associated infrastructure;
- Flora and fauna; and
- Groundwater - Secondary A aquifer.

Offsite

- Residential – 50 m to the south and 90 m to the west;
- Other industrial or commercial activities within 30 m in most directions;
- Flora and fauna; and
- Surface waters – culverted drains running under the site and discharging to the field drain 175 m to the southeast.

4.4.4 The possible contaminant linkages are discussed below. It should be noted that not all may be formed between all sources and receptors.

4.5 Contaminant Linkages

4.5.1 For each contamination source, there are potential contaminant linkages with all receptors. However, in the context of this site, not all of the contaminant linkages are plausible. The likelihood of the various pathways linking the contaminants to the receptors is presented in Table 6 below:

Table 5: Matrix of Contaminant Linkages

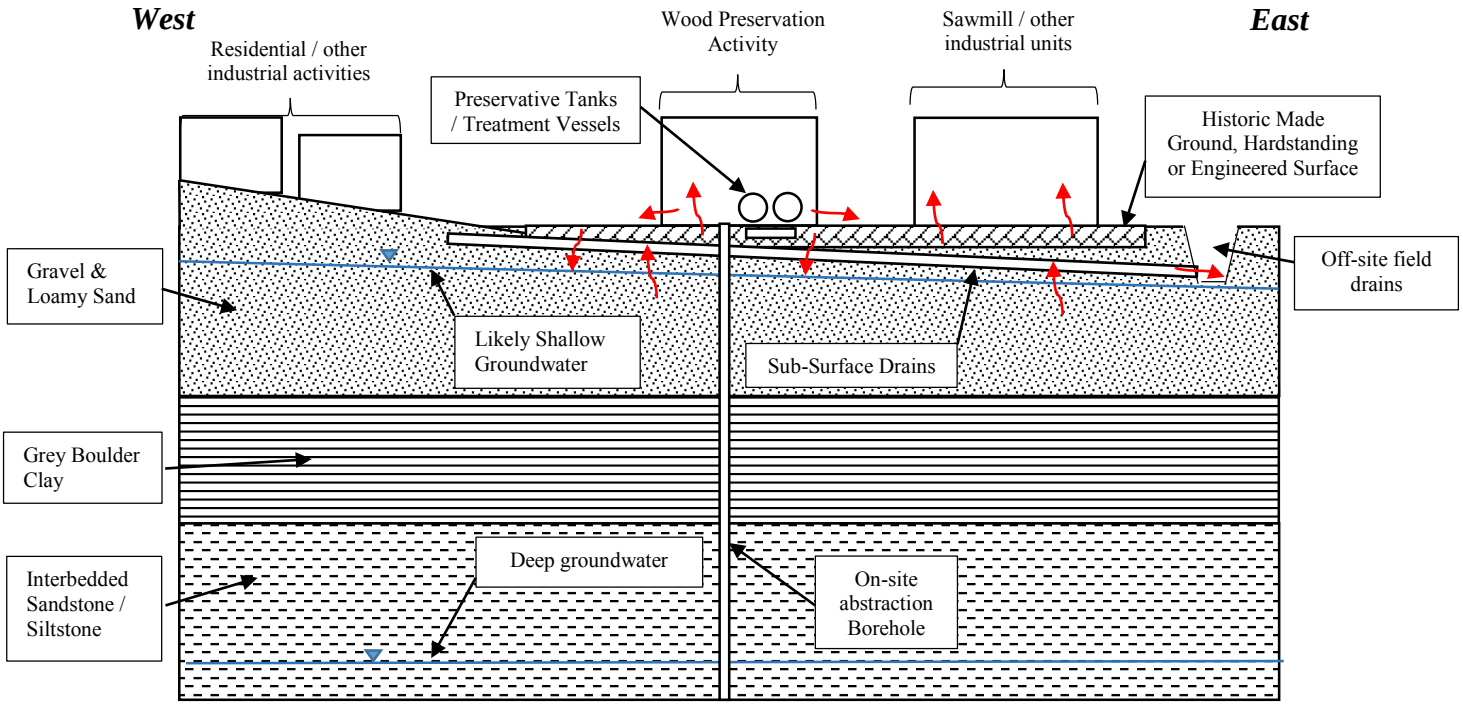
Potential Source / Contaminated Medium	Pathway	Receptor					
		A - Human health during normal site operation	B - Human health during future construction / demolition works	C – Surface Water	D - Groundwater	E - Flora & fauna	F - Building & Services
Soil / Made Ground	Ingestion	U	L	-	-	U	-
	Dermal / Direct Contact	U	L	-	-	U	A
	Inhalation	U	L	-	-	-	-
	Infrastructure/Drainage	U	L	U	U	U	U
	Groundwater	U	L	L	L	L	L
	Surface water	U	L	U	U	U	U
Groundwater	Ingestion	U	L	-	-	-	-
	Dermal / Direct Contact	U	L	-	-	U	-
	Inhalation	U	U	-	-	-	-
	Infrastructure/Drainage	L	L	L	L	L	L
	Groundwater	U	L	L	A	L	L
	Surface Water	U	L	L	L	L	L
Ground Gas	Infrastructure/Drainage	U	L	-	-	U	-

Key to significance of contaminant linkages
A = Almost Certain Pathway L = Likely Pathway U = Unlikely Pathway - =Not Applicable
Only Almost Certain and Likely contaminant linkages are taken forwards to the next part of the risk assessment.

4.7 Conceptual Site Model

4.7.1 In accordance with BS 10175, a schematic section has been developed for the site based on the previously presented data and contaminant linkage assessment:

Figure 3: Preliminary Conceptual Ground Model - Schematic Section (not to scale)



4.7.2 The information presented above represents the preliminary conceptual ground model that may need to be revised based on information obtained as part of any future intrusive investigation. The model shows the predicted geology and topography, the major on and off site potential contamination sources and vulnerable receptors.

4.8 Preliminary Contamination Hazard Assessment

4.8.1 The preliminary hazard assessment is based on current available guidance published by a number of sources and is summarised in Appendix B. A preliminary conceptual site model for this site has been established using the desk study information and has been used as a basis for the preliminary hazard assessment. Significant and possible potential pathways are only considered for the hazard assessment.

4.8.2 The preliminary hazard assessment is a qualitative assessment of the risks posed by each viable contaminant link identified. The hazard assessment leads to a recommended subsequent activity that could be:

- Action Required (AR) in the short term to break existing source-pathway-receptor link;
- Site Investigation Required (SIR) with objectives for risk estimation, or
- No Action Required (NAR) at this stage.

4.8.3 The hazard assessment is summarised in Table 6.

Table 6: Preliminary Risk Assessment

	Hazard Identification				Hazard Assessment		
Source	**Link**	**Pathway (s)**	**Receptor**	**Probability**	**Consequence**	**Risk**	**Hazard Assessment**
Contaminated / Made Ground	**1**	- Ingestion / Inhalation of dust - Dermal contact - Infrastructure / Drainage - Groundwater - Surface water	B: Human health during any future construction / demolition works	**High:** Disturbance of ground during construction of foundations or during work on buried services	**Low:** Area has been subject to long term exposure to historic contamination, pollutant concentrations likely to be low	**Medium**	SIR- Total soil concentration of relevant contaminants for contractor's risk assessments and method statements. Analysis will also provide quantification of background environmental concentrations.
	2	- Groundwater	C: Surface Water	**Low:** Would require groundwater to issue at surface	**Low:** Area has been subject to long term exposure to historic contamination	**Mild**	
	3	- Groundwater leaching contaminants from made ground	D: Groundwater	**Medium:** Groundwater passing through areas of historic contamination may affect other groundwater bodies. Groundwater may not be in contact with made ground.	**Low:** Area has been subject to long term exposure to historic contamination	**Medium**	
	4	- Groundwater leaching contaminants from made ground	E: Flora and Fauna	**Low:** Would require contaminated groundwater to issue at surface and flow into surface drainage	**Low:** Area has been subject to long term exposure to historic contamination	**Mild**	
	5	- Groundwater leaching contaminants from made ground - Direct Contact	F: Buildings and services	**High:** Existing foundations / services exposed to historic contamination in ground or from contaminated groundwater	**Low:** Area has been subject to long term exposure to historic contamination	**Medium**	
Contaminated Groundwater	**6**	- Infrastructure / Drainage	A: Human health during normal site operation	**Low:** Deep groundwater abstracted for use in the wood treatment process. Water is pumped from the ground direct into the tank and there is potential for exposure during handling or spillage. Unlikely to be contaminated.	**Low:** Water is drawn from depth and has been tested as suitable for use in industrial process and is unlikely to present a pollution risk.	**Mild**	SIR- Groundwater concentration of relevant contaminants for contractor's risk assessments and method statements. Analysis will also provide quantification of background environmental concentrations and determine typical shallow groundwater depth
	7	- Ingestion / Inhalation of dust - Dermal contact - Infrastructure / Drainage - Groundwater / Surface water	B: Human health during any future construction / demolition works	**Medium:** Disturbance of ground during construction of foundations or during work on buried services may result in exposure to contaminated groundwater. Groundwater may not be in contact with made ground.	**Low:** Area has been subject to long term exposure to historic contamination, pollutant concentrations likely to be low	**Medium / Mild**	
	8	- Infrastructure / Drainage	C: Surface Water	**Medium / Low:** Contaminated groundwater may enter buried services or drains and issue at sensitive receiving water courses	**Medium:** Contamination of sensitive water courses. Area is predominantly agricultural and susceptible to a number of potentially polluting activities. Requires high shallow groundwater levels.	**Medium**	

Table 6: Preliminary Risk Assessment

	Hazard Identification				Hazard Assessment		
Source	**Link**	**Pathway (s)**	**Receptor**	**Probability**	**Consequence**	**Risk**	**Hazard Assessment**
	9	- Infrastructure / Drainage - Groundwater / Surface water	D: Groundwater	**High:** Contaminated groundwater may flow direct or issue at surface and flow into other groundwater bodies	**Low:** Area has been subject to long term exposure to historic contamination	**Medium**	
	10	- Infrastructure / Drainage - Groundwater / Surface water	E: Flora and Fauna	**Low:** Would require groundwater to issue at surface or flow into buried services to issue at sensitive receptors. Groundwater may not be in contact with made ground.	**Low:** Area has been subject to long term exposure to historic contamination	**Mild**	
	11	- Infrastructure / Drainage - Groundwater / Surface water	F: Buildings and services	**Medium:** Existing foundations / services exposed to historic contamination in ground or from contaminated groundwater. Groundwater may not be in contact with made ground.	**Low:** Area has been subject to long term exposure to historic contamination	**Medium**	
Ground Gas	**12**	- Infrastructure / Drainage	A: Human health during normal site operation	**Low:** low likelihood of fill material with high organic content located beneath site	**High:** Potential for build-up of asphyxiative or explosive atmospheres in confined spaces beneath the site	**Mild**	SIR – to include the installation and monitoring of appropriate ground gas monitoring wells in accordance with CIRIA 665.
	13	- Infrastructure / Drainage	A: Human health during normal site operation	**Low:** low likelihood of fill material with high organic content located beneath site	**High:** Potential for build-up of asphyxiative or explosive atmospheres in confined spaces beneath the site	**Mild**	

4.8.4 There is a typical risk ranking of medium to low associated with the site. The site investigation objectives described above are largely precautionary given the time since potentially contaminated activities have been carried out at the site.

4.9 Geotechnical Hazards Associated with the Development

4.9.1 In addition to the environmental hazards, there are also potential geotechnical hazards associated with the stability of the ground (including load bearing capacity, slope stability and effects of ground (mining) cavities). Local authorities follow NPPF (2012) which requires that the "*site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining.*" A summary of the geotechnical considerations with regards to the development of the site is provided below:

Table 7: Summary of Geotechnical Hazards

Geohazards	Potential Presence
Highly Compressible Ground	Negligible
Collapsible Soils	Very low
Swelling Clay	Low
Running Sand	Very low
Ground Dissolution	Negligible
Landslip	Very Low

Table 7: Summary of Geotechnical Hazards

Geohazards	Potential Presence
Mining & Quarrying	The Groundsure report describes the possibility of rare and localised small scale mining may have occurred although this is very unlikely.
Former Buildings	It is likely the foundations of the station buildings and platform are still present under the site. The track itself may also have been backfilled to bring it up to level

4.9.2 The ground conditions under the site are unlikely to affect the current operational practices. If the activity was to be expanded at a later date, it would be prudent to confirm the chemical and geotechnical characteristics of the ground prior to construction.

4.10 Environmental Assessment

4.10.1 A preliminary risk assessment has been made based on the contaminant-pathway-receptor model as defined in Part IIA of the Environmental Protection Act, 1990 and in accordance with BS 10175: 2011 "Investigation of Potentially Contaminated Sites – Code of Practice". A preliminary conceptual site model has been produced to set out the characteristic ground conditions and elements of the surrounding environment and has assisted with identifying potential sources of contamination, potential receptors of the contamination and potential pathways between them.

4.10.2 A review of historical information identifies the most likely sources of contaminants at site to be with previous activities (e.g. gas works, railway, fuel storage) and the current treatment activities. It is unlikely that significant quantities of contaminants are present in the ground but this should be confirmed.

4.10.3 The potential for ground gas to be present at site is expected to be low, however this may be subject to the nature of any made ground used to backfill the old railway sidings to current levels.

5 CONCLUSION

5.1 Environmental Risk Assessment

5.1.1 A preliminary risk assessment has been carried based on the contaminant-pathway-receptor model as defined in Statutory Guidance to Part IIA of the Environmental Protection Act, 1990 and in accordance with BS 10175: 2011 "Investigation of Potentially Contaminated Sites – Code of Practice.

5.1.2 The results of the risk assessments indicate the likely widespread presence of contaminants attributable to historic activities may be present at the site, however the significance of these source may have diminished with the significant time that has passed since their cessation. There is currently a relatively low risk to identified receptors including humans, controlled waters and ecological receptors. There is a possibility for contamination to be present within suspected Made Ground associated with the former railway sidings and off-site sources such as the old gas works. Ground gas levels are anticipated to be low, however, this requires confirmation through an intrusive site investigation. There may be a risk if the site was developed again.

5.1.3 The installation details provided for the on-site abstraction borehole suggest it is drawing groundwater from the deep Baily Hill Formation aquifer, not the shallow sands and gravels. The upper formation does appear to be abstracted from by the off-site pumping station 800 m to the south east. It is unlikely that the site will have an impact on groundwater in the Baily Hill Formation, not least because of the 5 m thick low permeability barrier afforded by the band of clay sitting above it. Given the other potential sources of contamination and the significant distance to the pumping station, it is unlikely sampling of this borehole will determine if contamination of the shallow groundwater from the wood treatment activity has occurred.

5.2 Recommendations for Further Works

5.2.1 It is understood that the operator is considering the installation of ground source heating to further reduce energy use at site. This will require the installation of deep boreholes close to the application site. It is suggested the operator takes this opportunity to further characterise ground conditions beneath the site by obtaining physical descriptions of the underlying strata and carry out physical / chemical testing of the arisings. This information could then be used to support any future developments for expansion of the treatment building.

5.2.2 Information from the intrusive site investigation and any analytical data can be used to update the Conceptual Site Model and assess risks to identified receptors in accordance with CLR11 and other guidance documents.

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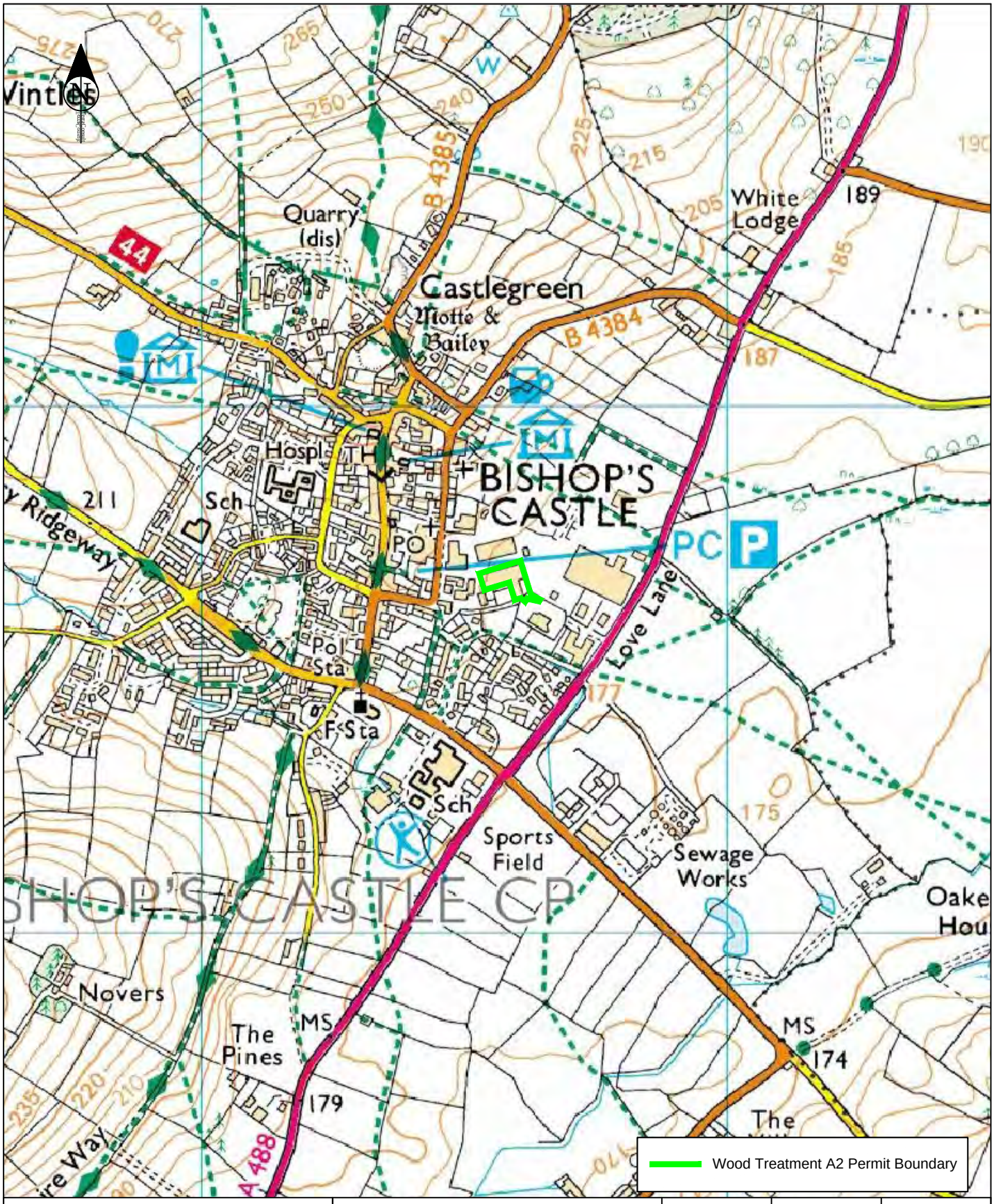
DRAWINGS



TerraConsult

Bold Business Centre, Bold Lane, Sutton, St Helens WA9 4TX

Client

Charles Ransford & Sons Ltd

Site

Ransford Sawmill, Bishops Castle

Title

Site Location

Scale	1:10,000	@ A4
Drawing No.	2177/1/002	
Rev	Date	Description
File	21771002SiteLocation.dwg	
Date	01/15	Engineer PCT
Drawn	PP	Checked PP

Note:
Drawing referenced from McCartneys drawing No. LSV/431

TerraConsult

Bold Business Centre, Bold Lane, Sutton, St Helens WA9 4TX

Client

Charles Ransford & Sons Ltd

Site

Ransford Sawmill, Bishops Castle

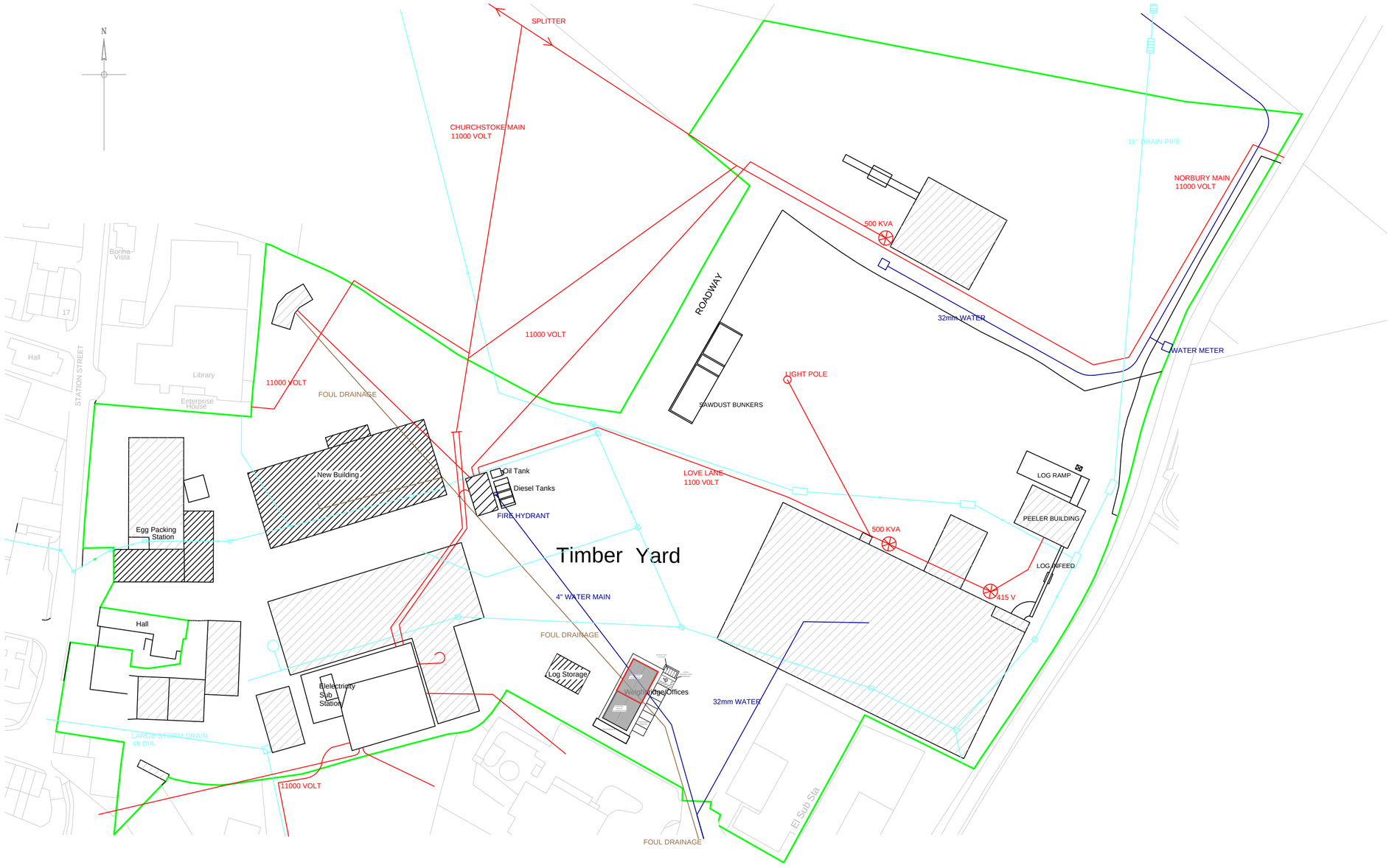
Title

Part A2 Permit Boundary

Scale	1:1,500	@ A3
Drawing No.	2177/1/001	

Rev	Date	Description

File	21771001SitePlan.dwg		
Date	01/15	Engineer	PCT
Drawn	PP	Checked	JB



GREEN = SITE BOUNDARY
LT BLUE = STORM WATER DRAINAGE
RED = UNDER GROUND POWER CABLES
BLUE = WATER MAIN
LT GREEN = FOUL DRAINAGE
LT ORANGE = COMMUNICATION

GENERAL NOTES & SPECIFICATIONS

MATERIALS, WORKMANSHIP AND CONSTRUCTION ARE TO CONFORM WITH CURRENT STANDARDS, CODES OF PRACTICE, AGREEMENT CERTIFICATES AND MANUFACTURERS RECOMMENDED SPECIFICATIONS AND ARE TO FULLY COMPLY WITH THE BUILDING REGULATIONS 1991, RELATED APPROVED DOCUMENTS AND LEGISLATION.

ALL SERVICES ARE TO BE INSTALLED IN ACCORDANCE WITH STATUTORY AUTHORITY REGULATIONS AND BY-LAWS.

SAFETY

STATUTORY INSTRUMENT 2007 No 320 - THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2007

THE CONTRACTOR IS TO COMPLY WITH THE DUTIES IMPOSED ON HIM BY THE ABOVE REGULATIONS AND LIAISE DIRECTLY WITH THE CDM COORDINATOR AS APPOINTED BY THE CLIENT

IMPORTANT

DO NOT SCALE FROM THIS DRAWING. WRITTEN DIMENSIONS ARE IN ALL CASES TO BE PREFERRED TO SCALED DIMENSIONS. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE DESIGNER AT ONCE.

RETENTION OF TITLE

LICENCES

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7 BROAD STREET
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JOB:
CHARLES RANSFORDS & SONS LTD
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SY8 5AQ

CLIENT:
MR C RANSFORD & SONS LTD

TITLE:
SITE PLAN

REVISIONS:	DATE:
UPDATED SITE PLAN	07/02/2011
SCALES: SITE PLAN - 1:1250	DATE: February 2011
DRAWN BY: JY/ DH	ORIGINAL SHEET SIZE: A2
DRAWING NUMBER:	

APPENDICES

APPENDIX A

Service Constraints and Report Limitations

Service Constraints and Report Limitations

This report and the site investigation (together comprise the "Services") were compiled and carried out by TerraConsult Limited (TCL) for Shaun Heaton (the "client") in accordance with the terms of a contract between TCL and the "client." The Services were performed by TCL with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by TCL taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between TCL and the client.

Other than that expressly contained in the above paragraph, TCL provides no other representation or warranty whether express or implied, is made in relation to the Services. Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon, or transferred to, by any other party without the written agreement of a Director of TCL. If a third party relies on this report, it does so wholly at its own and sole risk and TCL disclaims any liability to such parties.

It is TCL's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without TCL 's review and advice shall be at the client's sole and own risk.

The information contained in this report is protected by disclosure under Part 3 of the Environmental Information Regulations 2004 pursuant to the provisions of Regulation 12(5) without the consent in writing of a Director of TerraConsult Limited.

The report was written in January 2015 and should be read in light of any subsequent changes in legislation, statutory requirements and industry practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of TCL. In the absence of such written advice of TCL, reliance on the report in the future shall be at the client's own and sole risk. Should TCL be requested to review the report in the future, TCL shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between TCL and the client.

The observations and conclusions described in this report are based solely upon the Services that were provided pursuant to the agreement between the client and TCL. TCL has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report. TCL is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, TCL did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, radon gas or other radioactive or hazardous materials.

The Services are based upon TCL's observations of existing physical conditions at the site gained from a walkover survey of the site together with TCL's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst TerraConsult Ltd have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report. Further TCL was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. TCL is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to TCL and including the doing of any independent investigation of the information provided to TCL save as otherwise provided in the terms of the contract between the client and TCL.

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and TCL] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.

APPENDIX B

Environmental Risk Assessment Methodology & Terminology

ENVIRONMENTAL RISK ASSESSMENT METHODOLOGY & TERMINOLOGY

Legislation Overview

This report includes hazard identification and environmental risk assessment in line with the risk-based methods referred to in relevant UK legislation and guidance. Government environmental policy is based upon a "suitable for use approach," which is relevant to both the current use of land and also to any proposed future use The contaminated land regime is the statutory regime for remediation of contaminated land that causes an unacceptable level of risk and is set out in Part 2A of the Environmental Protection Act 1990 ("EPA 1990"). The main objective of introducing the Part IIA regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health or the wider environment given the current use and circumstances of the land. Part IIA provides a statutory definition of contaminated land under Section 78A(2) as:

> *"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:*
>
> *(a) Significant harm is being caused or there is a significant possibility of such harm being caused;*
>
> *or*
>
> *(b) Pollution of controlled waters is being, or is likely to be, caused."*

In order to assist in establishing if there is a "*significant possibility of significant harm*" there must be a "*contaminant linkage"* for potential harm to exist. That means there must be a source(s) of contamination, sensitive receptors present and a connection or pathway between the two. This combination of contaminant-pathway-receptor is termed a "contaminant linkage or CPR linkage."

Part IIA of The Environmental Protection Act 1990 is supported by a substantial quantity of guidance and other Regulations. Key implementing legislation of the Part 2A regime includes the Contaminated Land (England) Regulations 2006 (SI 2006/1380) as recently amended by the overarching legislation for the contaminated land regime, which implements the provisions of Part IIA of the Environmental Protection Act 1990 (as inserted by section 57 of the Environment Act 1995), came into force on 14th July 2000 together with recent amended regulations: Contaminated Land (England) (Amendment) Regulations 2012 (SI 2012/263). Revised and Contaminated Land Statutory Guidance was published by DEFRA in (DEFRA, April 2012). Part IIA defines the duties of Local Authorities in dealing with it. Part IIA places contaminated land responsibility as a part of planning and redevelopment process rather than Local Authority direct action except in situations of very high pollution risk. In the planning process guidance is provided by National Planning Policy Framework (NPPF) of March 2012 which requires that a site which has been developed shall not be capable of being determined "contaminated land" under Part IIA. In practice, Planning Authorities require sites being developed to have a lower level of risk post development than the higher level of risk that is required in order to determine a site as being contaminated in accordance with Part IIA. This is to ensure that there is a suitable zone of safety below the level for Part IIA determination and prevent recently developed sites becoming reclassified as contaminated land if there are future legislative or technical changes (e.g. a substance is subsequently found to be more toxic than previously assessed this increases its hazard)..

The criteria for assessing levels of contaminants and hence determining whether a site represents a hazard are based on a range of techniques, models and guidance. Within this context it is relevant to note that Government objectives are:

(a) to identify and remove unacceptable risks to human health and the environment;
(b) to seek to bring damaged land back into beneficial use;
(c) to seek to ensure that the cost burdens faced by individuals, companies and society as a whole are proportionate, manageable and economically sustainable.

These three objectives underlie the "suitable for use" approach to remediation of contaminated land. The "suitable for use" approach focuses on the risks caused by land contamination. The approach recognises that the risks presented by any given level of contamination will vary greatly according to the use of the land and a wide range of other factors, such as the underlying geology of the site. Risks therefore should be assessed on a site-by-site basis.

The "suitable for use" approach then consists of three elements:

(a) *ensuring that land is suitable for its current use* - in other words, identifying any land where contamination is causing unacceptable risks to human health and the environment, assessed on the basis of the current use and circumstances of the land, and returning such land to a condition where such risks no longer arise ("remediating" the land); the contaminated land regime provides the regulatory mechanisms to achieve this;

(b) *ensuring that land is made suitable for any new use, as planning permission is given for that new use* - in other words, assessing the potential risks from contamination, on the basis of the proposed future use and circumstances, before official permission is given for the development and, where necessary to avoid unacceptable risks to human health and the environment, remediating the land before the new use commences; this is the role of the town and country planning and building control regimes; and

(c) *limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use of the land for which planning permission is being sought* - in other words, recognising that the risks from contaminated land can be satisfactory assessed only in the context of specific uses of the land (whether current or proposed), and that any attempt to guess what might be needed at some time in the future for other uses is likely to result either in premature work (thereby running the risk of distorting social, economic and environmental priorities) or in unnecessary work (thereby wasting resources).

The mere presence of contaminants does not therefore necessarily warrant action, and consideration must be given to the scale of risk involved for the use that the site has, and will have in the future.

Risk Assessment

Current practice recommends that the determination of potential liabilities that could arise from land contamination be carried out using the process of risk assessment, whereby “risk” is defined as:

“(a) The probability, or frequency, or occurrence of a defined hazard; and

(b) The magnitude (including the seriousness) of the consequences."

The UK's approach to the assessment of environmental risk is set out in by the Department of the Environment Transport and the Regions (2000) publication "A Guide to Risk Assessment and Risk Management for Environmental Protection" (also called Greenleaves II). This established an iterative, systematic staged process which comprises:

(a) Hazard identification;
(b) Hazard assessment;
(c) Risk estimation;
(d) Risk evaluation;
(e) Risk assessment;

At each stage during the development process the above steps are repeated as more detailed information becomes available for the site.

For an environmental risk to be present, all three of the following elements must be present:

- Source/Contaminant: hazardous substance that has the potential to cause adverse impacts;
- Receptor: target that may be affected by contamination: examples include human occupants/users of site, water resources (rivers or groundwater), or structures;
- Pathway: a viable route whereby a hazardous substance may come into contact with the receptor.

The absence of one or more of each component (contaminant, pathway, receptor) would prevent a contaminant linkage being established and there would be no significant environmental risk.

The identification of potential contaminant linkages is based on a Conceptual Model of the site, which is subject to continual refinement as additional data becomes available. As part of a Phase I Investigation (Desk Study and site walk over) a Preliminary Conceptual Site Model (PCSM) is formed. Based on the PCSM, potential contaminant linkages can be assessed. If the PCSM and hazard assessment indicate that a pollution linkage is not of significance then no further assessment or action is required due to this linkage. For each significant and possible linkage a risk assessment is carried out. The linkages which potentially pose significant risks may require a variety of responses ranging from immediate remedial action or risk management or, more commonly, further investigation and risk assessment. This next stage is termed a Phase II Main Site Investigation and should provide additional data to allow refinement of the Conceptual Site Model and assess the level of risk from each contaminant linkage.

Definition of Risk Assessment Terminology

The criteria used for risk assessment are broadly based on those presented in DETR's "A Guide to Risk Assessment and Risk Management for Environmental Protection" (2000). The Severity of the risk is classified according to the criteria in Table B.1 below:

Table B.1 Severity/Consequence of Risk	
Severe	Acute risks to human health. Catastrophic damage to buildings/property (e.g. by explosion). Direct pollution of sensitive water receptors or serious pollution of other controlled water (watercourses or groundwater) bodies.
Medium	Harm to human health from long-term exposure. Slight pollution of sensitive controlled waters (surface waters or aquifers) or pollution of other water bodies. Significant effects on sensitive ecosystems or species.
Mild	No significant harm to human health in either short or long term. No pollution of sensitive controlled waters, no more than slight pollution of non-sensitive waters. Significant damage to buildings or structures. Requirement for protective equipment during site works to mitigate health effects.
Negligible	Damage to non-sensitive ecosystems or species. Minor damage to buildings or structures. No harm or pollution of water.

The probability of the risk occurring is classified according to criteria given in Table B.2 below:

Table B.2: Probability of Risk Occurring	
High likelihood	Contaminant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor.
Medium/Reasonably Foreseeable	Contaminant linkage may be present, and it is probable that the risk will occur over the long term.
Low/Unlikely	Contaminant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Negligible/ Not credible	Contaminant linkage may be present but the circumstances under which harm would occur are improbable.

An overall evaluation of the level of risk is gained from a comparison of the severity and probability, as shown in Table B.3 below:

Table B.3: Comparison of Severity and Probability					
		Severity			
		Severe	**Medium**	**Mild**	**Negligible**
Probability	**High likelihood**	Very High Risk	High Risk	Medium/Low Risk	Low Risk
	Medium/Reasonably Foreseeable	High Risk	Medium Risk	Low Risk	Near Zero
	Low/Unlikely	High/Medium Risk	Medium/Low Risk	Low Risk	Near Zero
	Negligible/ Not credible	Medium/Low Risk	Low Risk	Low Risk	Near Zero

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

AR - Action Required, Remediation or mitigation or site investigation works required
SIR - Site Investigation Required, further assessment is required.
NAR - No Action Required.

A description of the evaluated risk is as follows:

Table B.4 – Description of the Classified Risks and Likely Action Required	
Evaluated Risk	**Recommended Actions**
Very High Risk	AR: There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High Risk	AR: Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the long term.
Moderate Risk	SI: It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low Risk	NAR: It is possible that harm could arise to a designated receptor from an identified hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.
Near Zero	NAR: There is a negligible possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Management of Contaminated Land

When risk assessment of the site has been completed and this indicates that remedial works are required, the main guidance in managing this process is set out in the DEFRA/EA publication CLR11 (2004) "Model Procedures for the Management of Land Contamination." The stages of managing remediation are as follows:

(a) Options Appraisal and develop Remediation Strategy;
(b) Develop Implementation Plan and Verification Plan;
(c) Remediation, Verification and Monitoring.

The Remediation Strategy sets out the remediation targets, identifies technically feasible remedial solutions and presents an evaluation of the options so that these can be assessed enabling that the most suitable solution is adopted. An outline of the proposed remedial method should be presented. Agreement should be sought of the appropriate statutory bodies for the Remediation Strategy before proceeding to the next stage.

The Implementation Plan is a detailed method statement setting out how the remediation is to be carried out including stating how the site will be managed, welfare procedures, health and safety considerations together with practical measures such as details of temporary works, programme of works, waste management licences and regulatory consents required. Agreement should again be sought of the appropriate statutory bodies for this Plan.

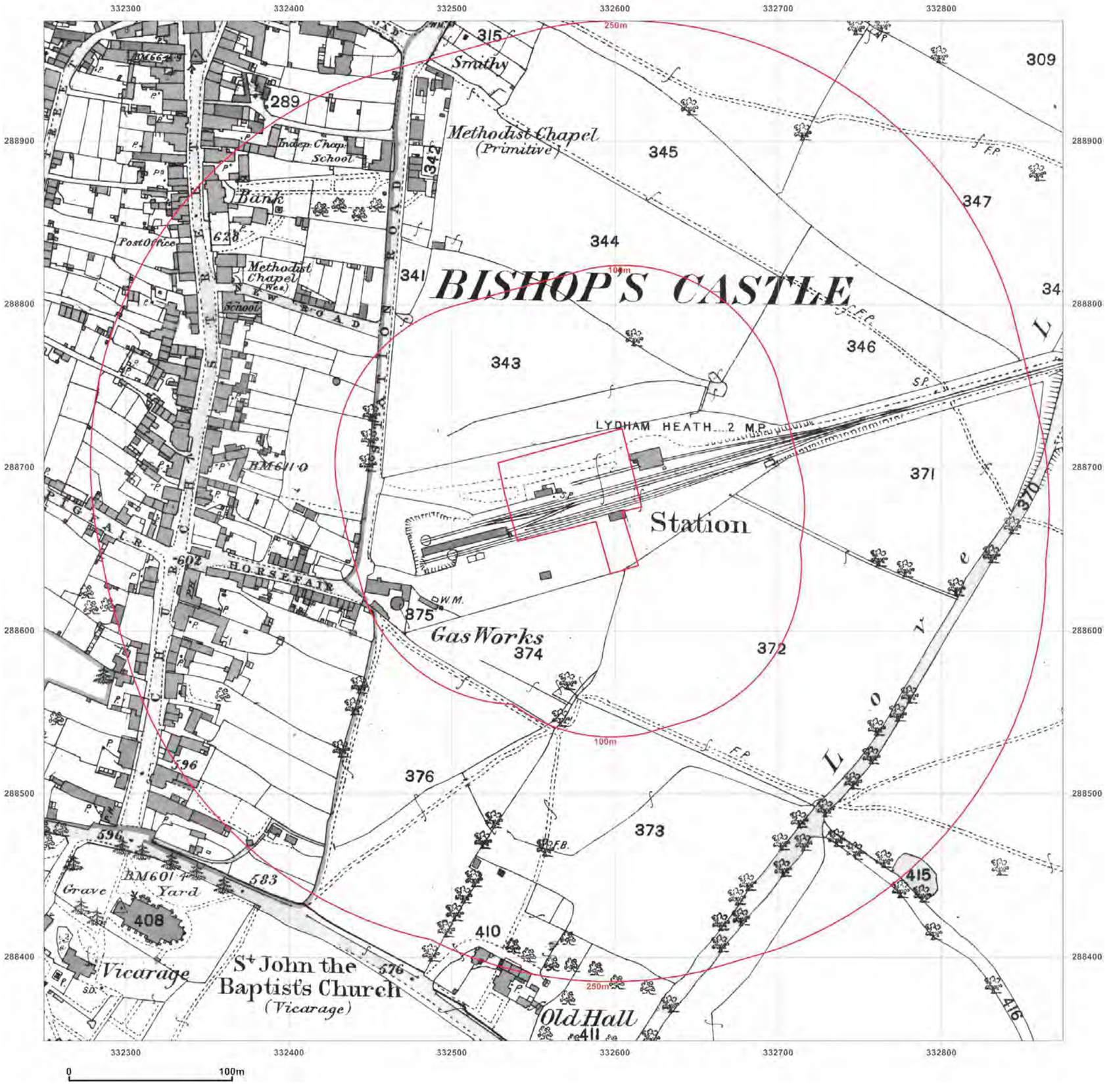
The Verification Plan sets out the requirements for gathering data to demonstrate that the remediation has met the required remediation objectives and criteria. The Verification Plan presents the requirements for a wide range of issues including the level of supervision, sampling and testing regimes for treated materials, waste and imported materials, required monitoring works during and post remediation, how compliance with all licenses and consents will be checked etc. Agreement should again be sought of the appropriate statutory bodies for the Verification Plan. On completion of the remediation a Verification Report should

be produced to provide a complete record of all remediation activities on site and the data collected as required in the Verification Plan. The Verification Report should demonstrate that the remediation has met the remedial targets to show that the site is suitable for the proposed use.

APPENDIX C

Groundsure Report

(Historical Maps & Datasheets on Surrounding Land Use)



GroundSure
ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: County Series

Map date: **1884**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1884
Revised 1884
Edition N/A
Copyright N/A
Levelled N/A

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GroundSure Environmental Insight
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 28 November 2014

To view map legend click here *Legend*

GroundSure
ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: County Series

Map date: **1903**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1903
Revised 1903
Edition N/A
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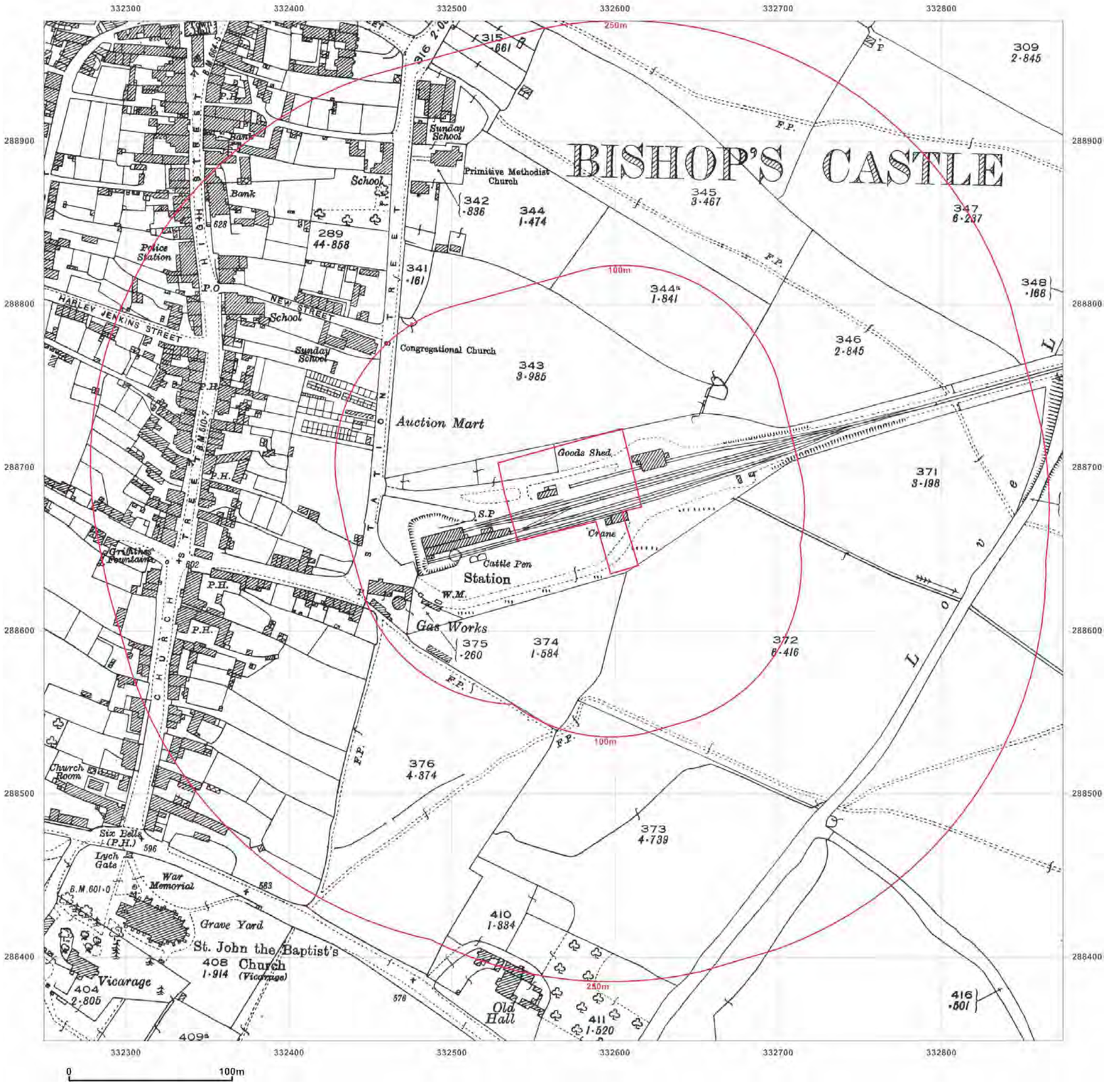

GroundSure
ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: County Series

Map date: **1926**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1926
Revised 1926
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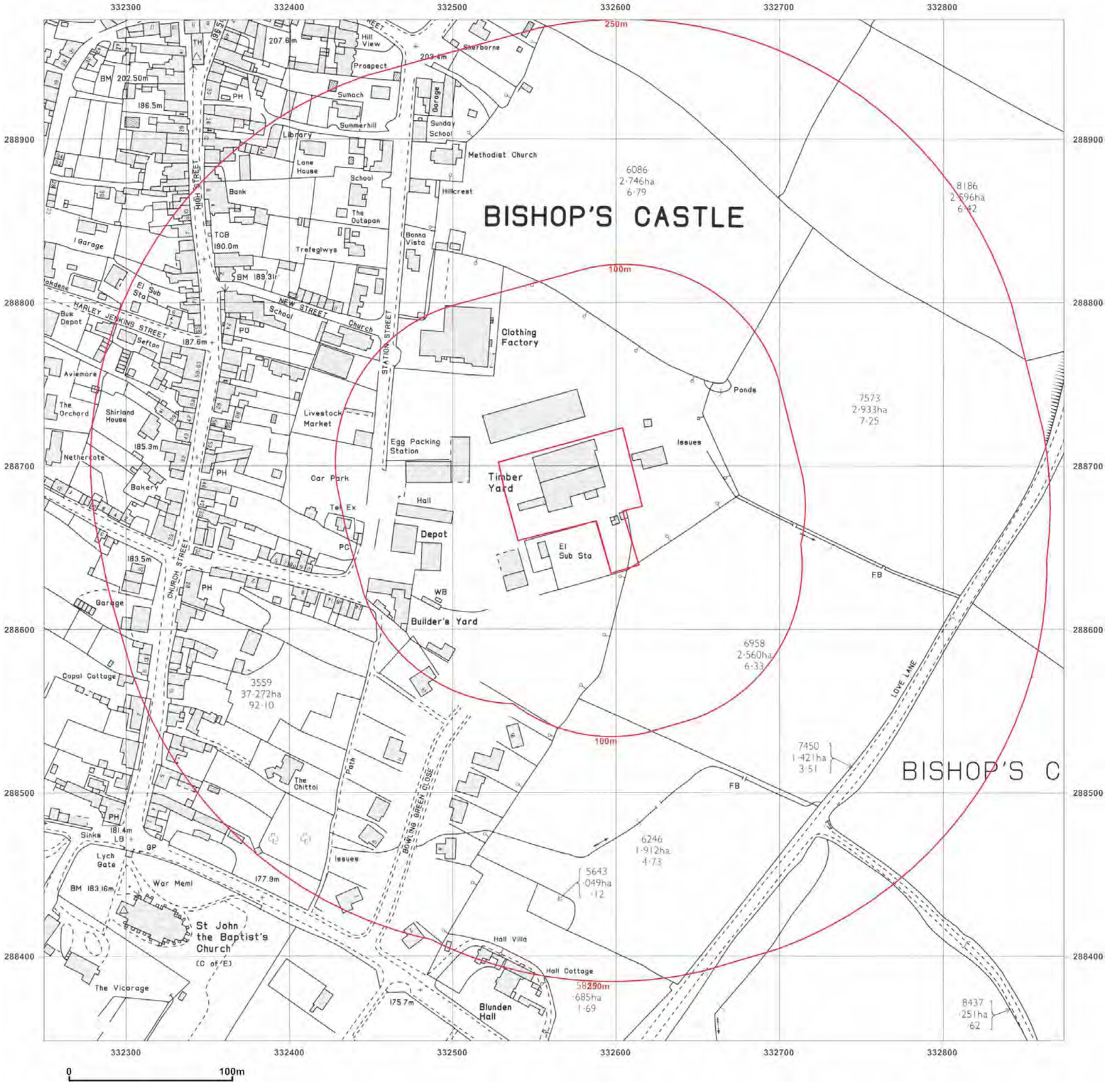

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ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: National Grid

Map date: **1975**

Scale: 1:2,500

Printed at: 1:2,500

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Edition N/A
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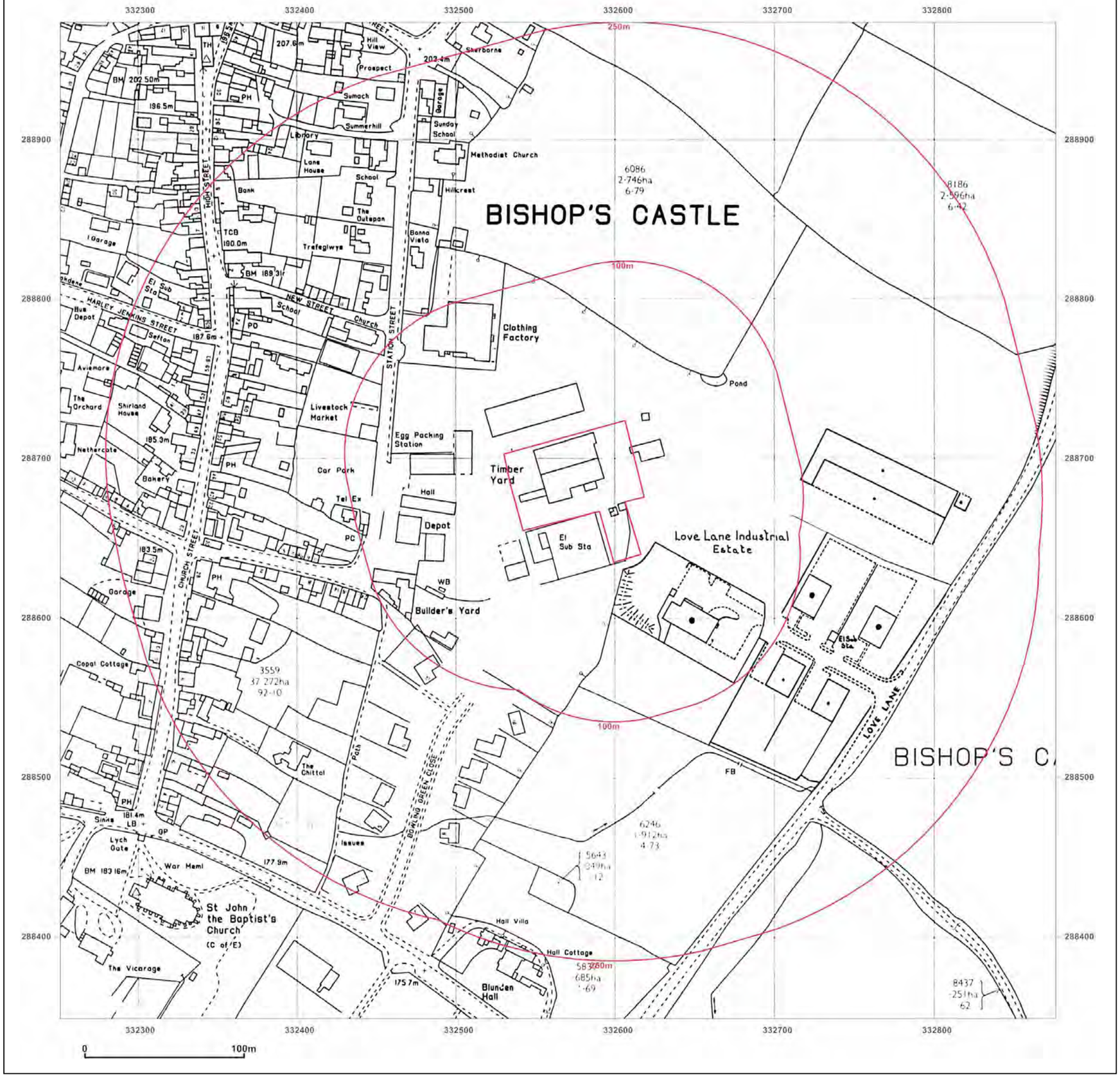

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ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: National Grid

Map date: **1986**

Scale: 1:2,500

Printed at: 1:2,500

N
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Revised 1986
Edition N/A
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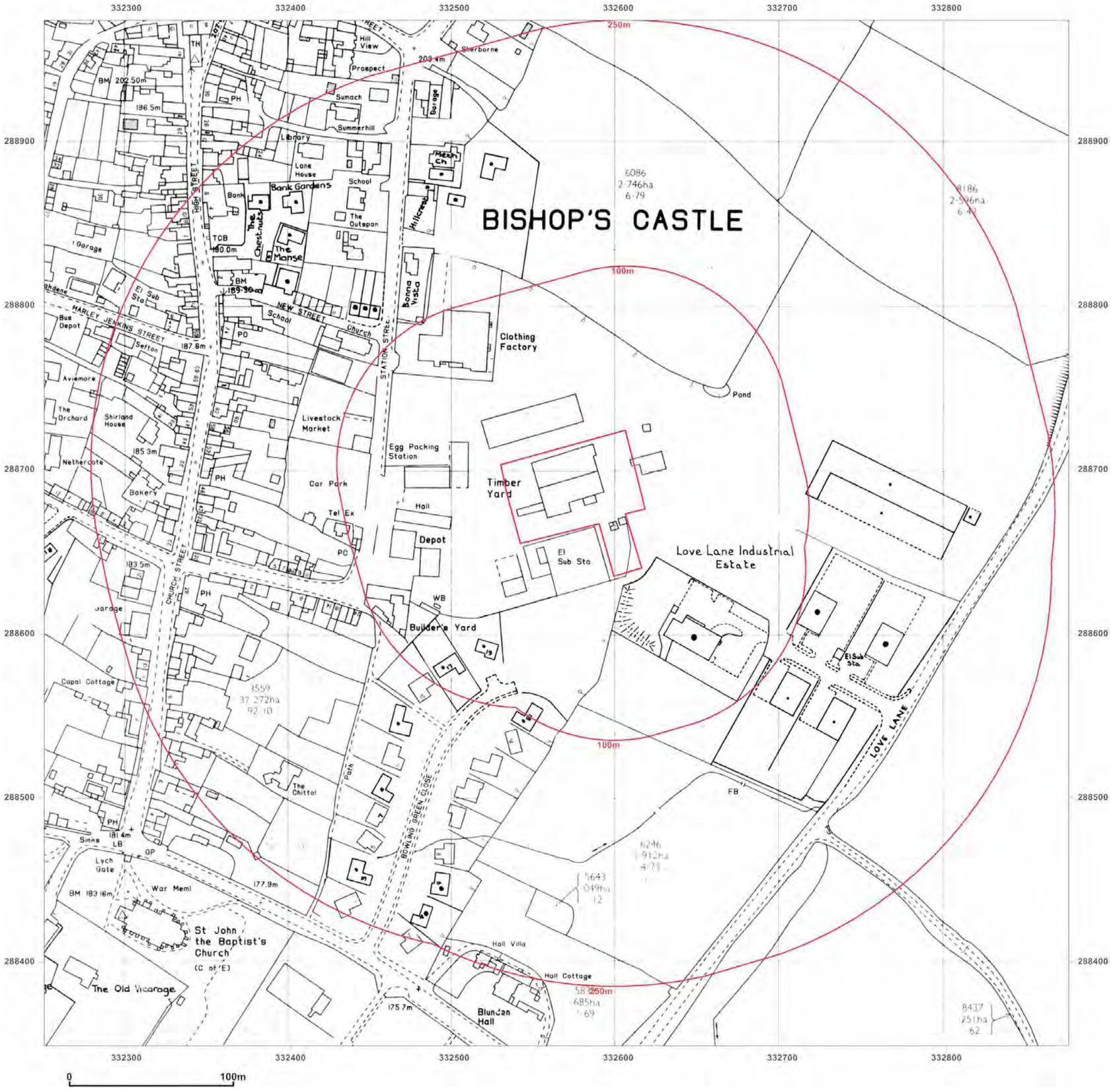

GroundSure
ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: National Grid

Map date: **1989**

Scale: 1:2,500

Printed at: 1:2,500

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Edition N/A
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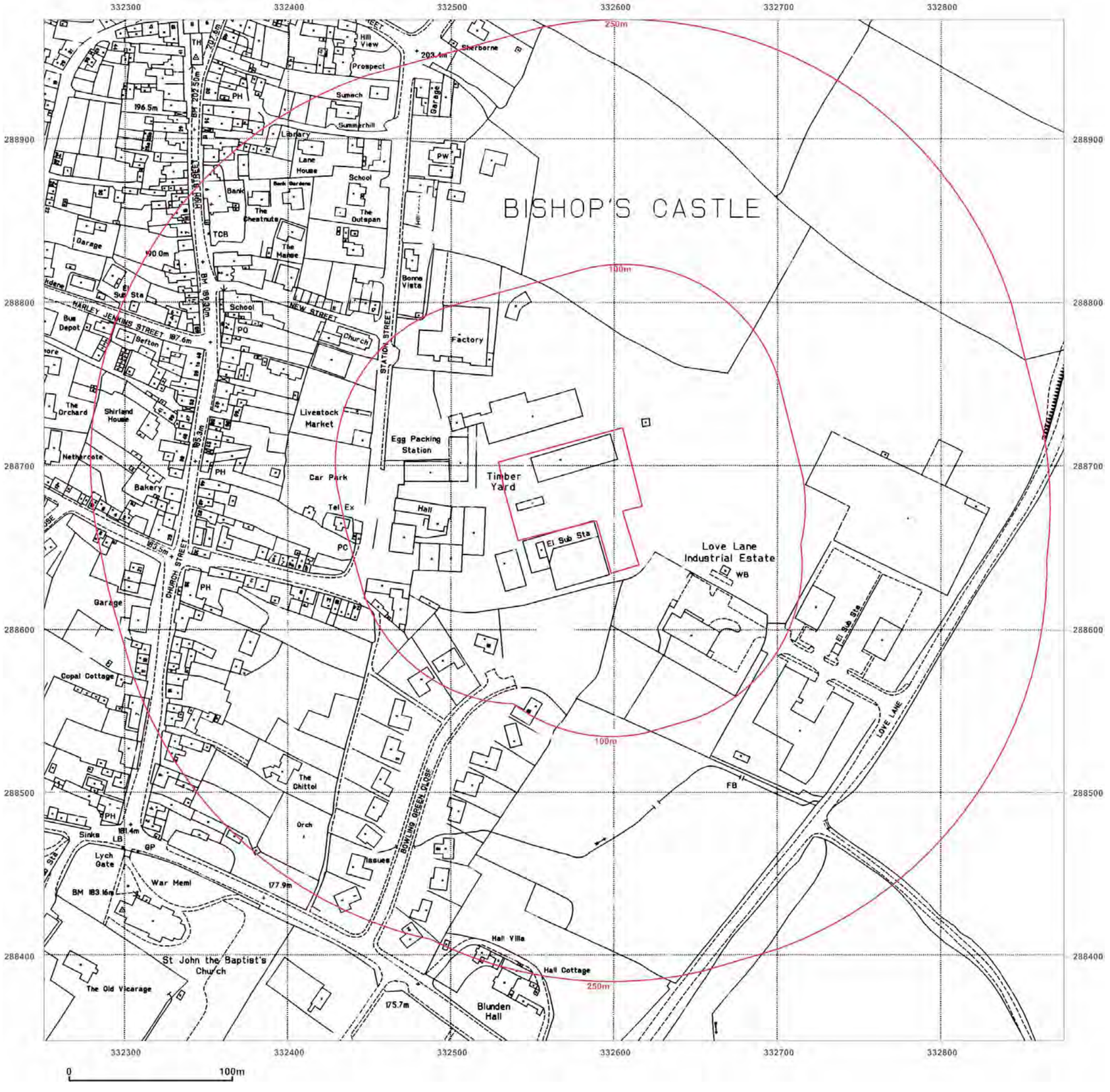

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Site Details:

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STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: National Grid

Map date: **1994**

Scale: 1:2,500

Printed at: 1:2,500

N
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S

Surveyed N/A
Revised N/A
Edition N/A
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W: www.groundsure.com

Production date: 28 November 2014

To view map legend click here *Legend*

Terra Consult

Bold Business Centre, Bold Lane,
Bold Lane,
Sutton, WA9 4TX

GroundSure Reference:	HMD-147-1792170
Your Reference:	Ransfords_Saw_Mill
Report Date	28 Nov 2014
Report Delivery Method:	Email - pdf

GroundSure Geoinsight

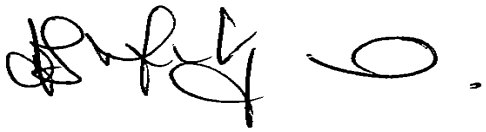
Address: RANSFORD SAWMILLS, STATION STREET, BISHOPS CASTLE, SY9 5AQ

Dear Sir/ Madam,

Thank you for placing your order with GroundSure. Please find enclosed the **GroundSure GeoInsight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above GroundSure reference number.

Yours faithfully,



Managing Director
Groundsure Limited

Enc.
GroundSure GeoInsight

GroundSure GeoInsight

Address:	**RANSFORD SAWMILLS, STATION STREET, BISHOPS CASTLE, SY9 5AQ**
Date:	**28 Nov 2014**
Reference:	**HMD-147-1792170**
Client:	**Terra Consult**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	27-Mar-2012
Grid Reference:	332562,288661
Site Size:	0.45ha

Contents Page

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?	Yes
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 in a Radon Affected Area, as between 10 and 30% 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?	Full 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	3	0	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	1

Section 3: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
3.1 Historical Mining	0	0	0	0	0

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	1	0	0	3	5
3.4 Non-Coal Mining	1	0	1	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	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	4	8

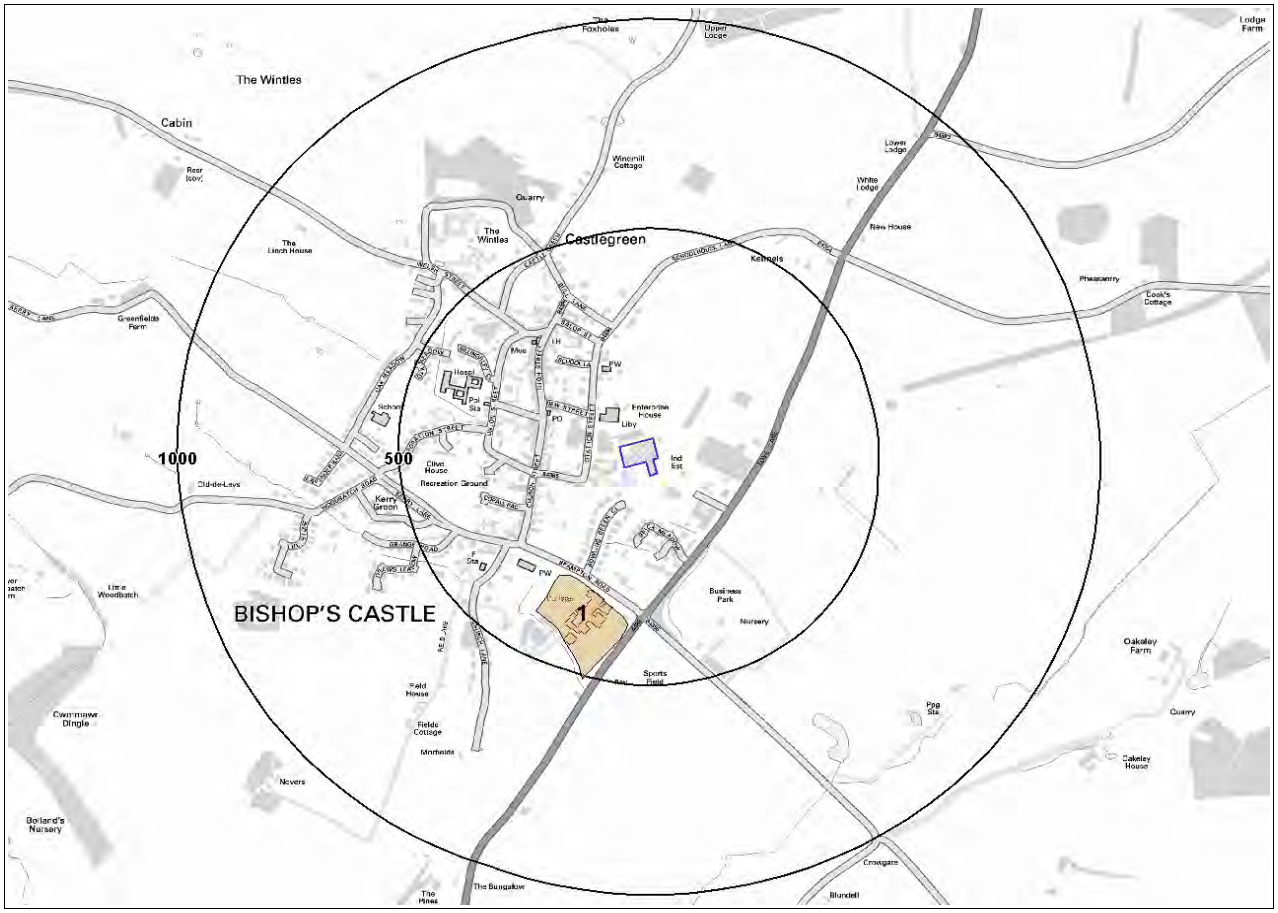
Section 7: Railways and Tunnels	On-site	0-50m	51-250	251-500
7.1 Tunnels	0	0	0	Not Searched
7.2 Historical Railway and Tunnel Features	4	0	0	Not Searched
7.3 Historical Railways	0	0	0	Not Searched
7.4 Active Railways	0	0	0	Not Searched

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

NW N NE



W E

SW S SE

Artificial Ground Legend

Mapping sourced from Ordnance Survey

Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

1 Geology

1.1 Artificial Ground

1.1.1Artificial/ Made Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:165

Are there any records of Artificial/Made Ground within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	285.0	SW	MGR-MGRD	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

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

NW N NE

W E

SW S SE

Superficial Deposits and Landslips Legend

Mapping sourced from Ordnance Survey

Site Outline

500
1000
Search Buffers (m)

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	GFSDD-SAGR	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
2	11.0	N	HMGDD-DMTN	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON
3	128.0	SW	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
4	247.0	W	HEAD-CSSG	HEAD	CLAY, SILT, SAND AND GRAVEL
5	285.0	SW	SUPNM-UNKN	SUPERFICIAL THEME NOT MAPPED [FOR DIGITAL MAP USE ONLY]	UNKNOWN/UNCLASSIFIED ENTRY
6	398.0	SW	ALV-CSSG	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
7	435.0	SW	HEAD-CSSG	HEAD	CLAY, SILT, SAND AND GRAVEL

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	Intergranular	Very High	High
11.0	N	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.

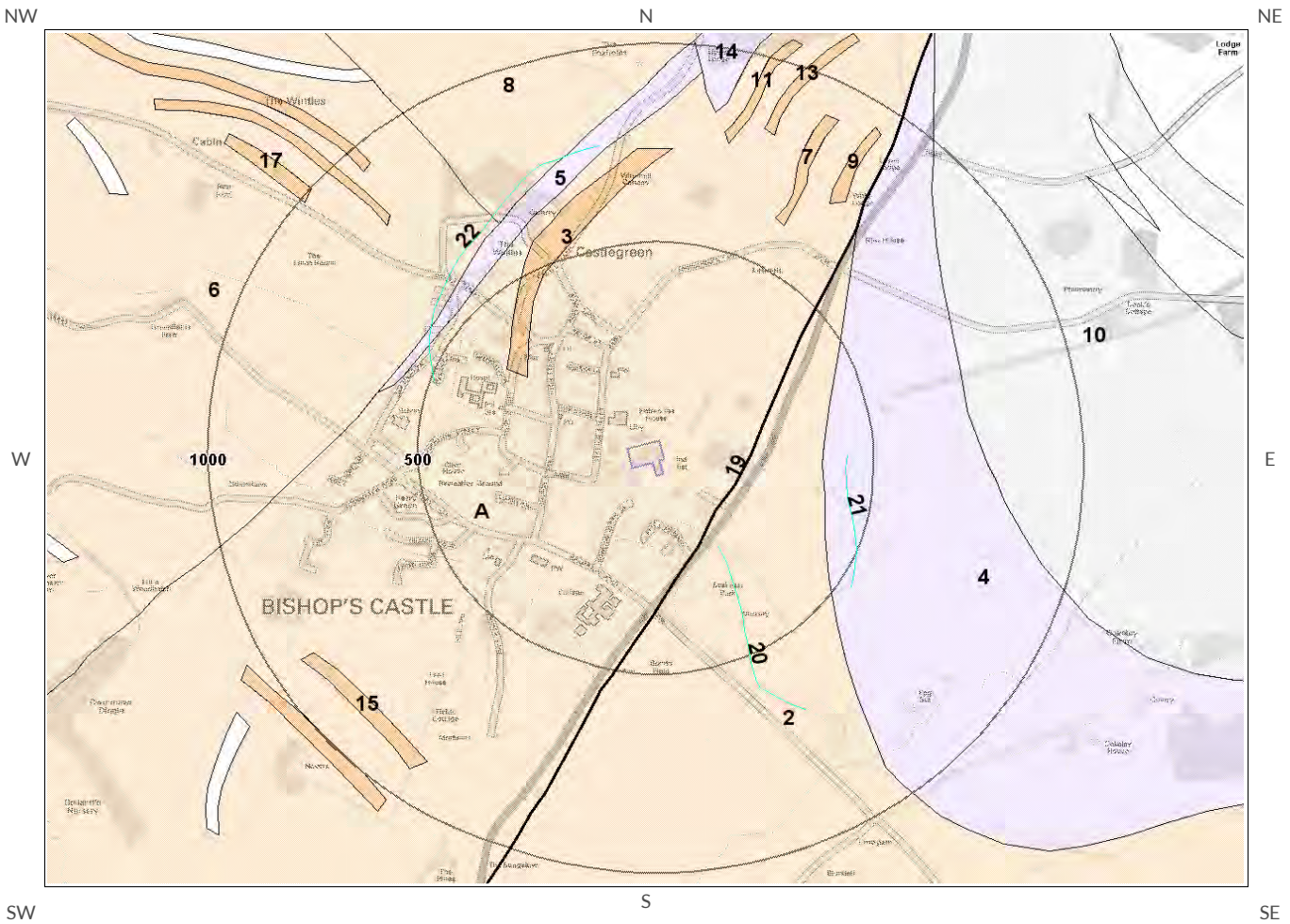
1.2.4 Landslip Permeability

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

Mapping sourced from Ordnance Survey

Site Outline

500
1000
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:165

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
1A	0.0	On Site	BAI-SDSL	Bailey Hill Formation - Sandstone And Siltstone, Interbedded	Ludfordian / Gorstian
2	155.0	SE	BAI-SDSL	Bailey Hill Formation - Sandstone And Siltstone, Interbedded	Ludfordian / Gorstian
3	299.0	NW	BAI-SDST	Bailey Hill Formation - Sandstone	Ludfordian / Gorstian
4	376.0	E	OAK-SLST	Oakeley Mynd Formation - Siltstone	Gorstian

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	Moderate	Low

1.3.3 Faults

Are there any records of Faults within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	Category Description	Feature Description
19	155.0	SE	FAULT	Fault, inferred, displacement unknown
20	225.0	SE	LANDFORM	Glacial meltwater channel centre line, undifferentiated
21	433.0	E	LANDFORM	Glacial meltwater channel centre line, undifferentiated
22	493.0	W	LANDFORM	Glacial meltwater channel centre line, undifferentiated

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 in a Radon Affected Area, as between 10 and 30% of properties are above the Action Level

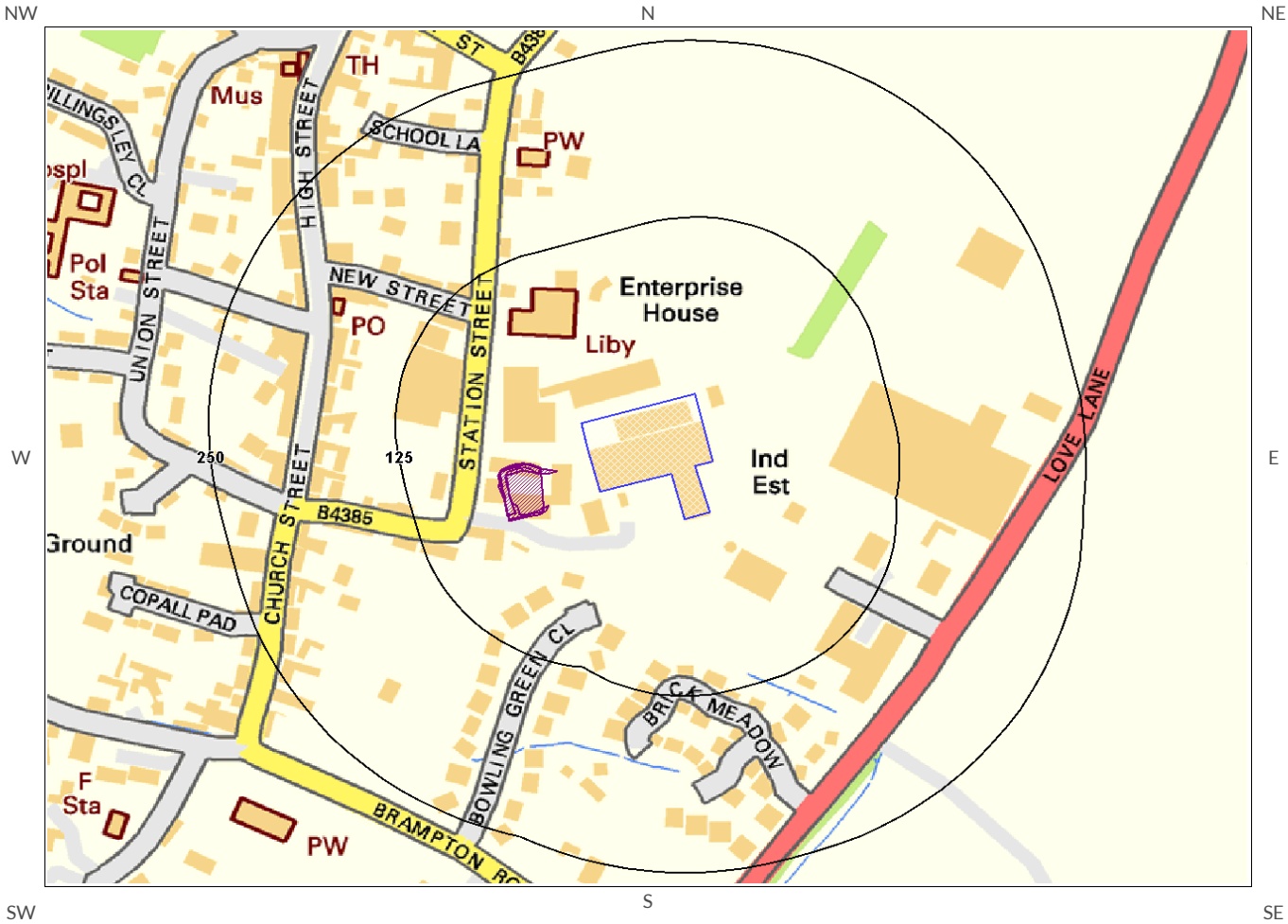
---

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? Full radon protective measures are necessary

---

2 Ground Workings Map



Ground Workings Legend

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

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	24.0	W	332477 288654	Unspecified Quarry	1883
2A	34.0	W	332476 288656	Unspecified Ground Workings	1903
3A	34.0	W	332486 288654	Unspecified Pit	1949

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	576.0	N	332380 289260	Sandstone	Castle Green	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

Mapping sourced from Ordnance Survey

Site Outline

250
500
Search Buffers (m)

Historical Mining

Non-Coal Mining Cavities

Natural Cavities

Non-Coal Mining

Highly likely

Likely

Unlikely

Highly unlikely

Rare

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? No

Database searched and no data found.

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? Yes

The following information provided by JPB is not represented on mapping: Whilst outside of an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk.

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? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Berwyn Hills	Vein Mineral	Rare and localised small scale mining may have occurred.
2	151.0	SE	Not available	Vein Mineral	Rare and localised small scale mining may have occurred.

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

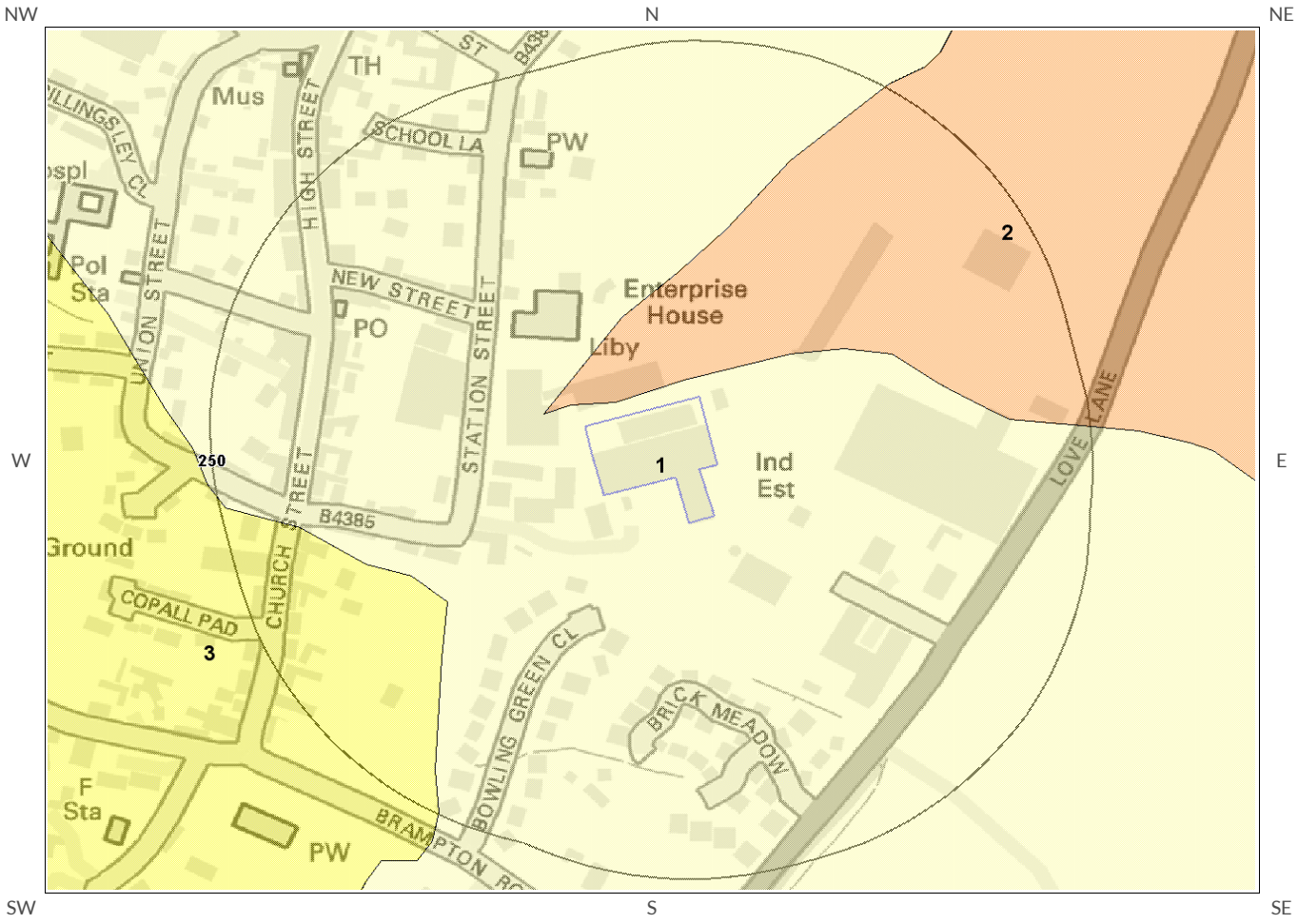
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

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

Mapping sourced from Ordnance Survey®

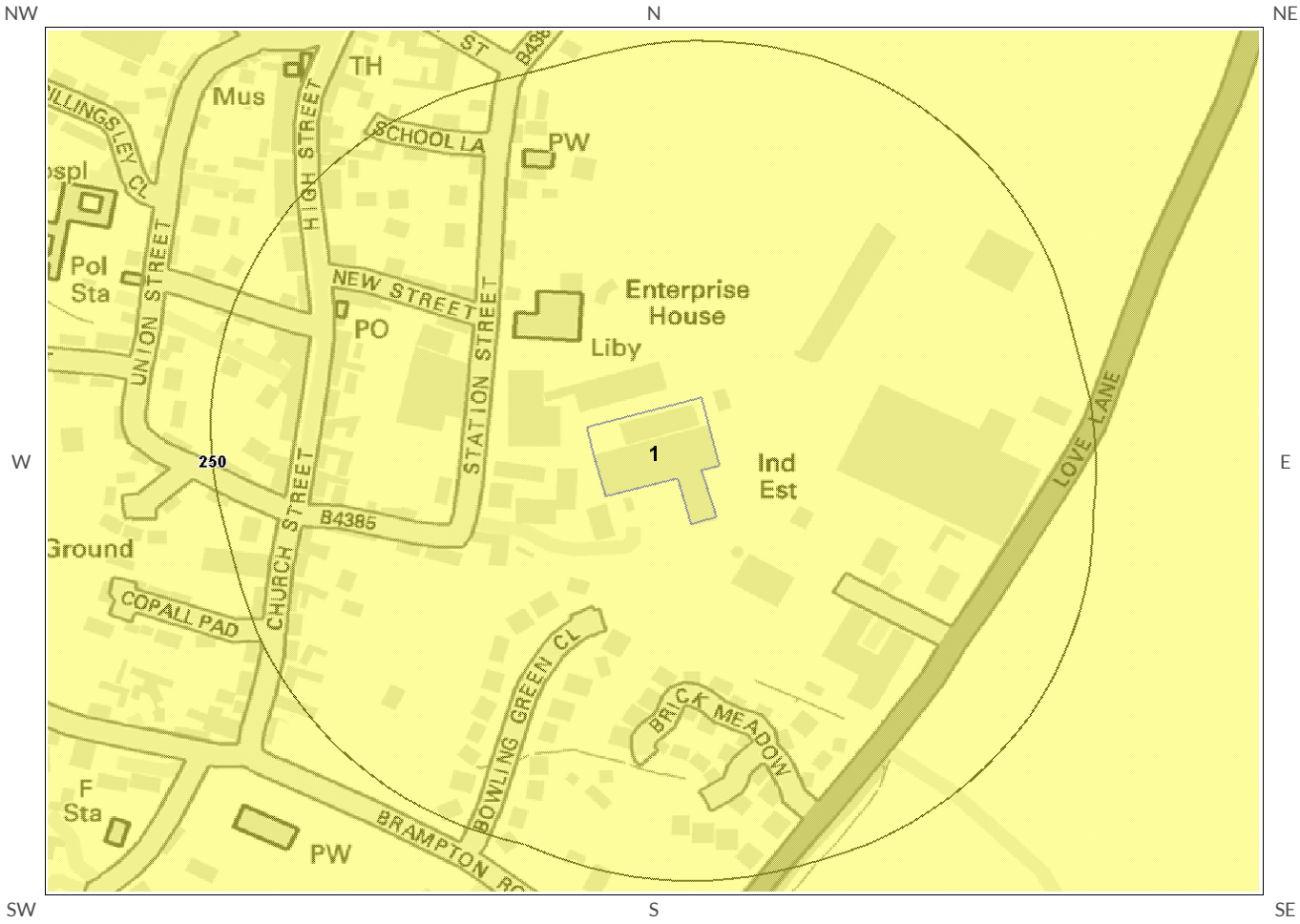
Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

4.2 Landslides Map



Landslides Legend

Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

4.3 Ground Dissolution Soluble Rocks Map

Ground Dissolution Soluble Rocks Legend

Mapping sourced from Ordnance Survey

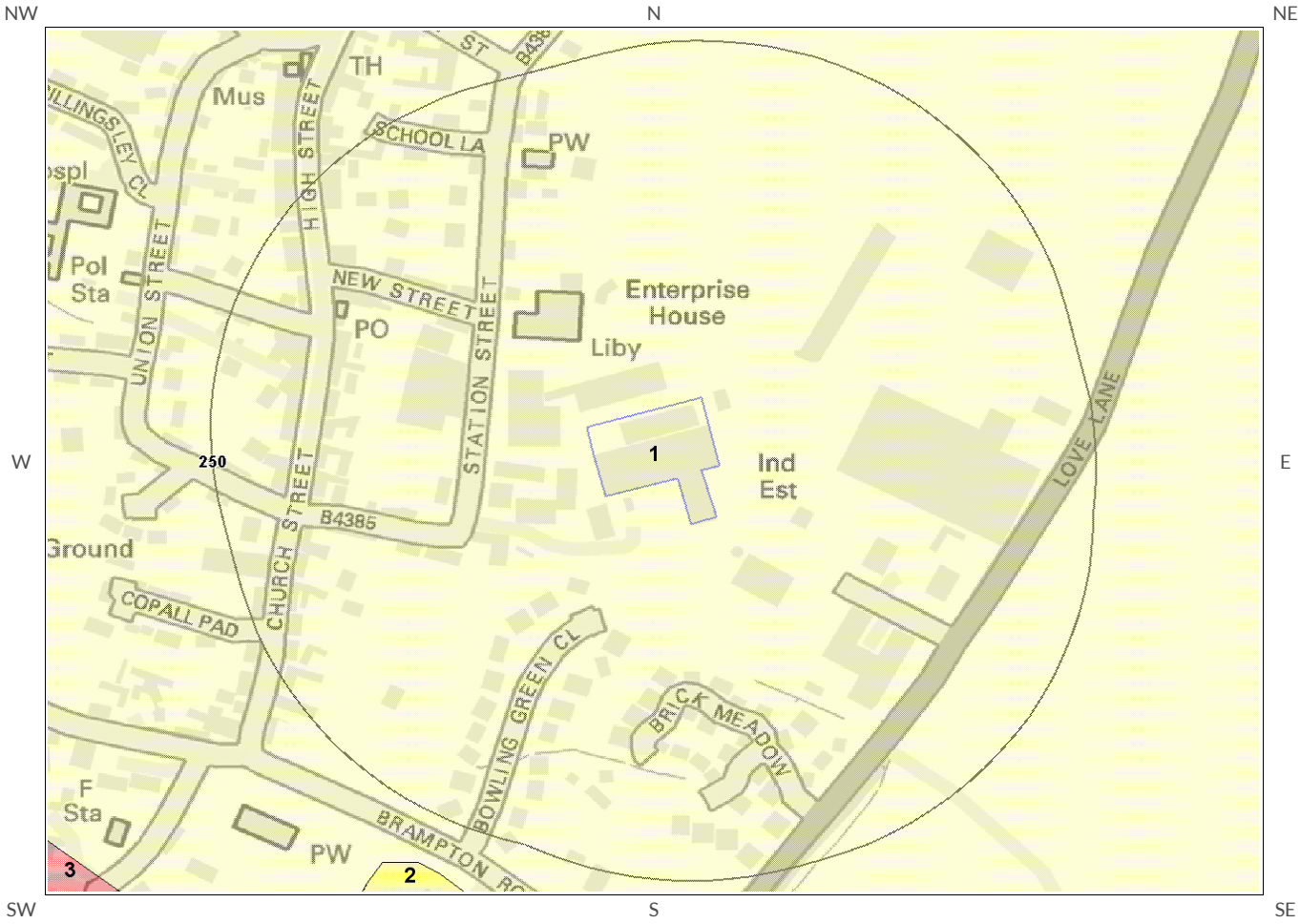
Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

4.4 Compressible Deposits Map



Compressible Deposits Legend

Mapping sourced from Ordnance Survey

Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

4.5 Collapsible Deposits Map

Collapsible Deposits Legend

Mapping sourced from Ordnance Survey

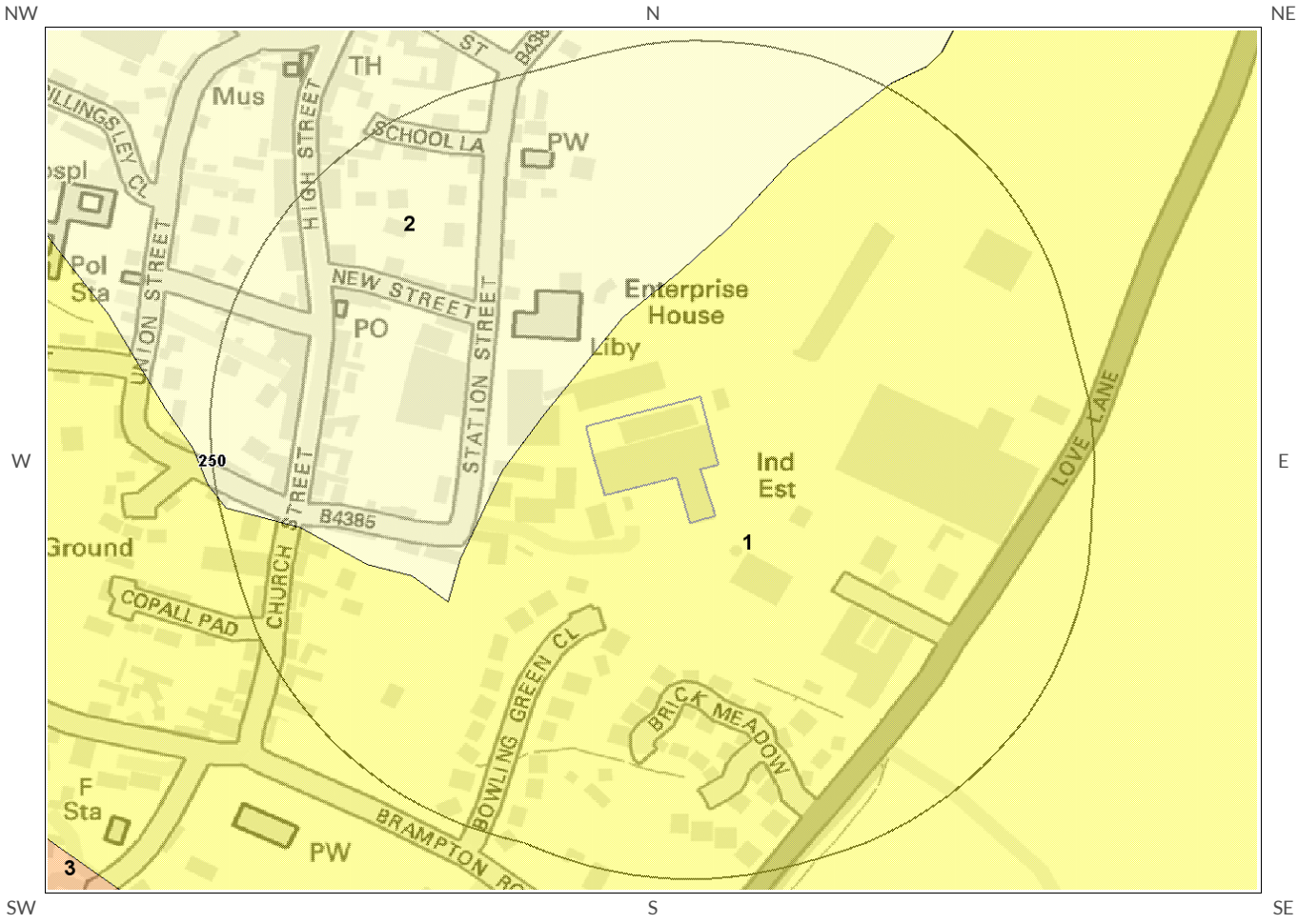
Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

4.6 Running Sand Map



Running Sand Legend

Mapping sourced from Ordnance Survey

Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

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? 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	Negligible	Ground conditions predominantly non-plastic. 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 likely due to potential problems with shrink-swell clays.
2	11.0	N	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

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:

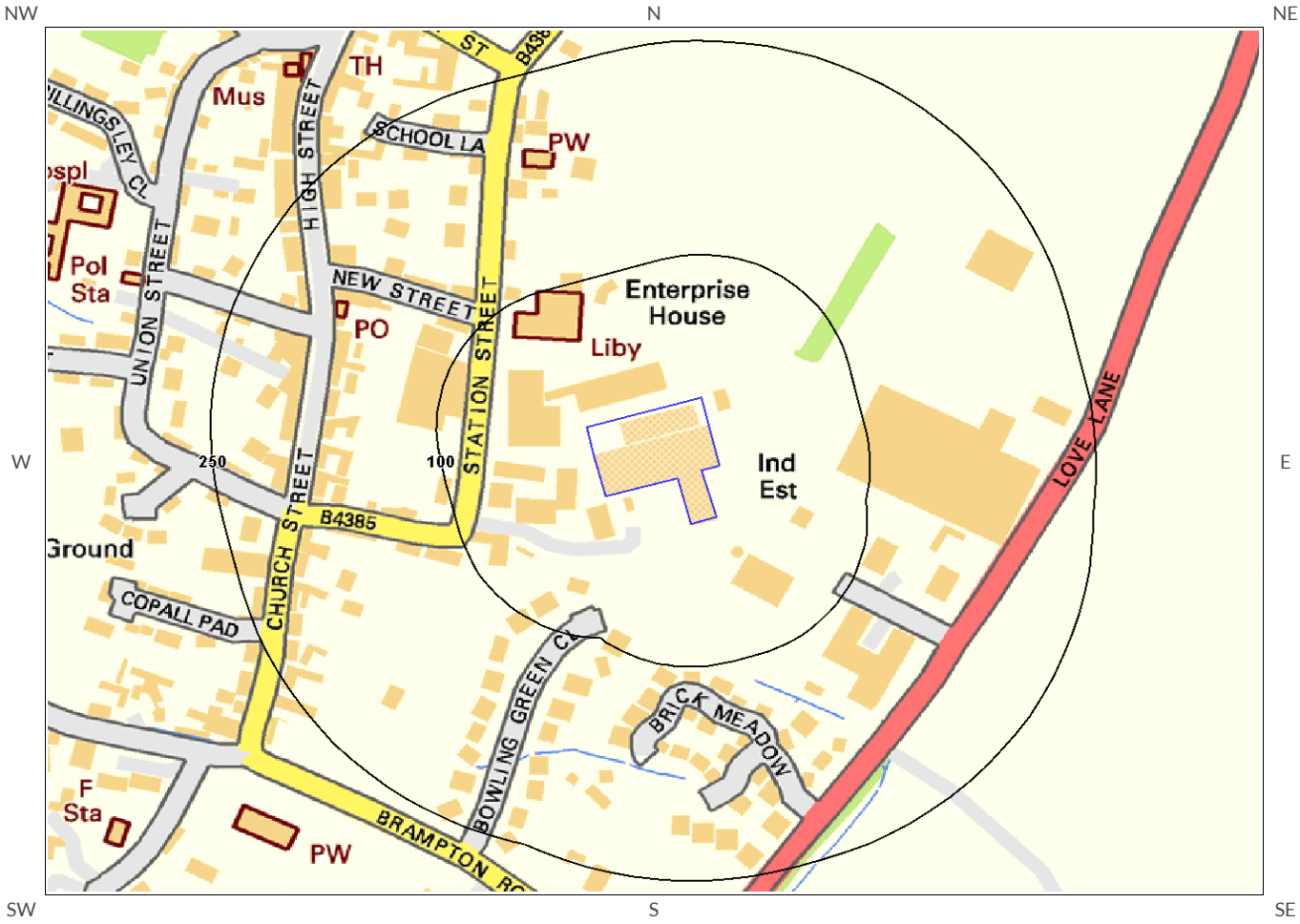
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible 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.
2	28.0	NW	Negligible	No indicators for running sand identified. 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

Mapping sourced from Ordnance Survey

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

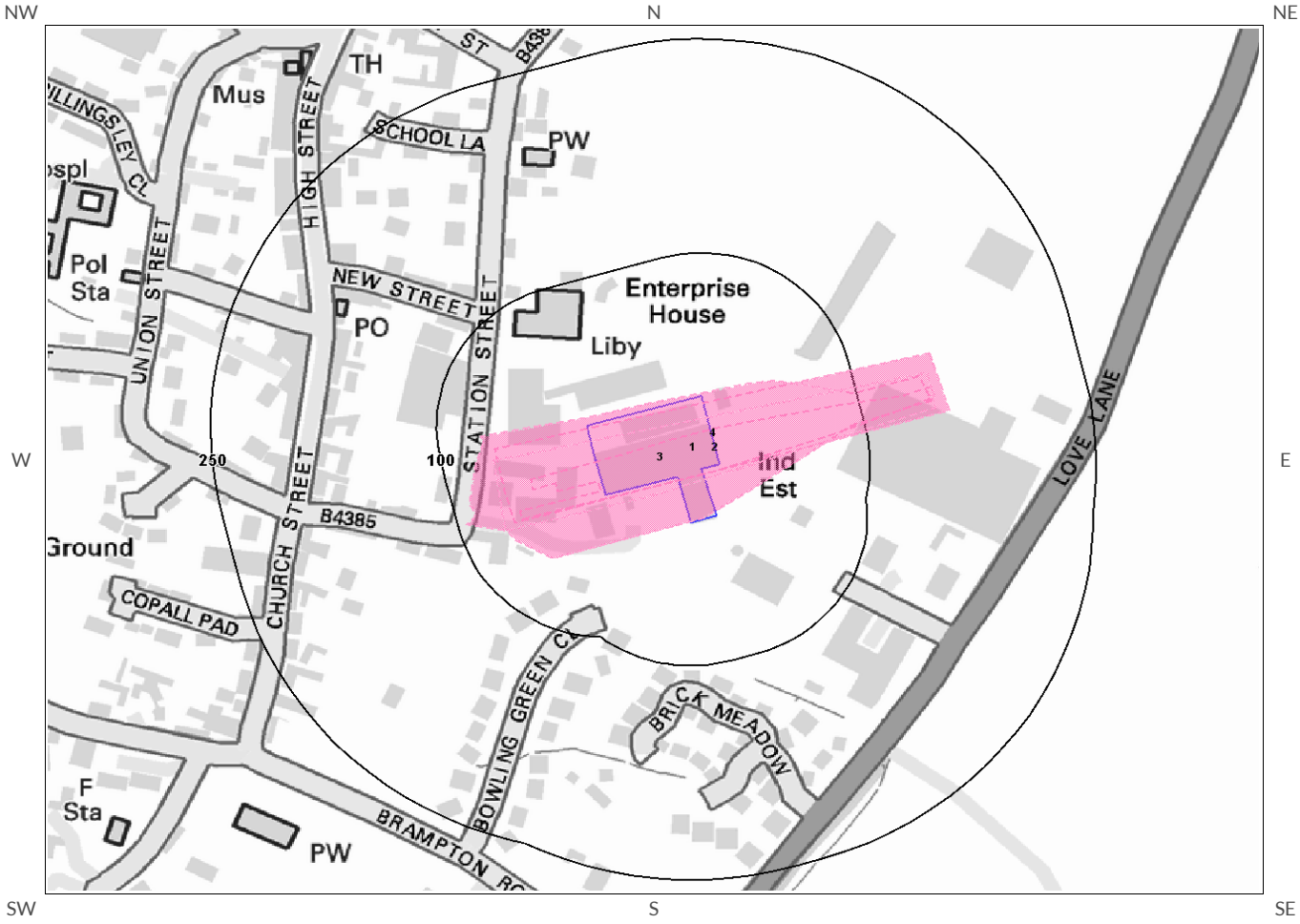
Records of background estimated soil chemistry within 250m of the study site boundary: 13

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

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
11.0	N	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
28.0	NW	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
28.0	W	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
29.0	W	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
128.0	SW	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
135.0	S	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
155.0	SE	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
160.0	S	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
174.0	SE	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
190.0	SW	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
217.0	E	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
247.0	W	Sediment	<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

Mapping sourced from Ordnance Survey

- Site Outline
- Search Buffers (m) — 250 — 500
- Underground or Partially Underground Railway / Subway System
- Railway Tunnel (OS Mapping)
- Abandoned or Dismantled Railway (OpenStreetMap)
- Railway Track (OS Mapping)
- Railway Track (OpenStreetMap)
- High Speed 2
- Crossrail
- Railway and/or Tunnel Feature from Historical Mapping

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? Yes

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	0	On Site	332612 288685	Railway Sidings	1883
2	0	On Site	332621 288684	Railway Sidings	1903
3	0	On Site	332471 288669	Railway Sidings	1903
4	0	On Site	332618 288695	Railway Sidings	1938

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?	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.

7.4 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
info@groundsure.com

British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:**enquiries@bgs.ac.uk**
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries

British Gypsum

British Gypsum Ltd
East Leake
Loughborough
Leicestershire
LE12 6HX

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email: **enquiries@phe.gov.uk**
Main switchboard: 020 7654 8000

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Email:**enquiries.gs@jpb.co.uk**
Website: **www.jpb.co.uk**

Ordnance Survey

Adanac Drive, Southampton
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Tel: 08456 050505
Website: http://www.ordnancesurvey.co.uk/

Getmapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444
Website:**http://www1.getmapping.com/**

Peter Brett Associates

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Berkshire RG1 8DN
Tel: +44 (0)118 950 0761 E-mail:**reading@pba.co.uk**
Website:**http://www.peterbrett.com/home**

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

3.1The 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

4.1The 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

5.1GroundSure 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

Terra Consult

Bold Business Centre, Bold Lane,
Bold Lane,
Sutton, WA9 4TX

GroundSure Reference:	HMD-147-1792169
Your Reference:	Ransfords_Saw_Mill
Report Date	28 Nov 2014
Report Delivery Method:	Email - pdf

GroundSure EnviroInsight

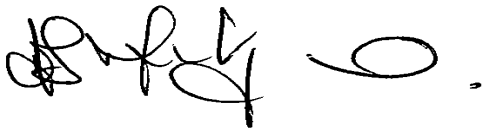
Address: RANSFORD SAWMILLS, STATION STREET, BISHOPS CASTLE, SY9 5AQ

Dear Sir/ Madam,

Thank you for placing your order with GroundSure. Please find enclosed the **GroundSure Enviroinsight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above GroundSure reference number.

Yours faithfully,



Managing Director
Groundsure Limited

Enc.
GroundSure EnviroInsight

GroundSure EnviroInsight

Address:	**RANSFORD SAWMILLS, STATION STREET, BISHOPS CASTLE, SY9 5AQ**
Date:	**28 Nov 2014**
Reference:	**HMD-147-1792169**
Client:	**Terra Consult**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	27-Mar-2012
Grid Reference:	332562,288661
Site Size:	0.45ha

Contents Page

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	1	2
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	2	1
1.1.10 Records of Planning Hazardous Substance Consents and Enforcements	0	0	0	0
1.2 Records of COMAH and NIHHS sites	1	0	0	0
1.3 Environment Agency Recorded Pollution Incidents				
1.3.1 National Incidents Recording System, List 2	0	0	1	2
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	1	0	0
2.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	1	0
2.1.4 GroundSure Local Authority Landfill Sites Data	0	0	0	0	0	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	2	13	Not searched
3.2 Records of Petrol and Fuel Sites	0	0	1	1
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	0	0
5.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
5.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
5.6 Source Protection Zones (within 500m of the study site)	0	0	0	1	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)	1	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	0	6	9	Not searched	Not searched
5.11 Surface water features within 250m of the study site	No	No	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	3
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	1
7.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	1	0
7.11 Records of National Parks	0	0	0	0	0	0
7.12 Records of Nitrate Sensitive Areas	0	0	0	1	0	0
7.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	1

Section 8: Natural Hazards

8.1 What is the maximum risk of natural ground subsidence?	Low
8.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	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 Ordnance Survey

- Site Outline
- Search Buffers (m) — 250 — 500
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- 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:

3

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance	Direction	NGR	Details	
7	88.0	N	332539 288797	Address: Charles Ransford & Sons Ltd, Ransford Sawmills, Station Street, Bishops Castle, Shropshire, SY9 5AQ Process: YGA manf timber & wood products Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
8A	256.0	W	332288 288606	Address: A & J Hemmings Ltd, Church Street, SY9 5AA Process: Petrol Vapour Recovery Process Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
9A	256.0	W	332288 288606	Address: Harry Tuffins Ltd, Church Street, Bishops Castle, Shropshire, SY9 5AA Process: YBB unloading petrol at service stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

---

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	
4	177.0	S	332570 288460	Address: A488 Bishops Castle Storm Overflow, A488 Bishops Castle, Shropshire Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: S/09/21721/O Permit Version: 1	Receiving Water: Trib Of Snakescroft Brook Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: 29/7/1992 Effective Date: 29/7/1992 Revocation Date: -

ID	Distance	Direction	NGR	Details	
5	235.0	S	332600 288400	Address: Blundell Hall Stw, Blundell Hall, Bishops Castle, Shropshire Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company Permit Number: S/09/12814/RG Permit Version: 1	Receiving Water: Underground Strata Status: Pre Nra Legislation Where Issue Date < 01-sep-89 (historic Only) Issue date: - Effective Date: - Revocation Date: 16/3/2004
6	286.0	S	332570 288350	Address: Blundell Hall Stw, Blundell Hall, Bishops Castle, Shropshire Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company Permit Number: S/09/55638/RG Permit Version: 1	Receiving Water: Underground Strata Status: Consents Without Application (wra 91, Sched 10) Issue date: 17/3/2004 Effective Date: 17/3/2004 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: 1

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Environmental Permits, Incidents and Registers Map:

ID	Distance	Direction	Company	Address	Operational Status	Tier
10	0.0	On Site	Charles Ransford & Son Ltd	Charles Ransford And Son Ltd, Station Street, Bishops Castle, Sy9 5aq	Historical COMAH Site	-

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	172.0	SE	332743 288526	Incident Date: 09/07/2003 Incident Identification: 172321 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2	398.0	S	332668 288243	Incident Date: 19/10/2005 Incident Identification: 354477 Pollutant: Contaminated Water Pollutant Description: Chemically Contaminated Run-Off	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Distance	Direction	NGR	Details	
3	401.0	S	332720 288253	Incident Date: 05/03/2003 Incident Identification: 141144 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Fumes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

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

Mapping sourced from Ordnance Survey

- Site Outline
- Search Buffers (m) 250 / 500
- E.A. Active Landfill
- E.A. Historic Landfill
- Local Authority Landfill
- Historic and Planned Waste Sites
- E.A. Licensed Waste Site
- 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:

1

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

ID	Distance (m)	Direction	NGR	Details	
2	497.0	W	331900 288500	Site Address: Kerry Green, Bishops Castle Waste Licence: - Site Reference: - Waste Type: Household, Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -

---

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

1

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

ID	Distance (m)	Direction	NGR	Details	
1	606.0	NW	332000.0 289000.0	Address: King Grove, Bishops Castle, Salop BGS Number: 2374.0	Risk: No risk to aquifer Waste Type: N/A

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

0

Database searched and no data found.

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

Mapping sourced from Ordnance Survey

Site Outline

250
500
Search Buffers (m)

Current Industrial Sites

Petrol & Fuel Sites

Underground High Pressure Oil & Fuel Pipelines

3. Current Land Uses

3.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 15

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	8.0	S	Electricity Sub Station	332560 288652	SY9	Electrical Features	Infrastructure and Facilities
2	46.0	W	A Evans & Son Egg Packing Ltd	332485 288720	Station Street, Bishops Castle, SY9 5AQ	Fish, Meat and Poultry Products	Foodstuffs
3	58.0	E	Love Lane Industrial Estate	332671 288650	SY9	Business Parks and Industrial Estates	Industrial Features
4	79.0	SW	Castle Cars	332470 288618	Station Street, Bishops Castle, SY9 5AQ	Secondhand Vehicles	Motoring
5	98.0	W	Telephone Exchange	332435 288667	SY9	Telecommunications Features	Infrastructure and Facilities
6	101.0	S	Electricity Sub Station	332566 288539	SY9	Electrical Features	Infrastructure and Facilities
7	131.0	E	Electricity Sub Station	332737 288594	SY9	Electrical Features	Infrastructure and Facilities
8	134.0	SE	Metal Malarkey Engineering	332677 288522	Unit 6 Challenge Court, Love Lane Industrial Estate, Bishops Castle, SY9 5DW	Metals Manufacturers, Fabricators and Stockholders	Industrial Products
9	155.0	SE	Jesmonite	332724 288531	Unit 2 Challenge Court, Love Lane Industrial Estate, Bishops Castle, SY9 5DW	Concrete Products	Industrial Products
10	157.0	E	G Bryan Jones Ltd	332764 288593	Love Lane Industrial Estate, Bishops Castle, SY9 5DW	Agricultural Contractors	Contract Services
11	161.0	S	Bullseye	332621 288475	22, Brick Meadow, Bishops Castle, SY9 5DH	Pest and Vermin Control	Contract Services
12	202.0	SW	Owen E C O	332396 288512	Chittol, Church Street, Bishops Castle, SY9 5AA	Livestock Farming	Farming
13	233.0	NW	Electricity Sub Station	332314 288796	SY9	Electrical Features	Infrastructure and Facilities
14A	241.0	W	Spar Bishops Castle	332302 288610	Church Street, Bishops Castle, SY9 5AA	Petrol and Fuel Stations	Road and Rail
15A	241.0	W	Tuffins Bishops Castle Service Station	332302 288610	Church Street, Bishops Castle, Shropshire, SY9 5AA	Petrol and Fuel Stations	Road and Rail

3.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 2

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
16	221.0	W	332323 288609	Texaco	Spar Bishops Castle, Church Street, Church Street, Bishops Castle, Shropshire, SY9 5AA	No	Open
17	343.0	W	332198 288795	Obsolete	Union Street Garage, Union Street, Union Street, Bishops Castle, Shropshire, SY9 5AJ	Not Applicable	Obsolete

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
GFSDD-SAGR	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
HMGDD-DMTN	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON

4.3 Bedrock and Solid Geology

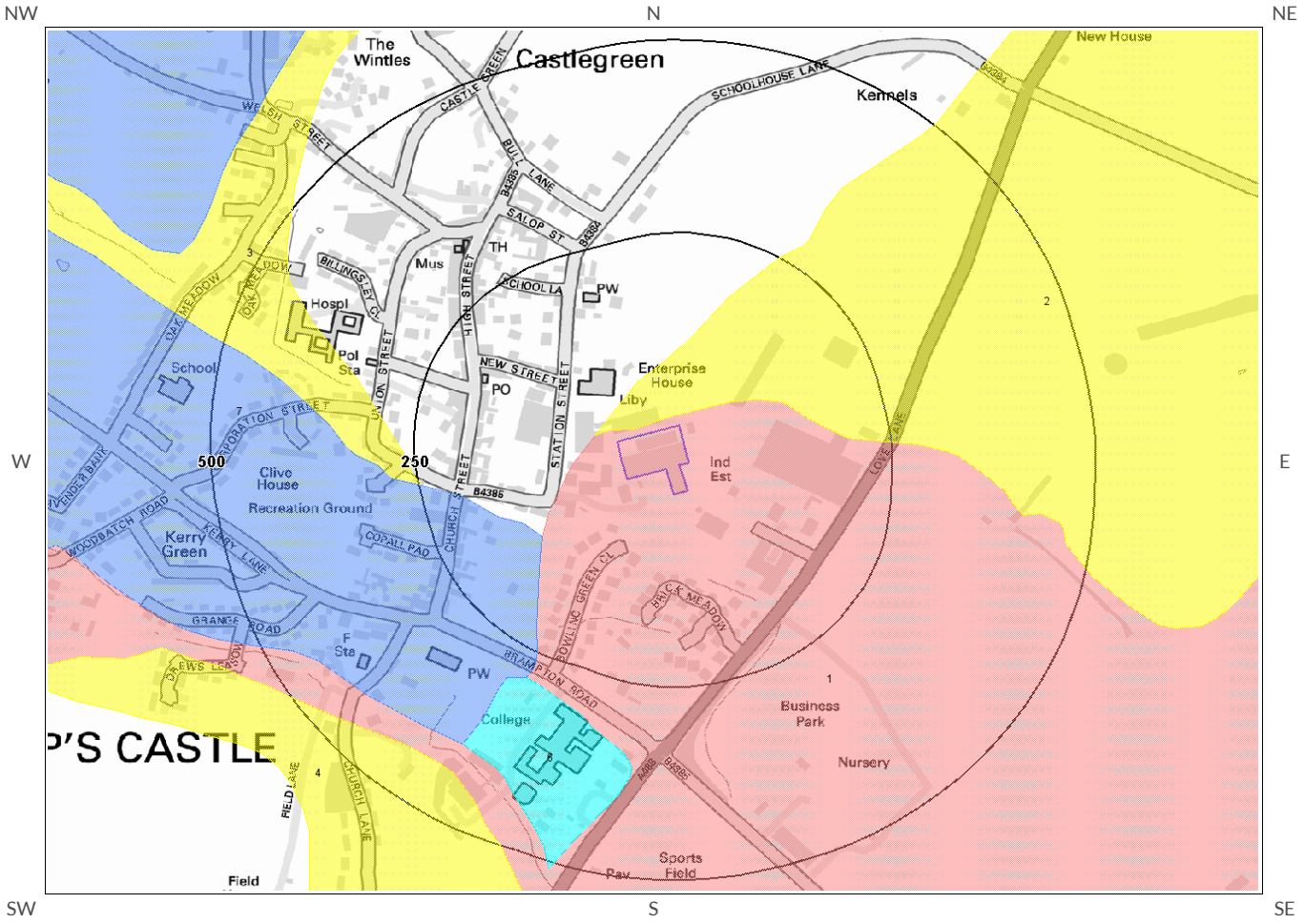
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
BAI-SDSL	BAILEY HILL FORMATION	SANDSTONE AND SILTSTONE, INTERBEDDED

(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

Mapping sourced from Ordnance Survey®

Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

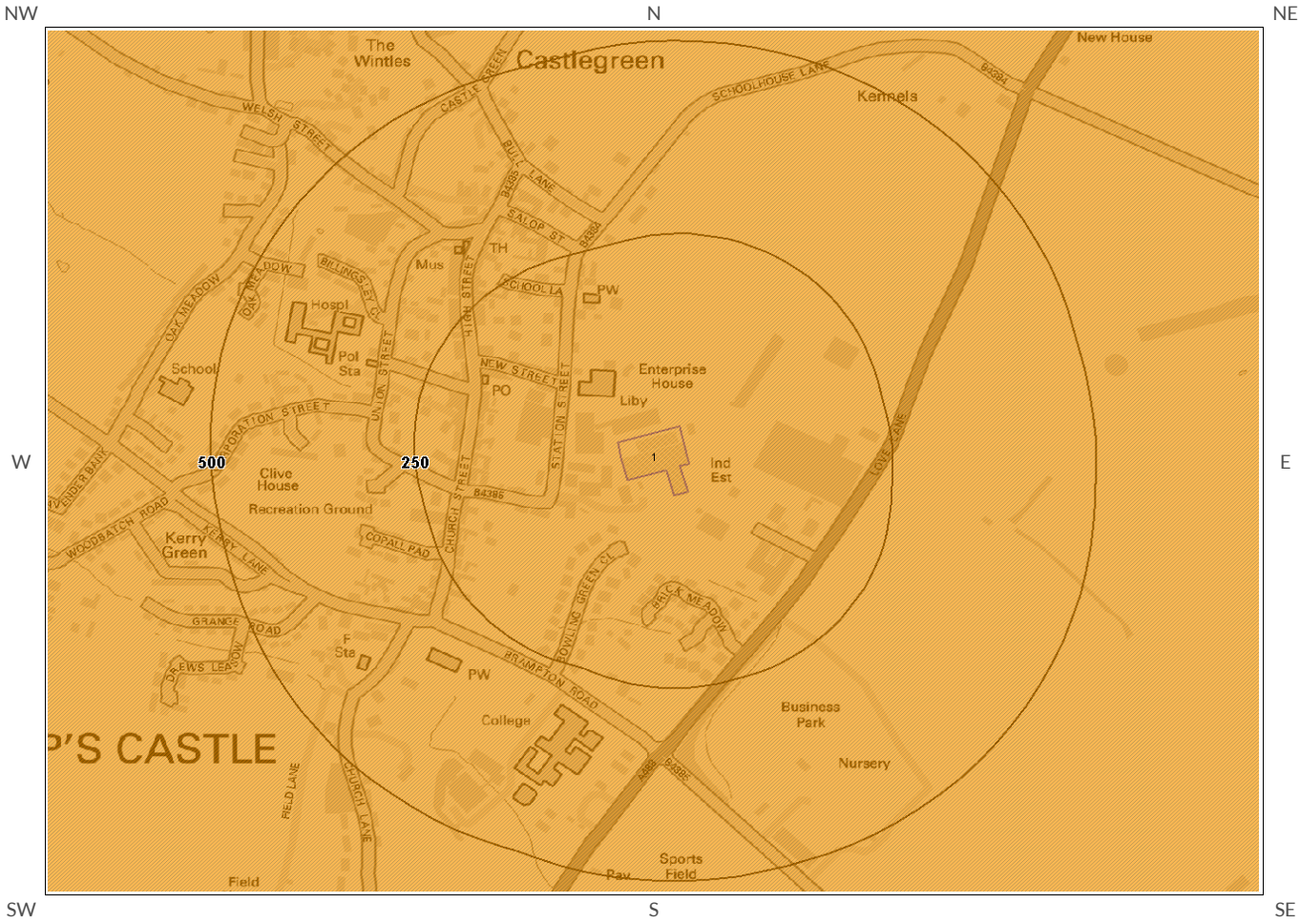
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

5b. Aquifer Within Bedrock Geology and Abstraction Licenses



Aquifer Within Bedrock Geology and Abstraction Licenses

Mapping sourced from Ordnance Survey

Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

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

Map LegendSource Protection Zonesand PotableWater Abstraction Licenses

Mapping sourced from Ordnance Survey®

Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

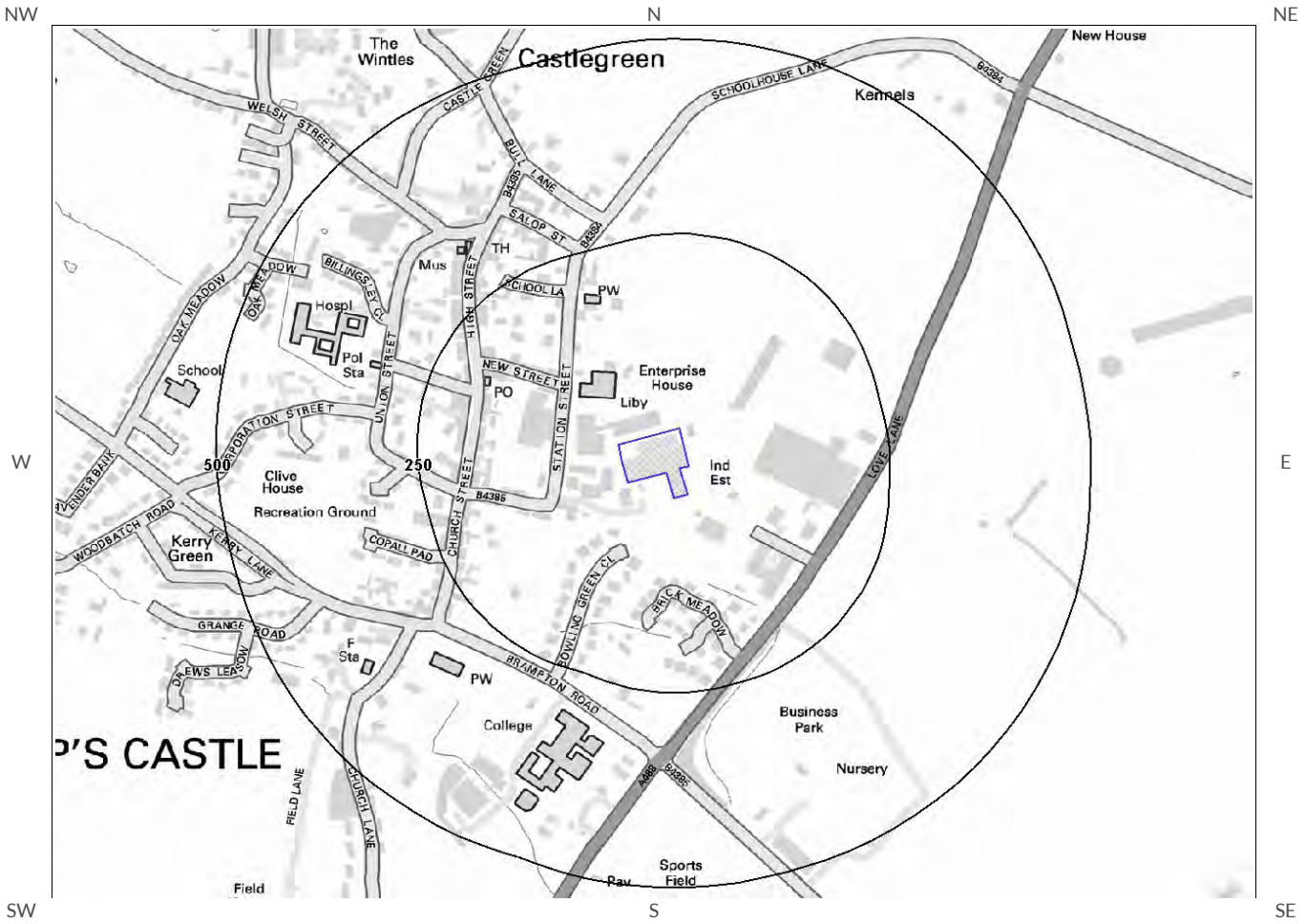
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

5d. Hydrology Source Protection Zones within confined aquifer



Hydrology Source Protection Zones

Mapping sourced from Ordnance Survey

Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1C - Inner Catchment within Confined Aquifer

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

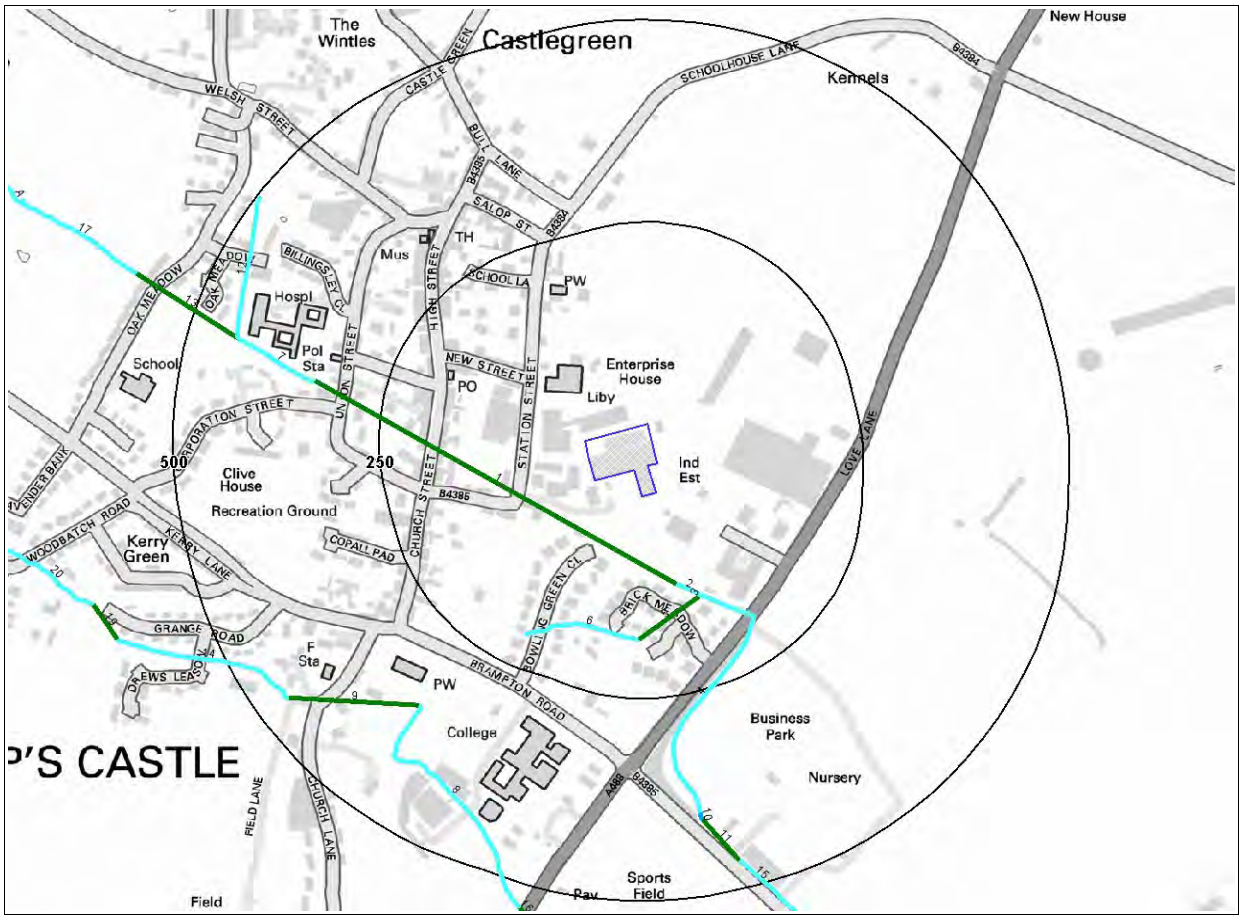
Source Protection Zone 3C - Total Catchment within Confined Aquifer

Potable Water Abstraction Licence

5 e. Hydrology – Detailed River Network and River Quality

NW N NE

W E



SW S SE

Hydrology – Detailed River Network and River Quality

Mapping sourced from Ordnance Survey

Site Outline

Search Buffers (m) 250 500

Primary River
Secondary River
Tertiary River
Lake/Reservoir
Underground River (inferred)
General Quality Assessment: Biology
General Quality Assessment: Chemistry

Canal
Canal Tunnel
Culvert
Multiple Channel Culvert
Underground River (Potential Sewer)
Underground River (local knowledge)

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
1	0.0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	11.0	N	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
7	128.0	SW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
3	247.0	W	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
6	285.0	SW	Unknown	Unknown
4	435.0	SW	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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
1	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 permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

5.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

5.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

5.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

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	378.0	E	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
0	On Site	Minor Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.
82	SE	Minor Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.

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	1448.0	S	332400 287200	River Name: Kemp Reach: Bishops Moat To Snakescroft Bk. End/Start of Stretch: End of Stretch NGR	B	B	B	A	A
Not shown	1448.0	S	332400 287200	River Name: Kemp Reach: Snakescroft Bk. To Acton Bank Bk. End/Start of Stretch: Start of Stretch NGR	B	B	B	B	B

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	957.0	S	332800 287700	River Name: Snakescroft Bk Reach: Fb At The Villa To Bishops Castle Stw End/Start of Stretch: End of Stretch NGR	C	C	C	B	B
Not shown	957.0	S	332800 287700	River Name: Snakescroft Bk Reach: Fb At The Villa To Bishops Castle Stw End/Start of Stretch: Sample Point NGR	C	C	C	B	B
Not shown	1087.0	E	333700 288600	River Name: Snakescroft Bk Reach: Fb At The Villa To Bishops Castle Stw End/Start of Stretch: Start of Stretch NGR	C	C	C	B	B
Not shown	1412.0	S	332000 287350	River Name: Kemp R Reach: Bishops Moat To Snakescroft Bk End/Start of Stretch: Sample Point NGR	A	A	A	A	A
Not shown	1448.0	S	332400 287200	River Name: Kemp R Reach: Snakescroft Bk To Acton Bank Bk End/Start of Stretch: Start of Stretch NGR	B	A	A	A	A
Not shown	1448.0	S	332400 287200	River Name: Kemp R Reach: Bishops Moat To Snakescroft Bk End/Start of Stretch: End of Stretch NGR	A	A	A	A	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	62.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
2	116.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
3	137.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
4	137.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
5	139.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
6	172.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
7	336.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
8	350.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
9	350.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
10	397.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
11	406.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
12	439.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13	439.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
14	458.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15	465.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

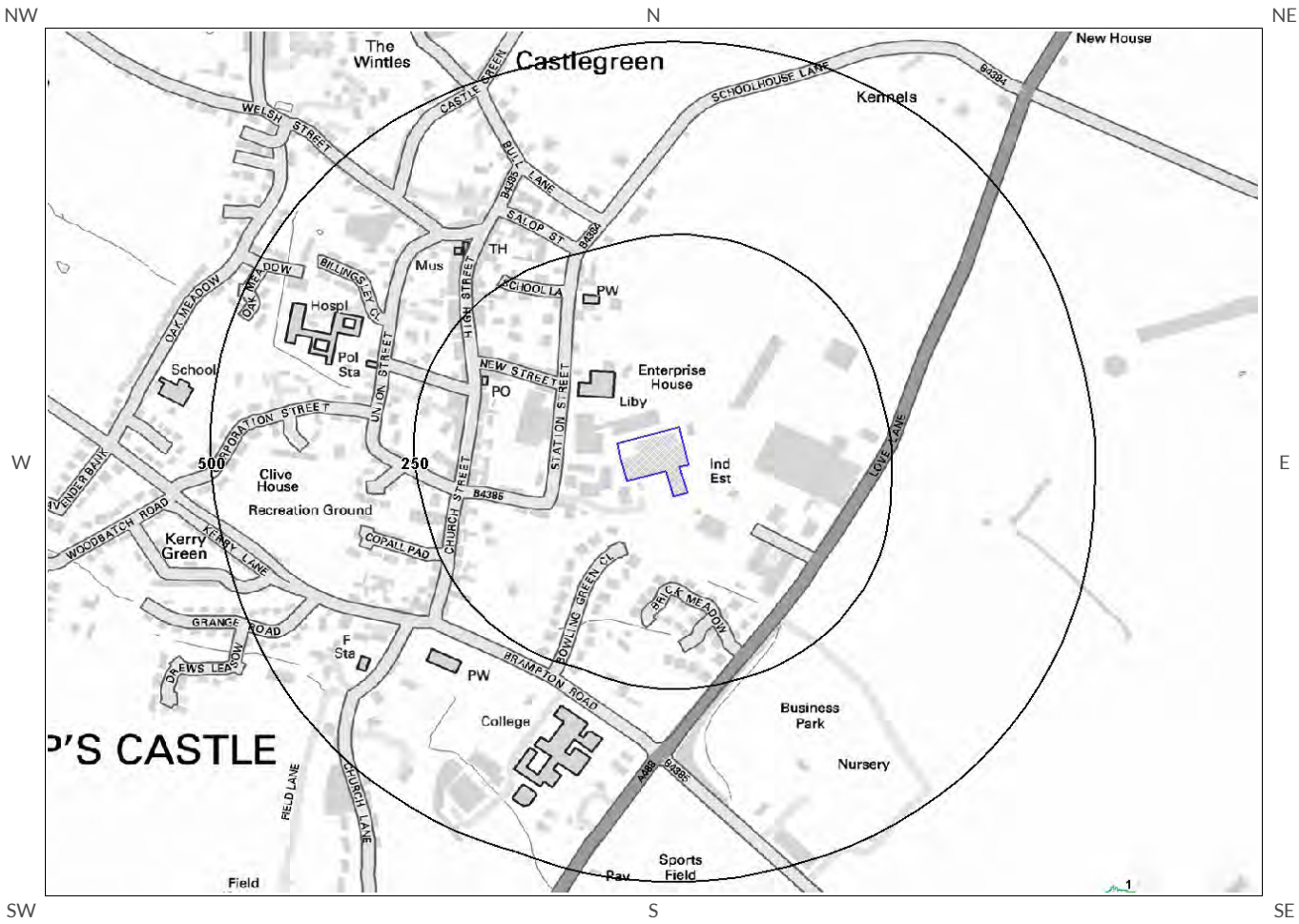
5.11 Surface Water Features

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
116.0	S
137.0	SE
172.0	S
172.0	S
188.0	S
201.0	S
209.0	SE
219.0	SE

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



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

Mapping sourced from Ordnance Survey

Site Outline

250
500
Search Buffers (m)

Zone 2 Floodplain

Zone 3 Floodplain

Flood Storage Area

Area Benefiting from Flood Defences

Flood Defences

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.

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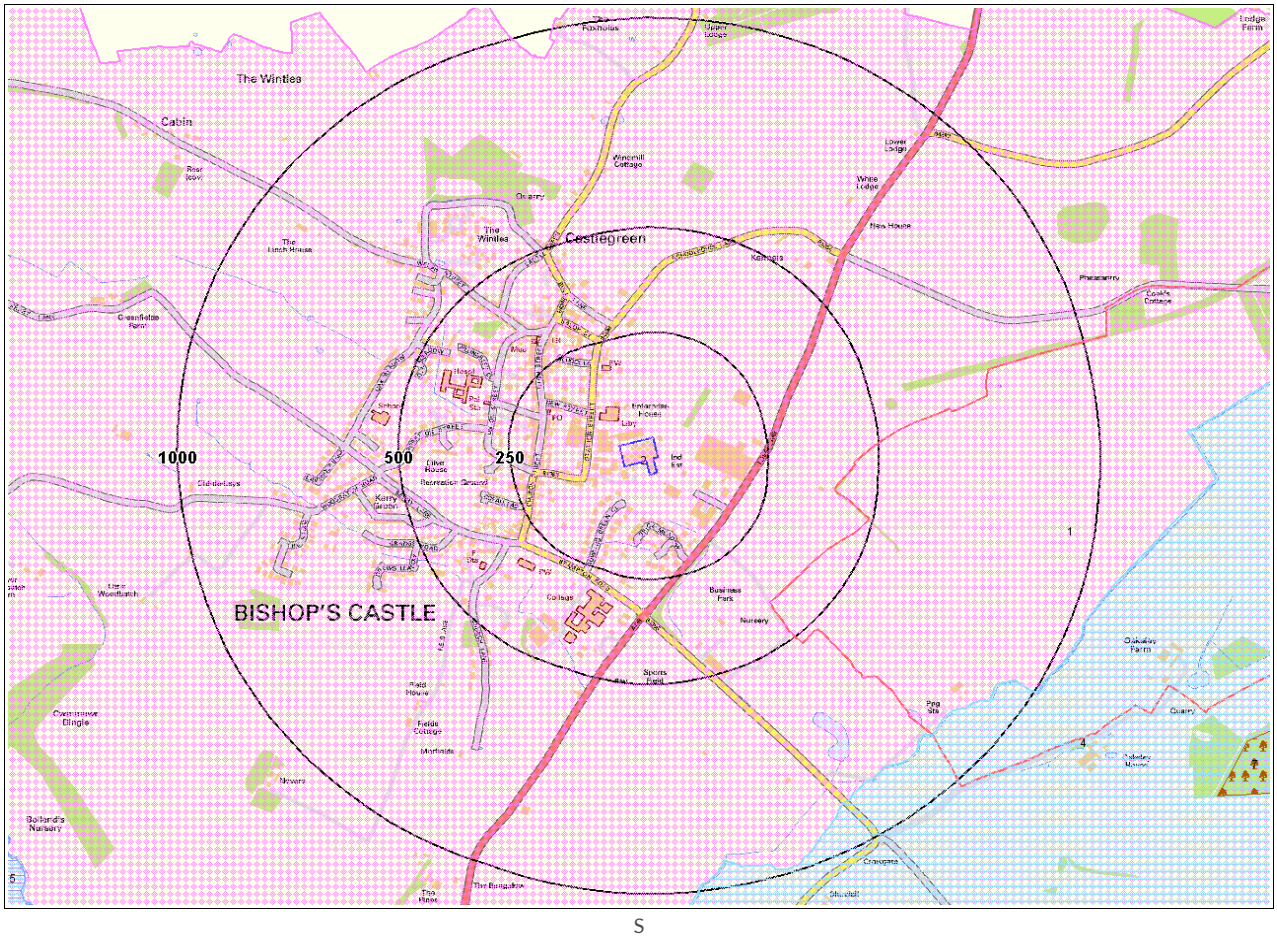
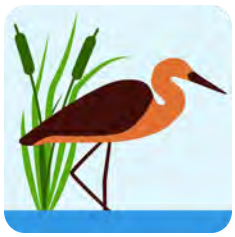
7. Designated Environmentally Sensitive Sites Map



Designated Environmentally Sensitive Sites Map

Mapping sourced from Ordnance Survey®

- Site Outline
- Areas of Outstanding Natural Beauty
- SAC
- SPA
- Nitrate Vulnerable Zones
- SSSI
- Ramsar
- Nitrate Sensitive Areas
- NNR
- LNR
- National Parks
- World Heritage Sites
- Environmentally Sensitive Areas
- Ancient Woodlands



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:

3

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1330.0	NW	SADLERS LITTLE WOOD	Ancient and Semi-Natural Woodland
7	1480.0	SE	OAKELEY WOOD	Ancient Replanted Woodland
Not shown	1628.0	NW	SADLERS BIG WOOD	Ancient Replanted Woodland

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:

1

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

ID	Distance (m)	Direction	ESA Name	Data Source
5	1479.0	SW	Clun	Natural England

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

1

The following Area of Outstanding Natural Beauty (AONB) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	AONB/NSA Name	Data Source
4	867.0	SE	Shropshire Hills	Natural England

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:

1

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

ID	Distance (m)	Direction	NSA Name	Data Source
1	400.0	SE	Oakely Farm	Natural England

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

2

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
2	0.0	On Site	NVZ Area	DEFRA
Not shown	1952.0	NW	NVZ Area	DEFRA

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? Low

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

Hazard
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

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

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email: enquiries@bgs.ac.uk
Web:www.bgs.ac.uk
BGS Geological Hazards Reports and general geological enquiries

Environment Agency

National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 08708 506 506
Web:**www.environment-agency.gov.uk**
Email:**enquiries@environment-agency.gov.uk**

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: Shropshire Council
Phone: 0345 678 9000
Web: http://www.shropshire.gov.uk/
Address: Shirehall, Abbey Foregate, Shrewsbury, Shropshire, SY2 6ND

Gemapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

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

3.1The 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

4.1The 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

5.1GroundSure 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.

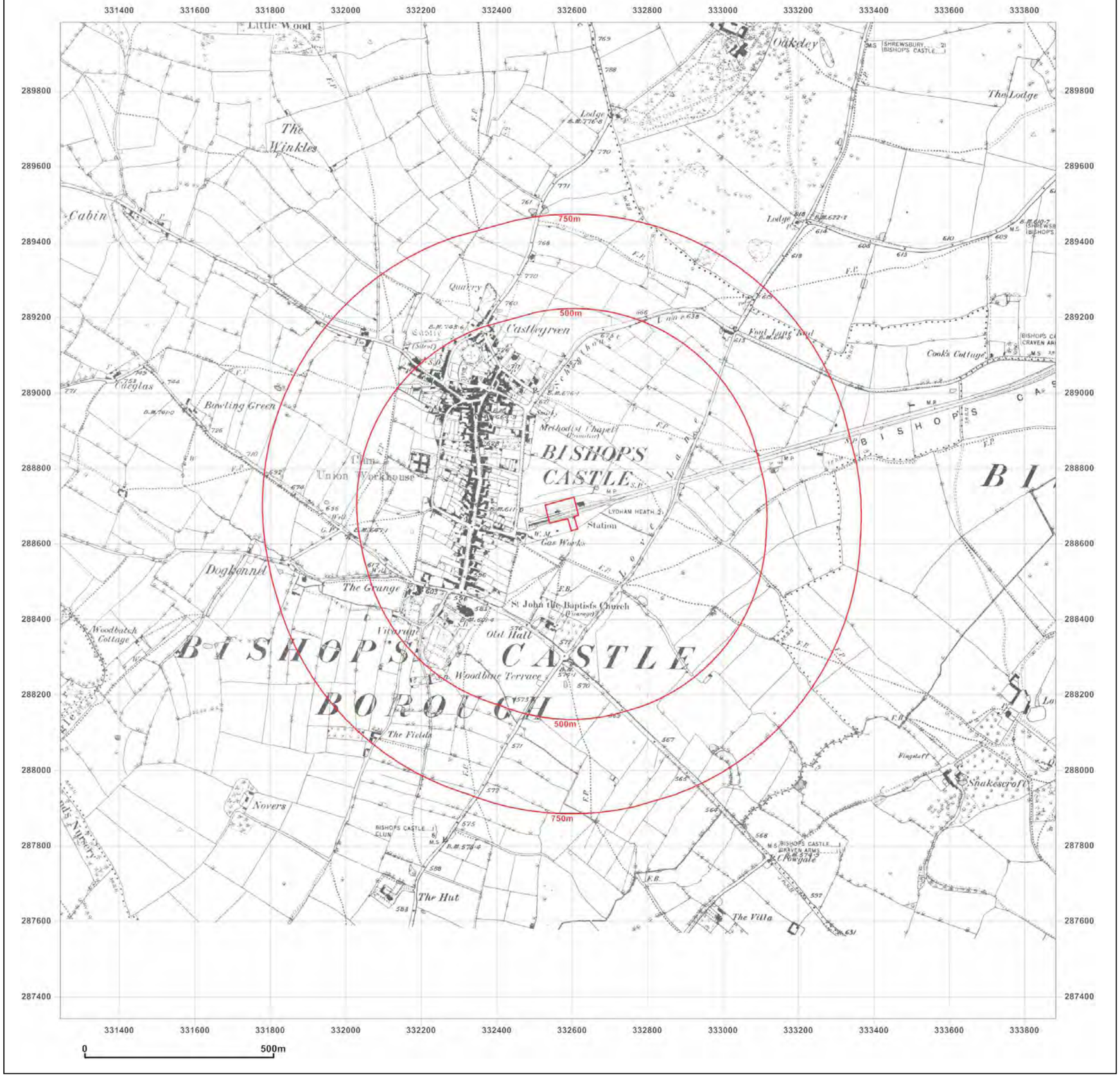
12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

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
ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: County Series

Map date: **1883**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

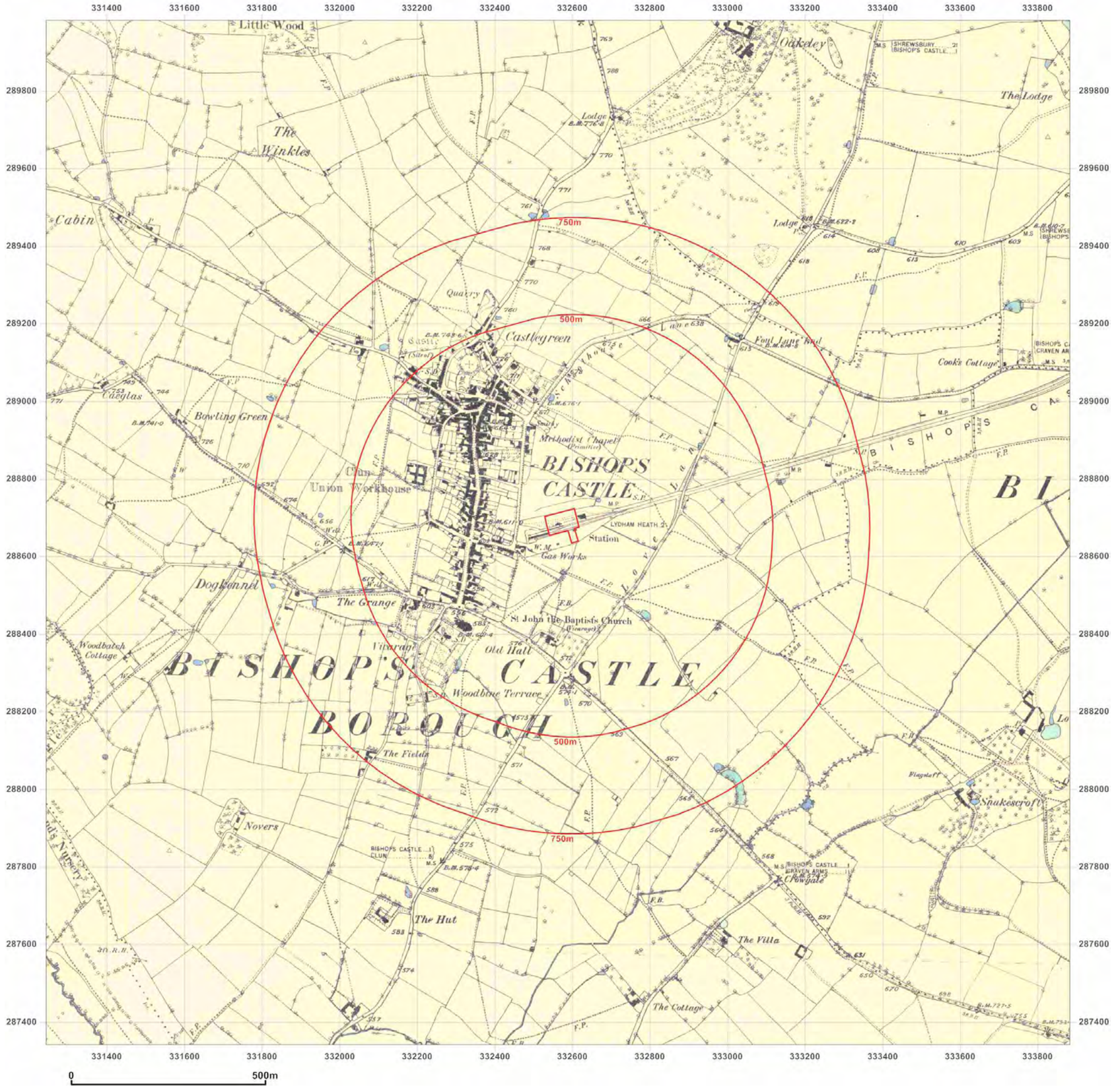
Surveyed 1883
Revised 1883
Edition N/A
Copyright N/A
Levelled N/A

Ordnance Survey
Licensed Partner

Produced by
GroundSure Environmental Insight
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 28 November 2014

To view map legend click here *Legend*



GroundSure
ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: County Series

Map date: **1883**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1883
Revised 1883
Edition N/A
Copyright N/A
Levelled N/A

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~~Revised N/A~~
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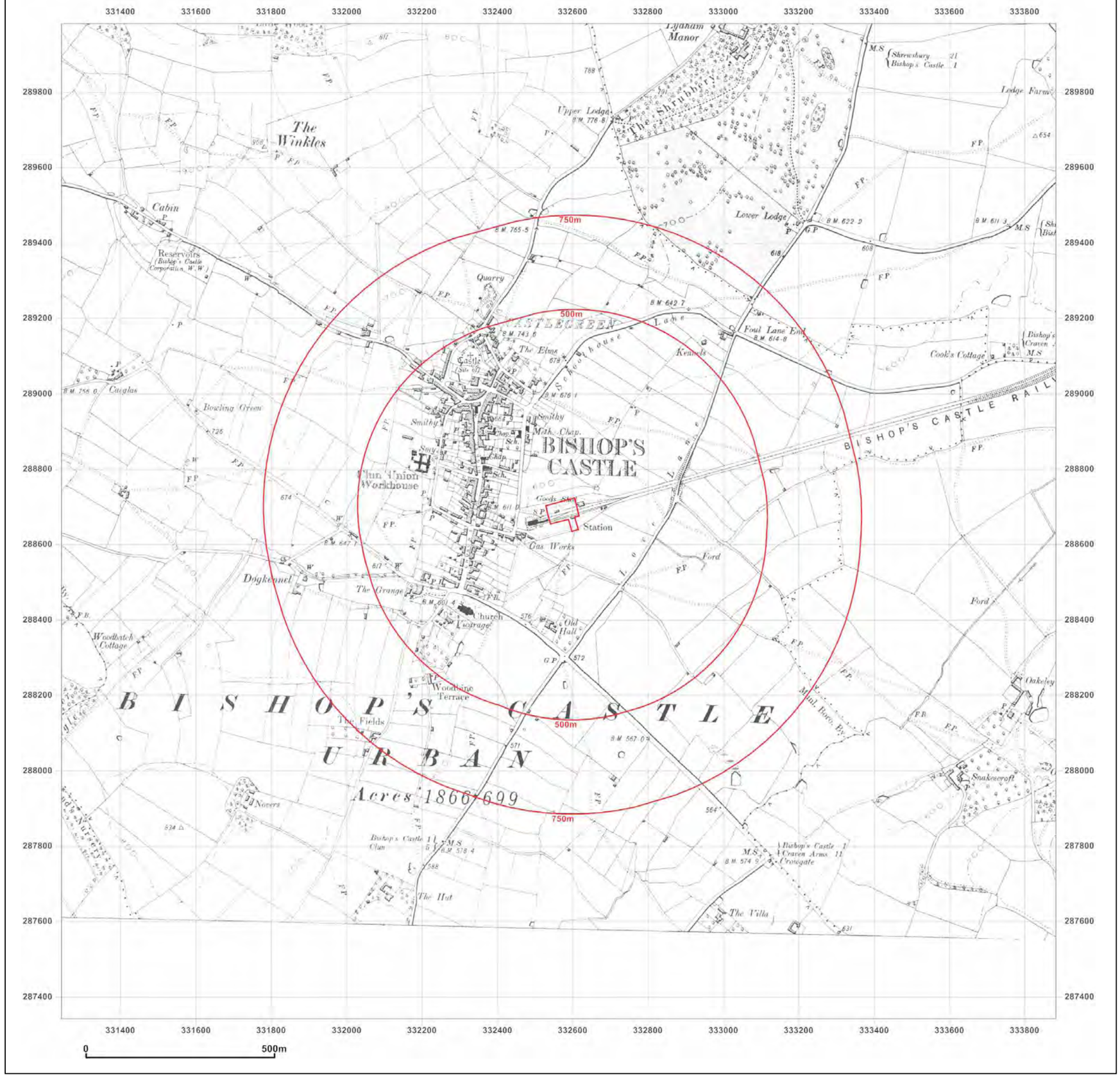

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Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: County Series

Map date: **1903**

Scale: 1:10,560

Printed at: 1:10,560

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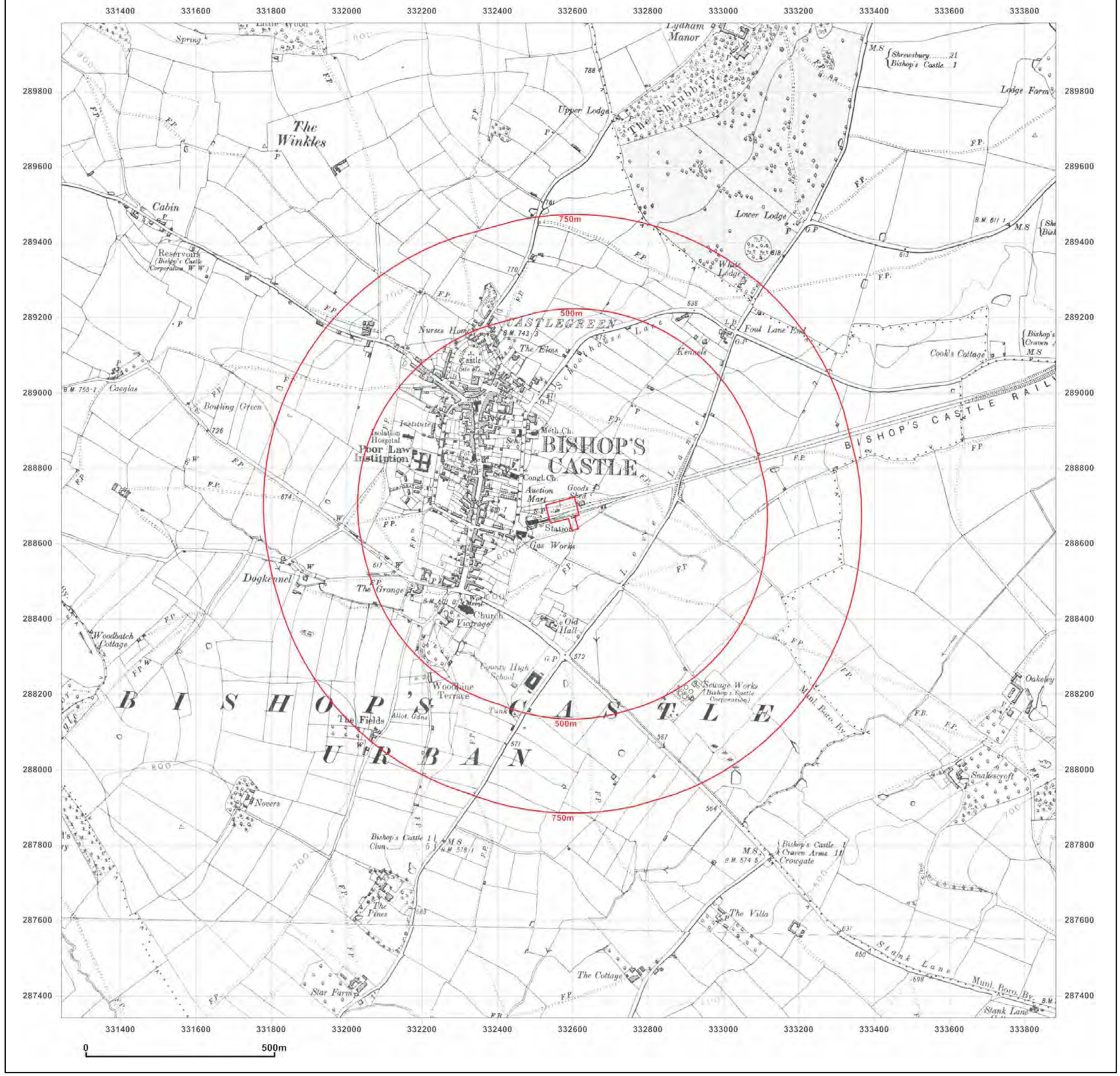

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Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: County Series

Map date: **1924**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1924
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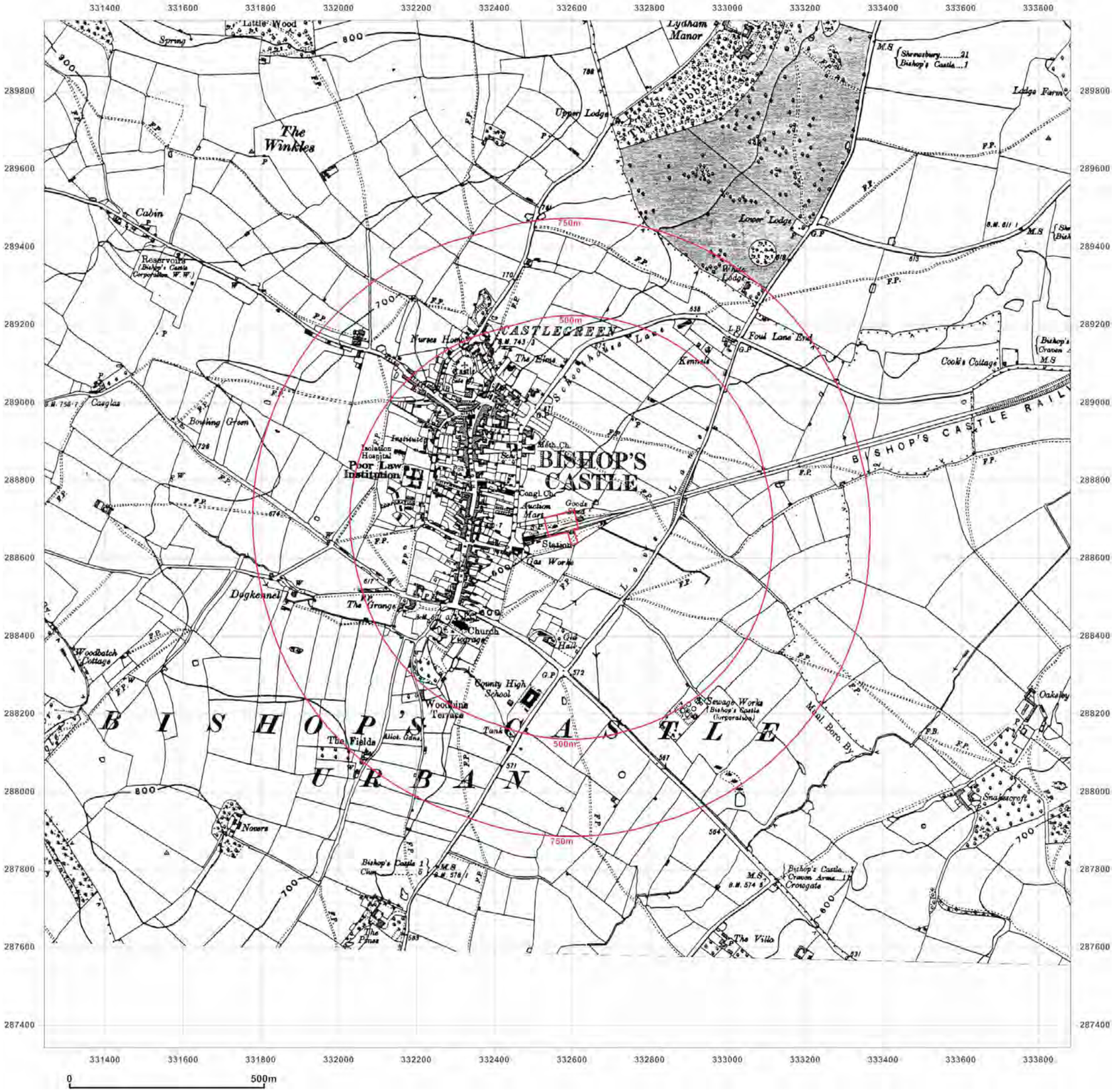

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ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: County Series

Map date: **1928**

Scale: 1:10,560

Printed at: 1:10,560

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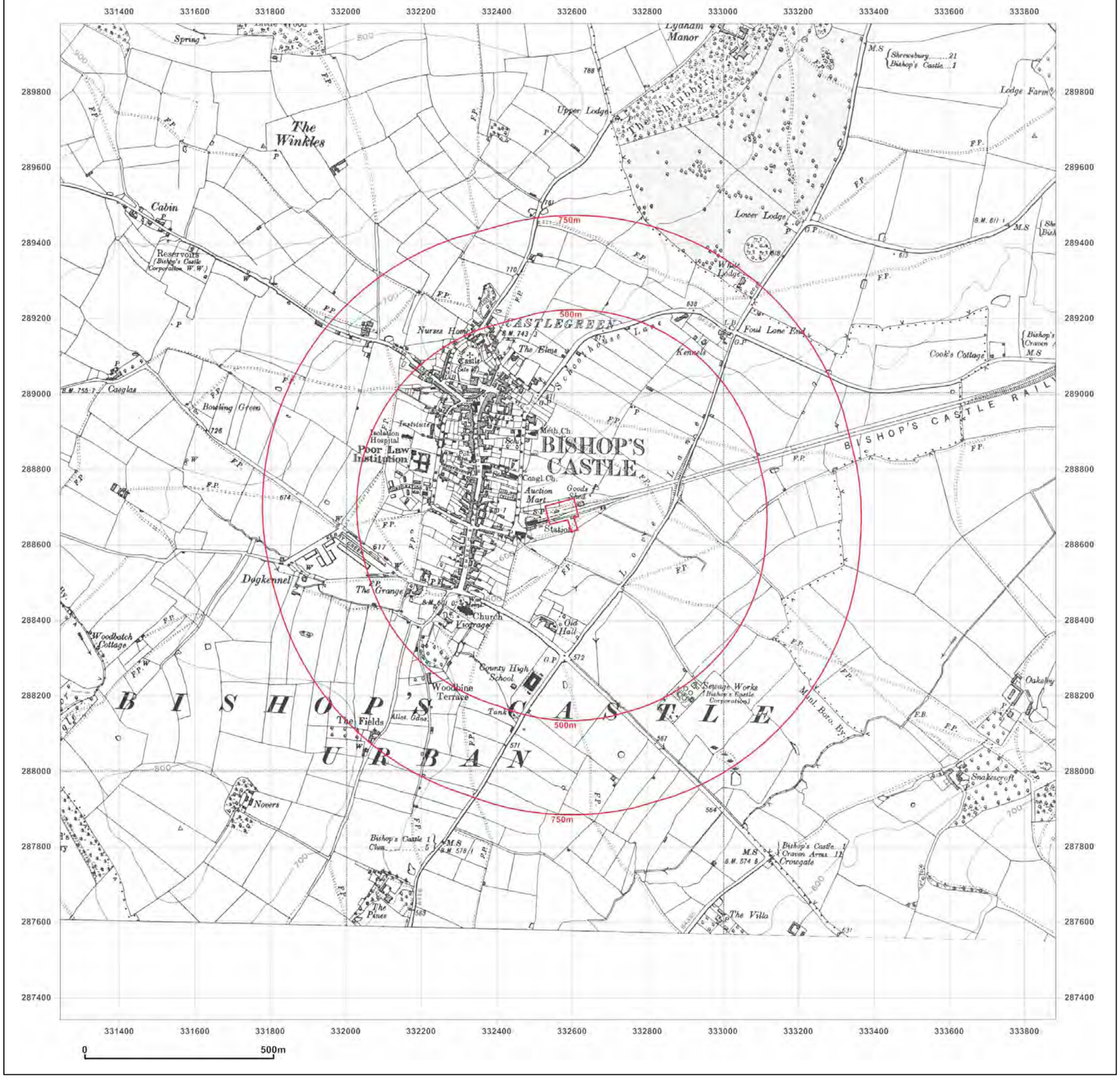

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Site Details:

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STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1938
Edition 1938
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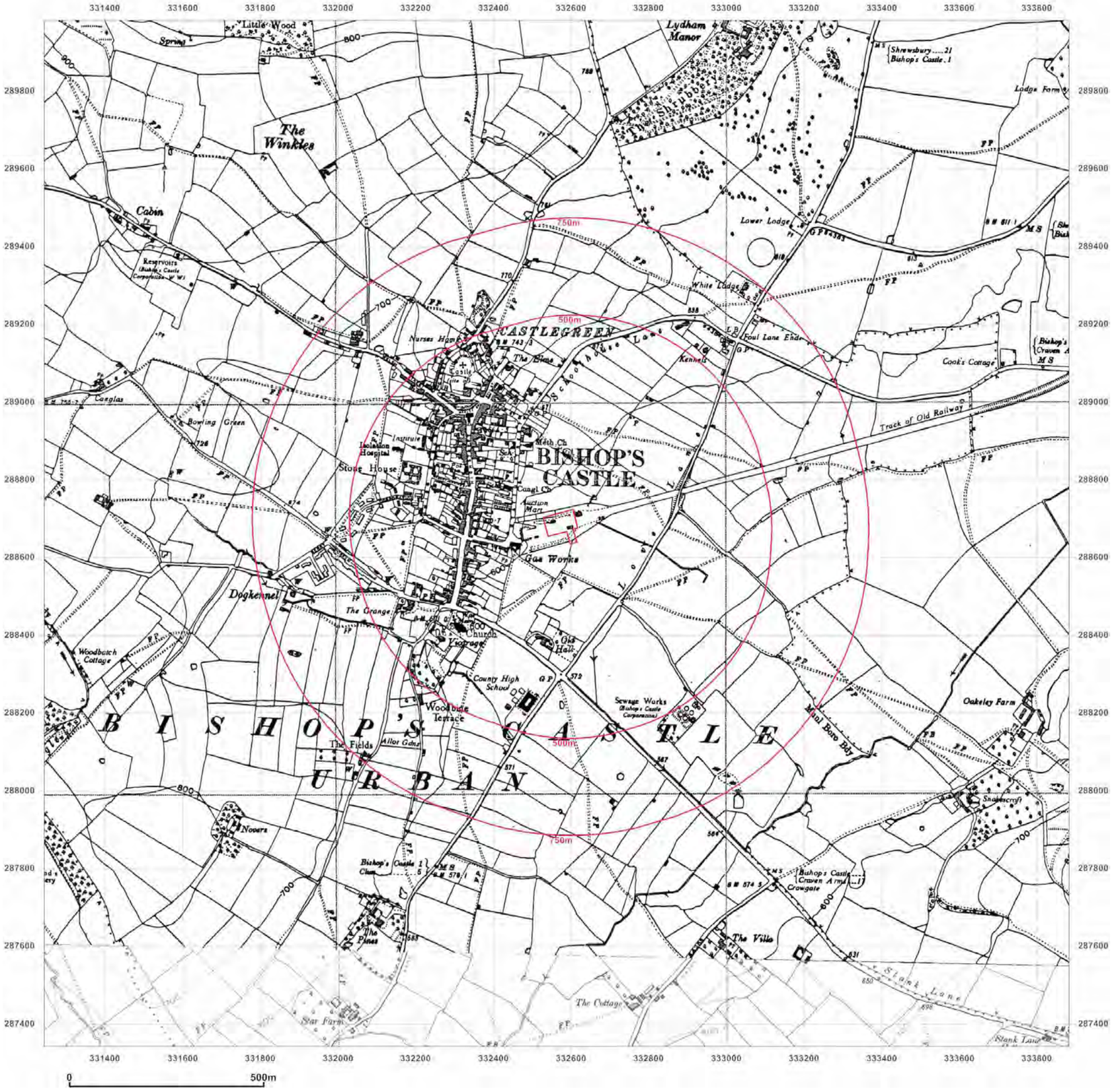

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: County Series

Map date: **1949**

Scale: 1:10,560

Printed at: 1:10,560

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Revised N/A
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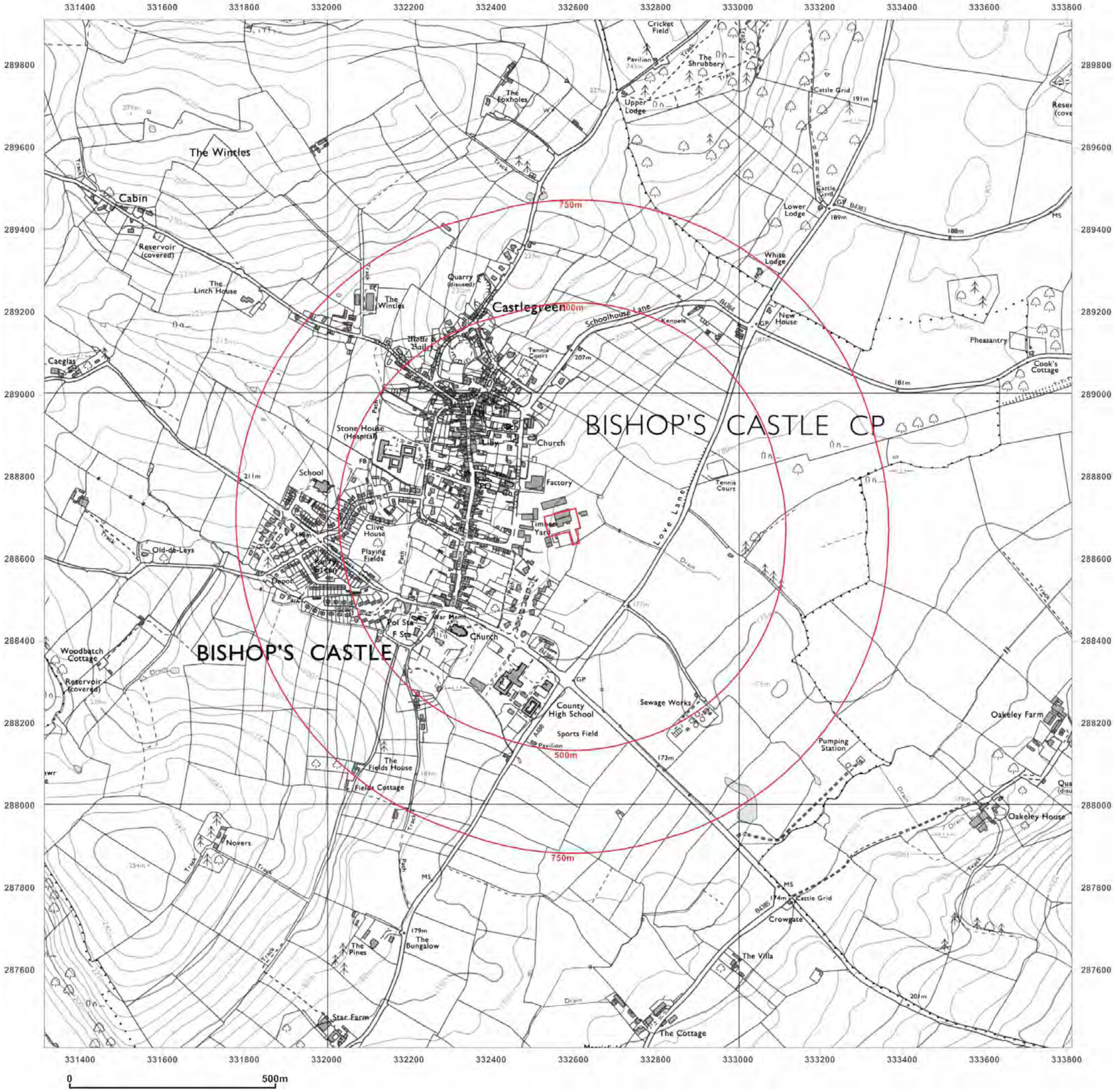

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ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: National Grid

Map date: **1977**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1975
Revised 1977
Edition N/A
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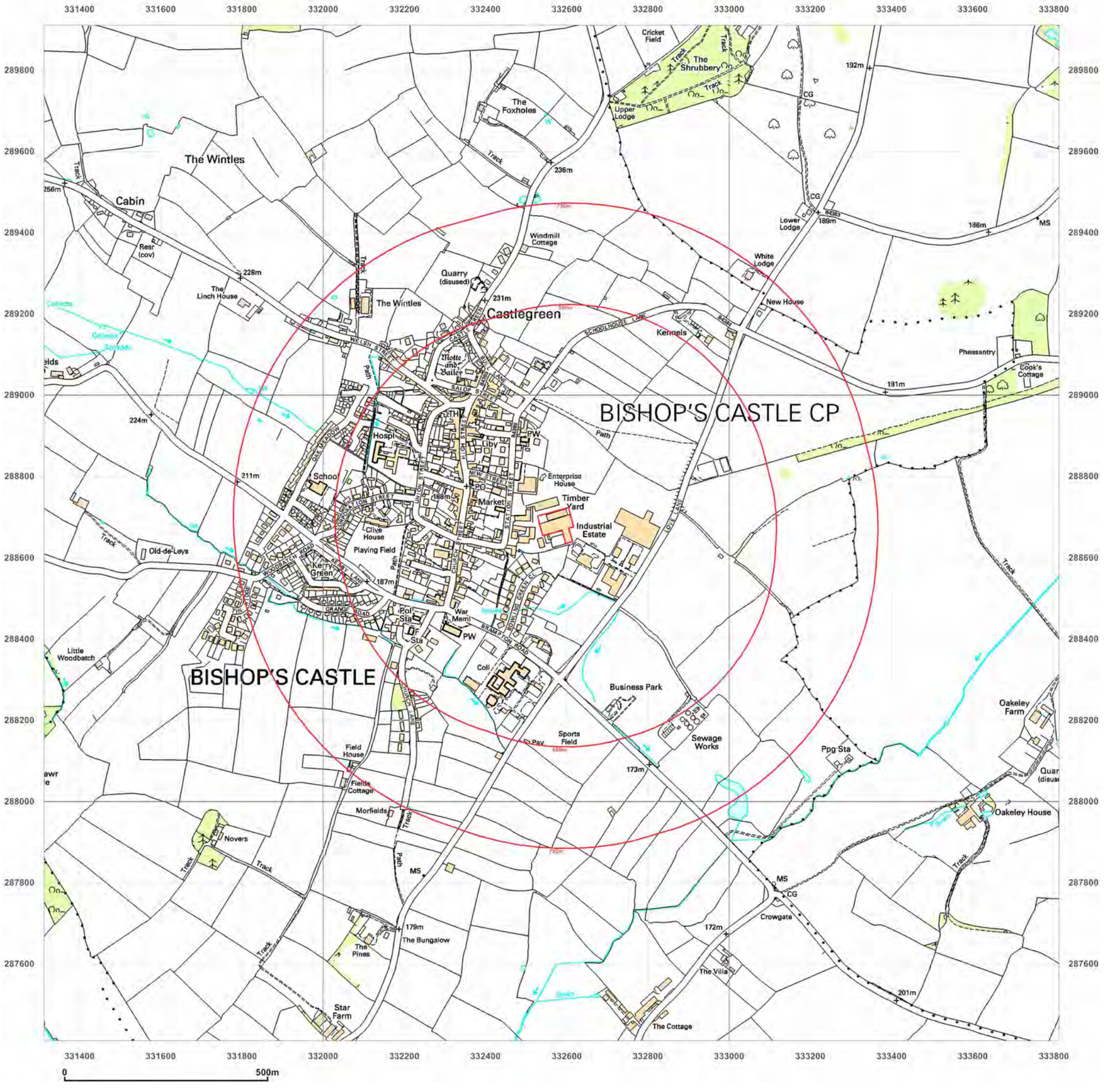

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ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: 1:10,000 Raster

Map date: **2002**

Scale: 1:10,000

Printed at: 1:10,000

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Production date: 28 November 2014

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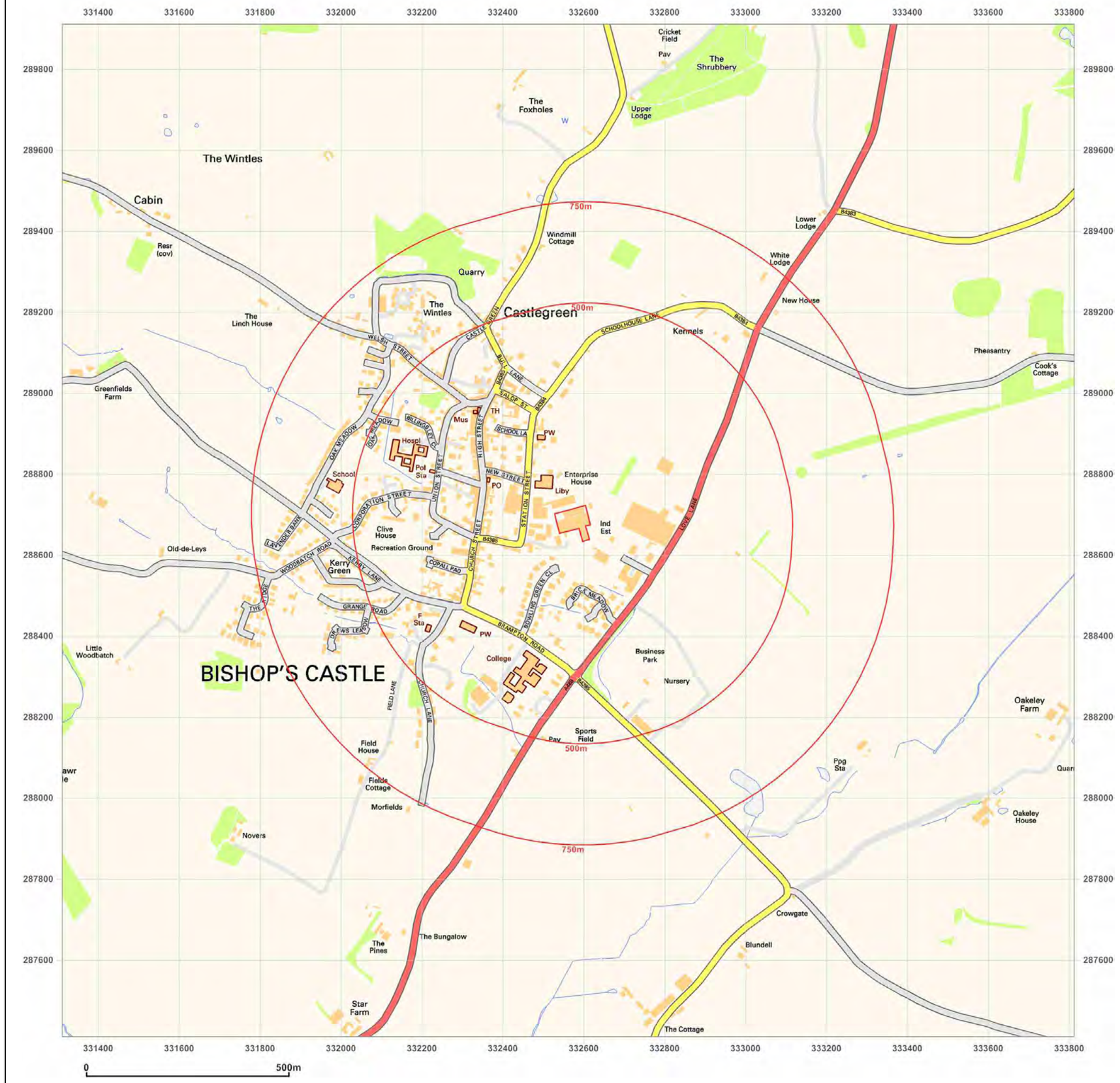

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ENVIRONMENTAL INSIGHT

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS
CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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Production date: 28 November 2014

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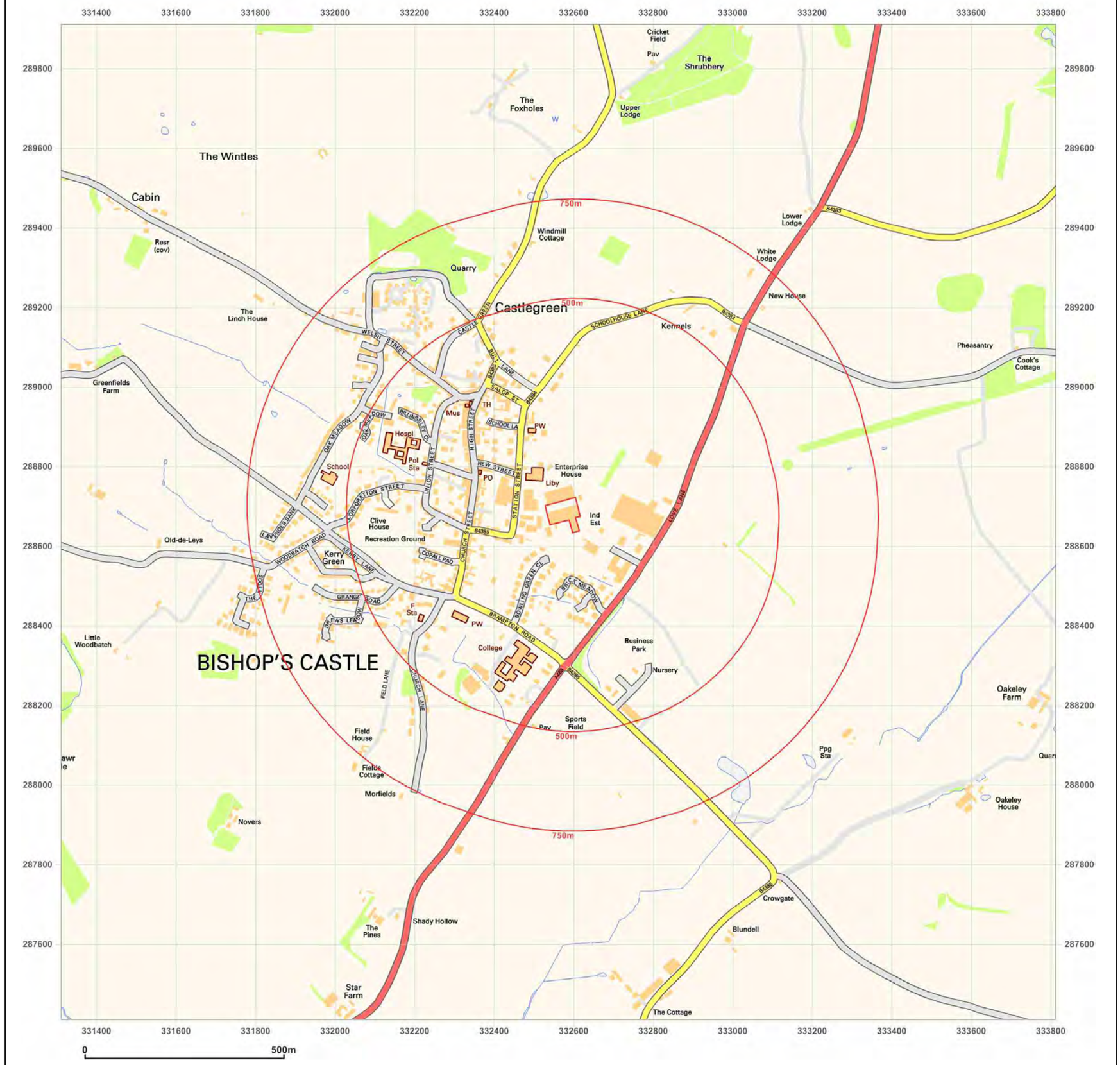

Site Details:

RANSFORD SAWMILLS,
STATION STREET, BISHOPS CASTLE, SY9 5AQ

Client Ref: Ransfords_Saw_Mill
Report Ref: HMD-147-1792171
Grid Ref: 332562, 288661

Map Name: National Grid

Map date: **2014**

Scale: 1:10,000

Printed at: 1:10,000

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Production date: 28 November 2014

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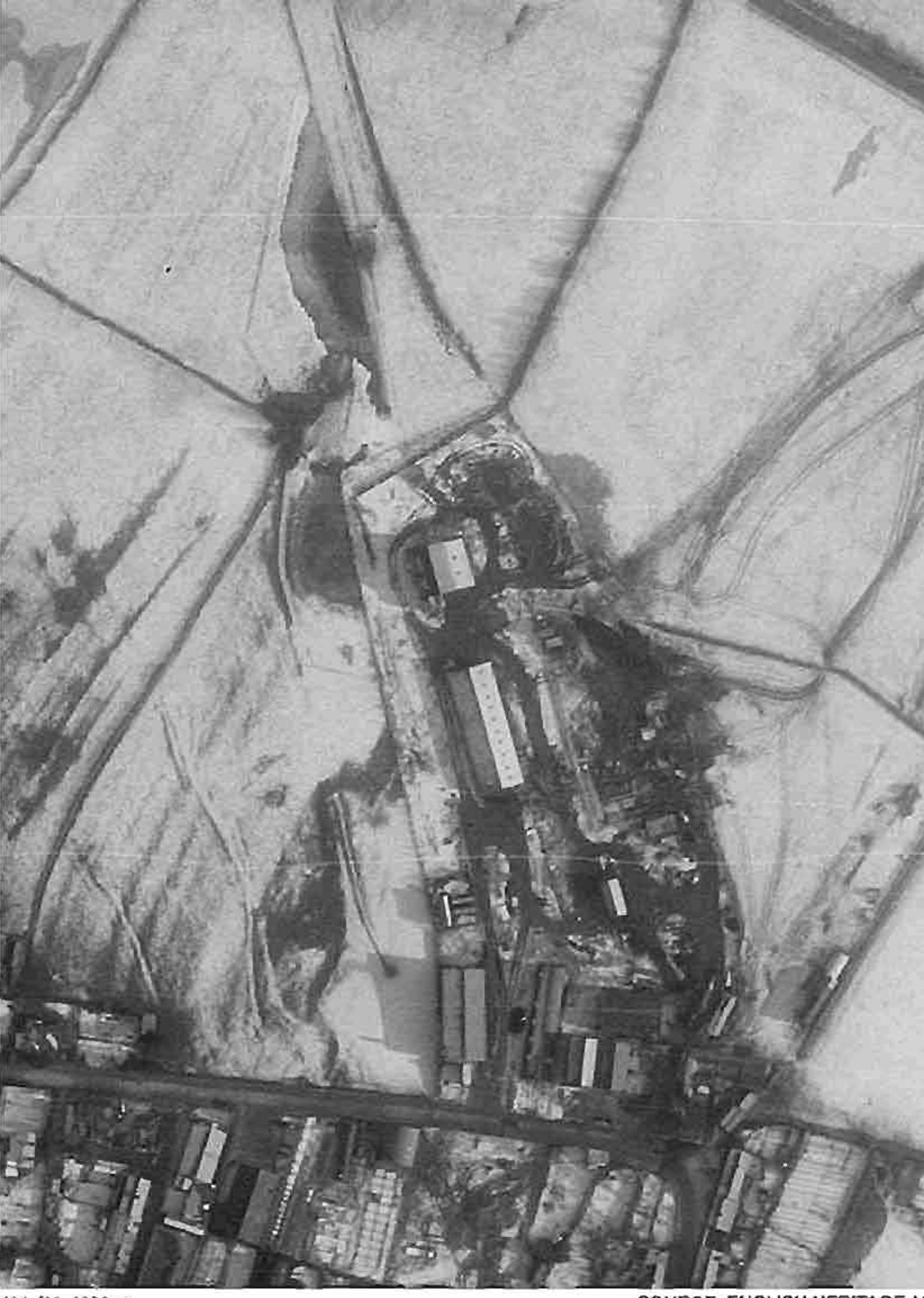
APPENDIX D

Historic Photographs



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SOURCE: ENGLISH HERITAGE AI

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SOURCE: ENGLISH HERITAGE A

APPENDIX E

Treatment Chemical MSDS

SAFETY DATA SHEET

according to 91/155/EEC

1 Substance/preparation and company name

Trade name: **Wolmanit® ProAdd DF**

Company: Dr. Wolman GmbH, Postfach 1160, D - 76545 Sinzheim

Emergency information: Product Management Tel. ++ 49 7221 800-0 or 800 – 234

2 Composition/information on ingredients

Chemical nature: Additive for wood preservatives based on polydimethylsiloxan, emulsifier, formulation auxiliary and water

Contains

CAS number	Name	%	Classification	R-phrases
—	—	—	—	—

3 Possible Hazards

Principal hazard:

Critical hazard to man and environment: Not required

4 First aid measures

General advice	—
if inhaled:	—
on skin contact:	After contact with skin wash thoroughly with plenty of water
on contact with eyes:	Wash immediately affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist
on ingestion:	Rinse mouth immediately, seek medical attention

5 Fire fighting measures

Suitable extinguishing media:	Water, foam, powder, dry extinguishing media, CO_2
Extinguishing media not to be used:	—
Special protective equipment:	No special measures necessary

6 Accidental release measures

Personal precautions: Ensure adequate ventilation

Environmental precautions: Do not discharge into drains or into the soil

Methods for cleaning up: Soak up with absorbent material. Prevent larger amount from spreading and pump into suitable container if possible

7 Handling and storage

Handling:
The precautions generally taken with chemicals are to be observed when handling and applying the product. Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke.

Storage:
Store in original container in a dry and cool place. Keep out of reach of children.
Ensure thorough ventilation of storage and work areas. Protect from acids and acid forming.

8 Exposure controls and personal protection

Additional information on the lay-out of technical plant: see 7

Personal protective equipment:

Respiratory protection: Breathing protection if ventilations inadequate

Hand protection: Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): E.g. nitrile rubber (0.4 mm), chlorophene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other.

Eye protection: Tightly fitting safety googles (EN 166)

Body protection: Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to DIN-EN 465).

General safety and hygiene measures:
Observe the precautions generally taken with chemicals

9 Physical and chemical properties

Form:	liquid
Colour:	white
Odour:	characteristic
Melting point /melting range:	—
Boiling point / boiling range:	—
Flash point:	not applicable
Ignition temperature:	—
Explosion limits:	—
Vapour pressure:	—
Density:	approx. 1 g/cm³ at 20 °C
pH-value:	approx. 7 at 20 °C
Solubility in water:	miscible
Viscosity:	approx. 1000 mm²/s

10 Stability and reactivity

Conditions to be avoided: —

Substances to be avoided: —

Hazardous decomposition products: No decomposition if correctly stored and handled

11 Toxicological information

Acute toxicity:

LD_{50} oral (rat): —

Primary irritation:

Skin irritation: not irritant
Eye irritation: not irritant

Sensitisation: no sensitising effects known

12 Ecological information

General advice:
Observe the legal provisions regarding the prevention of pollution of ground and surface water as well as air and soil. Do not discharge product into natural waters without pre-treatment.

13 Disposal considerations

Product:
Recommendations: Dispose of by special means in accordance with local regulations e.g. suitable incineration
Recommended waste key: 16 05 09 “discarded chemicals”

Contaminated packaging:
Recommendations: After employing and appropriate cleaning containers can be recycled or given back to the producer

14 Transport information

Land transport ADR/RID and GGVS/GGVE (international/national):

Class:	—
UN-number:	—
Description of the good:	—
Packaging group:	—

Sea transport IMDG/GGVSee:

Class:	—
UN-number:	—
Proper shipping name:	—
Packaging group:	—
EMS-number:	—
MFAG:	—

Air transport ICAO-TI and IATA-DGR:

Class:	
UN-number:	—
Proper shipping name:	—
Packaging group:	—
	—

15 Regulatory information

Labelling according to EC Directives: Not subject to labelling

National legislation / regulations:

Water hazard class: WGK 2 – water hazardous (self-classification – Germany)

16 Other information

All information is given in conjunction with the Technical Leaflet. The information contained herein is based on the present state of our knowledge and does not therefore guarantee certain properties. Recipients of our product must take responsibility for observing existing laws and regulations.

Safety data sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Wolsit SP

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

Relevant identified uses: process chemical
Recommended use: Waterbased additive for liquid processing systems

1.3. Details of the supplier of the safety data sheet

Company:
BASF Wolman GmbH
Dr.-Wolman-Str. 31-33
76547 Sinzheim, Germany

Contact address:
BASF plc
PO Box 4, Earl Road, Cheadle Hulme,
Cheadle, Cheshire
SK8 6QG, UNITED KINGDOM

Telephone: +44 161 485-6222
E-mail address: product-safety-north@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Directive 67/548/EEC or 1999/45/EC

Possible Hazards:
Causes burns.

May cause sensitization by skin contact.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2. Label elements

According to Directive 67/548/EEC or 1999/45/EC

Directive 1999/45/EC ('Preparation Directive')

Hazard symbol(s)

C	Corrosive.	
N	Dangerous for the environment.	

R-phrase(s)

R34	Causes burns.
R43	May cause sensitization by skin contact.
R51/53	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.
S28.2	After contact with skin, wash immediately with plenty of water.
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).

Hazard determining component(s) for labelling: MIXTURE OF: 5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE AND 2-METHYL-2H-ISOTHIAZOL-3-ONE (3:1)

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

Preparation based on: 5-Chloro-2-methyl-2H-isothiazol-3-one, 2-Methyl-2H-isothiazol-3-one

Hazardous ingredients (GHS)
according to Regulation (EC) No. 1272/2008

a mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one (3:1)

Content (W/W): >= 1 % - < 2.5 %	Acute Tox. 3 (oral)
CAS Number: 55965-84-9	Acute Tox. 3 (Inhalation - mist)
INDEX-Number: 613-167-00-5	Acute Tox. 3 (dermal)
	Skin Corr./Irrit. 1B
	Skin Sens. 1
	Aquatic Acute 1
	Aquatic Chronic 1
	H314, H311, H331, H301, H317, H400, H410

Hazardous ingredients
according to Directive 1999/45/EC

a mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one (3:1)
Content (W/W): >= 1 % - < 2.5 %
CAS Number: 55965-84-9
INDEX-Number: 613-167-00-5
Hazard symbol(s): T, N
R-phrase(s): 23/24/25, 34, 43, 50/53

For the classifications not written out in full in this section, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, the full text is listed in section 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

First aid personnel should pay attention to their own safety. Immediately remove contaminated clothing.

If inhaled:
If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

On skin contact:
After contact with skin, wash immediately with plenty of water and soap. Under no circumstances should organic solvent be used. If irritation develops, seek medical attention.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: skin corrosion, Eye irritation, allergic symptoms

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:
foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

5.2. Special hazards arising from the substance or mixture

Carbon dioxide, carbon monoxide, nitrogen oxides, fumes/smoke, carbon black, corrosive gases/vapours

5.3. Advice for fire-fighters

Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Do not breathe vapour/aerosol/spray mists. Handle in accordance with good industrial hygiene and safety practice.

6.2. Environmental precautions

Contain contaminated water/firefighting water. Do not allow to enter soil, waterways or waste water channels.

6.3. Methods and material for containment and cleaning up

For small amounts: Pick up with inert absorbent material (e.g. sand, earth etc.). Dispose of contaminated material as prescribed.
For large amounts: Pump off product.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Avoid contact with the skin, eyes and clothing. Smoking, eating and drinking are forbidden in application area. For personal protection see section 8. Comply with the health and safety at work laws. Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:
No special precautions necessary.

7.2. Conditions for safe storage, including any incompatibilities

Suitable materials for containers: High density polyethylene (HDPE)
Further information on storage conditions: Keep away from food, drink and animal feeding stuffs. Keep only in the original container. Keep container tightly closed. Store protected against freezing. Keep locked-up and out of reach of children.

Protect from temperatures below: 5 °C
Characteristics of the product are irreversibly changed below the limit temperature.

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

55965-84-9: mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1); mix ture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-4-isothiazolin-3-one [EC no. 220-239-6] (3:1)

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Combination filter for gases/vapours of organic, inorganic, acid inorganic and alkaline compounds (e.g. EN 14387 Type ABEK).

Hand protection:
Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) and other

Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures
Do not inhale gases/vapours/aerosols. Avoid contact with the skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks).

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid	
Colour:	greenish	
Odour:	mild	
pH value:	approx. 2 - 5 (20 °C)	
Melting temperature:	approx. -3 °C	
boiling temperature:	approx. 100 °C	
Flash point:	A flash point determination is unnecessary due to the high water content.	
Evaporation rate:	not determined	
Flammability:	not flammable	
Ignition temperature:	not applicable	
Vapour pressure:	approx. 27.2 hPa (20 °C)	(OECD Guideline 104)
Density:	approx. 1.02 g/cm3 (20 °C)	
Relative vapour density (air):	not determined	
Solubility in water:	fully soluble (20 °C)	
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.	
Viscosity, dynamic:	approx. 3 mPa.s (25 °C)	(DIN EN ISO 2555)
Explosion hazard:	not explosive	

9.2. Other information

Miscibility with water:
(20 °C)
miscible in all proportions
Other Information:
If necessary, information on other physical and chemical parameters is indicated in this section.

SECTION 10: Stability and Reactivity

10.1. Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions
The product is stable if stored and handled as prescribed/indicated.

10.4. Conditions to avoid
See MSDS section 7 - Handling and storage.

10.5. Incompatible materials

Substances to avoid:
strong oxidizing agents, strong reducing agents

10.6. Hazardous decomposition products

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Experimental/calculated data:
LD50 rat (oral): > 2,000 mg/kg

LD50 rat (dermal): > 2,000 mg/kg

Irritation

Experimental/calculated data:
Skin corrosion/irritation: Corrosive.

Serious eye damage/irritation: Corrosive.

Respiratory/Skin sensitization

Assessment of sensitization:
May cause sensitization by skin contact.

Germ cell mutagenicity

Assessment of mutagenicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Carcinogenicity

Assessment of carcinogenicity:
Not expected to be carcinogenic (based on composition).

Reproductive toxicity

Assessment of reproduction toxicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Developmental toxicity

Assessment of teratogenicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Other relevant toxicity information

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity to fish:
LC50 (96 h) 10 - 100 mg/l

Aquatic invertebrates:
No observed effect concentration (48 h) 1 - 10 mg/l, Daphnia magna

Microorganisms/Effect on activated sludge:
EC50 (3 h) 10 - 100 mg/l

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

12.5. Results of PBT and vPvB assessment

The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Other ecotoxicological advice:
The product should not be allowed to reach either sewage waters or water purification plants. The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

This material and its container must be disposed of in a safe way.
Must be sent to a suitable incineration plant, observing local regulations.

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).
This product and any uncleaned containers must be disposed of as hazardous waste in accordance with the 2005 Hazardous Waste Regulations and amendments (United Kingdom)

Contaminated packaging:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport Information

Land transport

ADR

UN number	UN3265
UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (contains 5-CHLORO-2-METHYL-2H-ISOTHIAZOL-3-ONE)
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes
Special precautions for user:	Tunnel code: E

RID

UN number	UN3265
UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (contains 5-CHLORO-2-METHYL-2H-ISOTHIAZOL-3-ONE)
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes
Special precautions for user:	None known

Inland waterway transport

ADN

UN number	UN3265
UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (contains 5-CHLORO-2-METHYL-2H-ISOTHIAZOL-3-ONE)
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes
Special precautions for user:	None known
Transport in inland waterway vessel:	Not evaluated

Sea transport

IMDG

UN number:	UN 3265

UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (contains 5-CHLORO-2-METHYL-2H-ISOTHIAZOL-3-ONE)
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes Marine pollutant: YES
Special precautions for user:	None known

Air transport

IATA/ICAO

UN number:	UN 3265
UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (contains 5-CHLORO-2-METHYL-2H-ISOTHIAZOL-3-ONE)
Transport hazard class(es):	8
Packing group:	II
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

14.1. UN number
See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated

Pollution category:	Not evaluated
Ship Type:	Not evaluated

Further information
This product is subject to the most recent edition of "The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations" and their amendments (United Kingdom).

SECTION 15: Regulatory Information

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

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).
This product is classified under the Chemicals (Hazard Information and Packaging) Regulations, (CHIP) (United Kingdom).
This product may be subject to the Control of Major Accident Hazards Regulations (COMAH), and amendments if specific threshold tonnages are exceeded (United Kingdom).

To avoid risks to man and the environment, comply with the instructions for use.

Biocidal Products Directive 98/8/EC

15.2. Chemical Safety Assessment

Chemical Safety Assessment not required

SECTION 16: Other Information

In addition to the information given in the safety data sheet we refer to the product specific 'Technical Information'.

Full text of the classifications, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, if mentioned in section 2 or 3:

T	Toxic.
N	Dangerous for the environment.
23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
34	Causes burns.
43	May cause sensitization by skin contact.
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Acute Tox.	Acute toxicity
Skin Corr./Irrit.	Skin corrosion/irritation
Skin Sens.	Skin sensitization
Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
H314	Causes severe skin burns and eye damage.

H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H301	Toxic if swallowed.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

If you have any queries relating to this MSDS, it's contents or any other product safety related questions, please write to the following e-mail address: product-safety-north@basf.com

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Safety data sheet

BASF Safety data sheet according to Regulation (EC) No. 1907/2006
Date / Revised: 20.03.2014 Version: 2.0
Product: **Wolmanit ProColor brown 2005**
(ID no. 30484628/SDS_GEN_GB/EN)
Date of print 22.04.2014

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Wolmanit ProColor brown 2005

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

Relevant identified uses: Colour concentrate for the professional use in wood protection
Recommended use: Colour concentrate for the professional use in wood protection

1.3. Details of the supplier of the safety data sheet

Company:
BASF Wolman GmbH
Dr.-Wolman-Str. 31-33
76547 Sinzheim, Germany

Contact address:
BASF plc
PO Box 4, Earl Road, Cheadle Hulme,
Cheadle, Cheshire
SK8 6QG, UNITED KINGDOM

Telephone: +44 161 485-6222
E-mail address: product-safety-north@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Directive 67/548/EEC or 1999/45/EC

Possible Hazards:
Irritating to eyes and skin.

May cause sensitization by skin contact.

2.2. Label elements

According to Directive 67/548/EEC or 1999/45/EC

Directive 1999/45/EC ('Preparation Directive')

Hazard symbol(s)

Xi Irritant.

R-phrase(s)

R36/38	Irritating to eyes and skin.
R43	May cause sensitization by skin contact.

S-phrase(s)

S24/25	Avoid contact with skin and eyes.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/39	Wear suitable gloves and eye/face protection.
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.

The product is classified and labelled in accordance with EC Directives.

Hazard determining component(s) for labelling: azoic dye

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

liquid concentration for the colouration of wood - miscible with water

Hazardous ingredients (GHS)
according to Regulation (EC) No. 1272/2008

azoic dye

Content (W/W): >= 30 % - <= 50 %	Skin Sens. 1 H317

Acetic acid

Content (W/W): <= 0.2 %	Flam. Liq. 3
CAS Number: 64-19-7	Skin Corr./Irrit. 1B
EC-Number: 200-580-7	H314, H226
INDEX-Number: 607-002-00-6	

Hazardous ingredients
according to Directive 1999/45/EC

azoic dye

Content (W/W): >= 30 % - <= 50 %
Hazard symbol(s): Xi
R-phrase(s): 43

Acetic acid

Content (W/W): <= 0.2 %
CAS Number: 64-19-7
EC-Number: 200-580-7
INDEX-Number: 607-002-00-6
Hazard symbol(s): C
R-phrase(s): 10, 34

For the classifications not written out in full in this section, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, the full text is listed in section 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

First aid personnel should pay attention to their own safety. Immediately remove contaminated clothing.

If inhaled:
If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

On skin contact:
After contact with skin, wash immediately with plenty of water and soap. Under no circumstances should organic solvent be used. If irritation develops, seek medical attention.

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms: Eye irritation, skin irritation

4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

5.2. Special hazards arising from the substance or mixture
Carbon dioxide, carbon monoxide, nitrogen oxides, fumes/smoke, carbon black, corrosive gases/vapours

5.3. Advice for fire-fighters
Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective clothing. Do not breathe vapour/aerosol/spray mists. Handle in accordance with good industrial hygiene and safety practice.

6.2. Environmental precautions
Contain contaminated water/firefighting water. Do not allow to enter soil, waterways or waste water channels.

6.3. Methods and material for containment and cleaning up

For small amounts: Pick up with inert absorbent material (e.g. sand, earth etc.). Dispose of contaminated material as prescribed.
For large amounts: Pump off product.

6.4. Reference to other sections
Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling
Avoid contact with the skin, eyes and clothing. Smoking, eating and drinking are forbidden in application area. For personal protection see section 8. Comply with the health and safety at work laws. Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:
No special precautions necessary.

7.2. Conditions for safe storage, including any incompatibilities
Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect from direct sunlight. Store protected against freezing.

Frost sensitive

7.3. Specific end use(s)
For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

64-19-7: acetic acid...%
TWA value 25 mg/m3 ; 10 ppm (OEL (EU))
indicative

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Combination filter for gases/vapours of organic, inorganic, acid inorganic and alkaline compounds (e.g. EN 14387 Type ABEK).

Hand protection:

Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) and other Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures
Do not inhale gases/vapours/aerosols. Avoid contact with the skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks).

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid
Colour:	dark brown
Odour:	product specific
pH value:	approx. 3 - 5 (20 °C)
Melting temperature:	not applicable
boiling temperature:	approx. 100 - 105 °C
Flash point:	> 100 °C
Evaporation rate:	not determined
Flammability:	not flammable
Flammability of Aerosol Products:	not applicable, the product does not form flammable aerosoles
Lower explosion limit:	dropped
Ignition temperature:	not applicable
Vapour pressure:	not applicable
Density:	approx. 1.1 g/cm3 (20 °C)
Relative vapour density (air):	not determined
Solubility in water:	miscible
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.

Viscosity, dynamic:
not determined
Explosion hazard: not explosive

9.2. Other information

Miscibility with water:
miscible
Other Information:
If necessary, information on other physical and chemical parameters is indicated in this section.

SECTION 10: Stability and Reactivity

10.1. Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions
The product is stable if stored and handled as prescribed/indicated.

10.4. Conditions to avoid
See MSDS section 7 - Handling and storage.

10.5. Incompatible materials

Substances to avoid:
strong oxidizing agents, strong reducing agents

10.6. Hazardous decomposition products

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Experimental/calculated data:
LD50 rat (oral): > 5,000 mg/kg

Irritation

Experimental/calculated data:
Skin corrosion/irritation rabbit: Irritant.

Serious eye damage/irritation rabbit: Irritant.

Respiratory/Skin sensitization

Assessment of sensitization:
May cause sensitization by skin contact.

Germ cell mutagenicity

Assessment of mutagenicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Carcinogenicity

Assessment of carcinogenicity:
Not expected to be carcinogenic (based on composition).

Reproductive toxicity

Assessment of reproduction toxicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Developmental toxicity

Assessment of teratogenicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Other relevant toxicity information

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested. The statements on toxicology have been derived from products of a similar structure and composition.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity to fish:
LC50 (96 h) > 100 mg/l

Microorganisms/Effect on activated sludge:

EC50 > 100 mg/l

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria).

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

12.5. Results of PBT and vPvB assessment

The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Other ecotoxicological advice:
The product should not be allowed to reach either sewage waters or water purification plants. The product has not been tested. The statement has been derived from the properties of the individual components.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

This material and its container must be disposed of in a safe way.
Must be disposed of or incinerated in accordance with local regulations.

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).
This product and any uncleaned containers must be disposed of as hazardous waste in accordance with the 2005 Hazardous Waste Regulations and amendments (United Kingdom)

Contaminated packaging:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport Information

Land transport

ADR

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Inland waterway transport

ADN

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known
Transport in inland waterway vessel:	Not evaluated

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

14.1. UN number
See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated

Ship Type: Not evaluated

SECTION 15: Regulatory Information

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

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).
This product is classified under the Chemicals (Hazard Information and Packaging) Regulations, (CHIP) (United Kingdom).

15.2. Chemical Safety Assessment

Chemical Safety Assessment not required

SECTION 16: Other Information

In addition to the information given in the safety data sheet we refer to the product specific 'Technical Information'.

Full text of the classifications, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, if mentioned in section 2 or 3:

Xi	Irritant.
C	Corrosive.
43	May cause sensitization by skin contact.
10	Flammable.
34	Causes burns.
Skin Sens.	Skin sensitization
Flam. Liq.	Flammable liquid
Skin Corr./Irrit.	Skin corrosion/irritation
H317	May cause an allergic skin reaction.
H314	Causes severe skin burns and eye damage.
H226	Flammable liquid and vapour.

If you have any queries relating to this MSDS, it's contents or any other product safety related questions, please write to the following e-mail address: product-safety-north@basf.com

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Safety data sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Wolmanit CX-10

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

Relevant identified uses: biocide
Recommended use: wood preservative, for industrial and professional users

1.3. Details of the supplier of the safety data sheet

Company:
BASF Wolman GmbH
Dr.-Wolman-Str. 31-33
76547 Sinzheim, Germany

Contact address:
BASF plc
PO Box 4, Earl Road, Cheadle Hulme,
Cheadle, Cheshire
SK8 6QG, UNITED KINGDOM

Telephone: +44 161 485-6222
E-mail address: product-safety-north@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Directive 67/548/EEC or 1999/45/EC

Possible Hazards:
Causes burns.

Harmful if swallowed.
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2. Label elements

According to Directive 67/548/EEC or 1999/45/EC

Directive 1999/45/EC ('Preparation Directive')

Hazard symbol(s)

C	Corrosive.	
N	Dangerous for the environment.	

R-phrase(s)

R34	Causes burns.
R22	Harmful if swallowed.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

S2	Keep out of the reach of children.
S13	Keep away from food, drink and animal feeding stuffs.
S20/21	When using do not eat, drink or smoke.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
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).

Hazard determining component(s) for labelling: complexing agent based on ethanolamine and carboxylic acids (confidential), copper(II) carbonate--copper(II) hydroxide(1:1), Bis-(N-cyclohexyldiazeniumdioxy)-copper

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

Liquid wood preservative, based on: Copper compound, Boron compound

dissolved in: complexing agent based on ethanolamine and carboxylic acids (confidential)

Hazardous ingredients (GHS)
according to Regulation (EC) No. 1272/2008

copper(II) carbonate--copper(II) hydroxide(1:1)

Content (W/W): 16.3 %	Acute Tox. 4 (Inhalation - dust)
CAS Number: 12069-69-1	Acute Tox. 4 (oral)
EC-Number: 235-113-6	Aquatic Acute 1
REACH registration number: 01-2119429040-56	Aquatic Chronic 1
	H332, H302, H400, H410

boric acid

Content (W/W): 5 %	Repr. 1B (fertility)
CAS Number: 10043-35-3	Repr. 1B (unborn child)
EC-Number: 233-139-2	
REACH registration number: 01-2119486683-25	
INDEX-Number: 005-007-00-2	

Bis-(N-cyclohexyldiazeniumdioxy)-copper

Content (W/W): 3.5 %	Acute Tox. 4 (oral)
CAS Number: 312600-89-8	Eye Dam./Irrit. 1
	Aquatic Acute 1
	Aquatic Chronic 1
	H318, H302, H400, H410

complexing agent based on ethanolamine and carboxylic acids (confidential)

Content (W/W): >= 20 % - <= 50 %	Acute Tox. 4 (oral)
	Skin Corr./Irrit. 1B
	H314, H302

Hazardous ingredients
according to Directive 1999/45/EC

copper(II) carbonate--copper(II) hydroxide(1:1)
Content (W/W): 16.3 %
CAS Number: 12069-69-1
EC-Number: 235-113-6
REACH registration number: 01-2119429040-56
Hazard symbol(s): Xn, N

R-phrase(s): 20/22, 50/53

boric acid
Content (W/W): 5 %
CAS Number: 10043-35-3
EC-Number: 233-139-2
REACH registration number: 01-2119486683-25
INDEX-Number: 005-007-00-2
Hazard symbol(s): T
R-phrase(s): 60, 61
Repr. Cat. 2

Bis-(N-cyclohexyldiazeniumdioxy)-copper
Content (W/W): 3.5 %
CAS Number: 312600-89-8
Hazard symbol(s): Xn, N
R-phrase(s): 22, 41, 50/53

complexing agent based on ethanolamine and carboxylic acids (confidential)
Content (W/W): >= 20 % - <= 50 %
Hazard symbol(s): C
R-phrase(s): 34, 22

For the classifications not written out in full in this section, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, the full text is listed in section 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

First aid personnel should pay attention to their own safety. Immediately remove contaminated clothing.

If inhaled:
If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

On skin contact:
After contact with skin, wash immediately with plenty of water and soap. Under no circumstances should organic solvent be used. If irritation develops, seek medical attention.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: skin corrosion, Eye irritation

4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

5.2. Special hazards arising from the substance or mixture
Carbon dioxide, carbon monoxide, nitrogen oxides, fumes/smoke, carbon black, corrosive gases/vapours

5.3. Advice for fire-fighters
Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective clothing. Do not breathe vapour/aerosol/spray mists. Handle in accordance with good industrial hygiene and safety practice.

6.2. Environmental precautions
Contain contaminated water/firefighting water. Do not allow to enter soil, waterways or waste water channels.

6.3. Methods and material for containment and cleaning up
For small amounts: Pick up with inert absorbent material (e.g. sand, earth etc.). Dispose of contaminated material as prescribed.
For large amounts: Pump off product.

6.4. Reference to other sections
Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Avoid contact with the skin, eyes and clothing. Smoking, eating and drinking are forbidden in application area. For personal protection see section 8. Comply with the health and safety at work laws. Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:
No special precautions necessary.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect from direct sunlight. Store protected against freezing.

Frost sensitive

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

141-43-5: 2-aminoethanol; ethanolamine
TWA value 2.5 mg/m3 ; 1 ppm (WEL/EH 40 (UK))
STEL value 7.6 mg/m3 ; 3 ppm (WEL/EH 40 (UK))
TWA value 2.5 mg/m3 ; 1 ppm (OEL (EU))
indicative
STEL value 7.6 mg/m3 ; 3 ppm (OEL (EU))
indicative
Skin Designation (OEL (EU))
The substance can be absorbed through the skin.
Skin Designation (WEL/EH 40 (UK))
The substance can be absorbed through the skin.

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Combination filter for gases/vapours of organic, inorganic, acid inorganic and alkaline compounds (e.g. EN 14387 Type ABEK).

Hand protection:

Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) and other Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures
Do not inhale gases/vapours/aerosols. Avoid contact with the skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks).

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid
Colour:	blue
Odour:	faint specific odour
pH value:	approx. 9.6 (approx. 20 g/l, 20 °C)
Melting point:	approx. 0 °C
boiling temperature:	> 100 °C
Flash point:	Non-flammable.
Flammability:	not flammable
Ignition temperature:	approx. 420 °C
Vapour pressure:	not applicable
Density:	approx. 1.27 g/cm3 (20 °C)
Thermal decomposition:	> 250 °C
Viscosity, dynamic:	not determined
Explosion hazard:	not explosive

9.2. Other information

Miscibility with water:	miscible in all proportions	
Flow time:	approx. 38 s (22 °C)	(DIN EN ISO 2431; 4 mm)

Other Information:
If necessary, information on other physical and chemical parameters is indicated in this section.

SECTION 10: Stability and Reactivity

10.1. Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions
The product is stable if stored and handled as prescribed/indicated.

10.4. Conditions to avoid
See MSDS section 7 - Handling and storage.

10.5. Incompatible materials

Substances to avoid:
strong oxidizing agents, strong reducing agents

10.6. Hazardous decomposition products

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Experimental/calculated data:
LD50 rat (oral): approx. 500 mg/kg (OECD Guideline 401)

LD50 rat (dermal): > 2,000 mg/kg (OECD Guideline 402)

Irritation

Experimental/calculated data:
Skin corrosion/irritation rabbit: Corrosive. (OECD Guideline 404)

Serious eye damage/irritation rabbit: Risk of serious damage to eyes. (OECD Guideline 405)

Respiratory/Skin sensitization

Experimental/calculated data:
Buehler test guinea pig: Non-sensitizing. (OECD Guideline 406)

Germ cell mutagenicity

Assessment of mutagenicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Carcinogenicity

Assessment of carcinogenicity:
Not expected to be carcinogenic (based on composition).

Reproductive toxicity

Assessment of reproduction toxicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Developmental toxicity

Assessment of teratogenicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Other relevant toxicity information

Manufacturer of boric acid / borates point out that animal ingestion studies in several species, at high doses, indicate that boric acid / borates cause reproductive and developmental effects. A human study of occupational exposure to boric acid / borate dust showed no adverse effect on reproduction. Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity to fish:
LC50 (96 h) < 1 mg/l, Brachydanio rerio (OECD Guideline 203, static)

Aquatic invertebrates:
LC50 (48 h) < 1 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

Aquatic plants:

EC50 (72 h) < 1 mg/l, Selenastrum capricornutum (OECD Guideline 201)

Microorganisms/Effect on activated sludge:
EC50 (3 h) approx. 50 mg/l (OECD Guideline 209)

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
The ingredients based on copper can be virtually eliminated from water by abiotic processes e.g. adsorption onto activated sludge.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

12.5. Results of PBT and vPvB assessment

The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Other ecotoxicological advice:
The product should not be allowed to reach either sewage waters or water purification plants. The product has not been tested. The statements on ecotoxicology have been derived from products of a similar structure and composition.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

This material and its container must be disposed of in a safe way.
Must be disposed of or incinerated in accordance with local regulations.

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).
This product and any uncleaned containers must be disposed of as hazardous waste in accordance with the 2005 Hazardous Waste Regulations and amendments (United Kingdom)

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport Information

Land transport

ADR

UN number	UN1760
UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (contains ALKYLAMINE, COPPER CARBONATE)
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes
Special precautions for user:	Tunnel code: E

RID

UN number	UN1760
UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (contains ALKYLAMINE, COPPER CARBONATE)
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes
Special precautions for user:	None known

Inland waterway transport

ADN

UN number	UN1760
UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (contains ALKYLAMINE, COPPER CARBONATE)
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes
Special precautions for user:	None known
Transport in inland waterway vessel:	Not evaluated

Sea transport

IMDG

UN number:	UN 1760
UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (contains ALKYLAMINE, COPPER CARBONATE)
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes Marine pollutant: YES
Special precautions for user:	None known

Air transport

IATA/ICAO

UN number:	UN 1760
UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (contains ALKYLAMINE, COPPER CARBONATE)
Transport hazard class(es):	8
Packing group:	II
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

14.1. UN number
See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

Further information
This product is subject to the most recent edition of "The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations" and their amendments (United Kingdom).

SECTION 15: Regulatory Information

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

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).
This product is classified under the Chemicals (Hazard Information and Packaging) Regulations, (CHIP) (United Kingdom).
This product may be subject to the Control of Major Accident Hazards Regulations (COMAH), and amendments if specific threshold tonnages are exceeded (United Kingdom).

Biocidal Products Directive 98/8/EC

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2. Chemical Safety Assessment

Chemical Safety Assessment not required

SECTION 16: Other Information

In addition to the information given in the safety data sheet we refer to the product specific 'Technical Information'.

Full text of the classifications, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, if mentioned in section 2 or 3:

Xn	Harmful.
N	Dangerous for the environment.
T	Toxic.
C	Corrosive.
20/22	Harmful by inhalation and if swallowed.
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
60	May impair fertility.
61	May cause harm to the unborn child.

22	Harmful if swallowed.
41	Risk of serious damage to eyes.
34	Causes burns.
Acute Tox.	Acute toxicity
Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Repr.	Reproductive toxicity
Eye Dam./Irrit.	Serious eye damage/eye irritation
Skin Corr./Irrit.	Skin corrosion/irritation
Repr. Cat. 2	Reprotoxic substances (fertility or development) Category 2: Substances which should be regarded as if they cause developmental toxicity to in humans or substances which should be regarded as if they impair fertility in humans.
H332	Harmful if inhaled.
H302	Harmful if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H318	Causes serious eye damage.
H314	Causes severe skin burns and eye damage.

If you have any queries relating to this MSDS, it's contents or any other product safety related questions, please write to the following e-mail address: product-safety-north@basf.com

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

APPENDIX F

Sawmill Abstraction Borehole Installation Details

WELL AND PUMP DATA

W. B. & A. D. MORGAN

Water Well Drilling,
Electrical Engineers and Pumping Specialists
The Old Vicarage, Lyonshall,
Kington, Herefordshire HR5 3LN
Telephone LYONSHALL (05448) 297/577

Property owner's name and address
Bishops Castle
Mr. B. Davis
Timber Yard

Remarks, Comments, etc.

886

Well depth 250FT 75.7M | Datum point from which all measurements are taken Surface

Method of Drilling
☑ Rotary hammer ☐ F.O.A. ☐ Direct rotary

Use
☐ Domestic ☐ Public supply ☑ Industrial
☐ Irrigation ☐ Commercial ☐ Monitoring
☐ Test Well ☐ Heating or cooling ☐ _____

Temporary Casing
Hole Dia 10" in/cm Casing Size 10" in/cm Depth 50FT ft/m
Hole Dia 254mm in/cm Casing Size 254mm in/cm Depth _____ ft/m
Hole Dia _____ in/cm Casing Size _____ in/cm Depth _____ ft/m
Hole Dia _____ in/cm Casing Size _____ in/cm Depth _____ ft/m

Permanent Casing
☐ Steel ☑ PVC ☐ Other
☑ Threaded ☐ Welded ☐ Solvent
Hole Dia 6" in/cm Casing Size _____ in/cm Depth 0 ft/m
Hole Dia 152 mm in/cm Casing Size _____ in/cm Depth 75.7M ft/m

Intake Portion of Well
Screen type _____ or open hole from _____ ft/m to _____ ft/m
Manufacturer Boocle
Material _____ Dia. _____
Fittings _____ Length _____
Set between 72.7M ft/m and 60.M ft/m Slot _____
240FT ft/m and 200FT ft/m Slot _____
_____ ft/m and _____ ft/m Slot _____

Filter Pack
Volume used 50cwt Depth to top of f.p. 83.6M

Grout
Used? ☑ Yes ☐ No Volume used 14cwt
☑ Neat Cement ☐ Bentonite ☐ _____
Method of installation
Depth: from 210FT 63.6M ft/m to Surface ft/m
from _____ ft/m to _____ ft/m

Development
Method _____ Duration _____
Dates _____ Sand content after ___ hrs. _____

Static Water Level
_____ ft/m ☐ below ☐ above grade
Date measured _____

Pumping Water Level
_____ ft/m ☐ below ☐ above grade Date _____
After _____ hrs. pumping at _____ gpm/lpm

Pump
Date installed _____ Type _____
Manufacturer _____ Model No. _____
H.P. _____ Volts _____ Capacity _____
Depth of pump intake setting _____ No. of stages _____
Material of drop pipe _____

Water Quality
Sample taken? ☐ Yes ☐ No
Where analyzed _____

NGR _____ Licence No. _____

Formation Log	Colour	Hardness	From	To
Gravels	Grey	Soft	0	10.6M
Clay	Grey	Soft	10.6M	15.1M
Shale	Grey	Hard	15.1M	75.7M

Water Made @ 140FT/42.4M 200FT/60.6M ft/m

Drilling Crew D Price. Aswough Rig _____

Date started 12 Dec 93 completed Dec. 24th/93

INSTALLATION COMPLETION DETAILS

Drilled for A. EVANS & SON ..... Date 11.5.94

Address STATION STREET ..... Depth 250'

BISHOPS CASTLE ..... Pump at 240'

SHROPSHIRE .....

DETAILS

Liner 4" ...✓.....
6" ..✓.....

Riser 25mm .....
32mm ...✓...
50mm .✓.....

Other .....

Delivery 25mm .....
32mm .....
CLEAR 50mm . .....

Other .....

Remarks :
.....
.....
.....
.....
.....
.....
.....

SITEWORK

Chamber ..... WELL HEAD ONLY. 6"
Pump house .....

PUMP

Make GOWIN .....

Size SC19 .....

H.P. 2 H.P. 3Ø .....

Controls In .....
Box on Post ....

Probes ✓...
Float ..✓..
Flow .....
Pressure ..... Setting .....

Pressure Set Size .....

Blue ..... Red ..... Vert / Horiz

Water Meter ✓.... In 1½" .....

Static Level 9.4 .....

Date .....

Pump Water Level After 3½ .. Hrs @ 540 ~~GPH~~ G.P.H
32M.

ADDITIONAL INFORMATION

DIP HOLE

NO WELL CHAMBER REQUIRED T
50mm
BOREHOLE ON CONCRETE PLINTH GUAGE
6" WELL HEAD ONLY

APPENDIX G

Pumping Station Borehole Installation Details

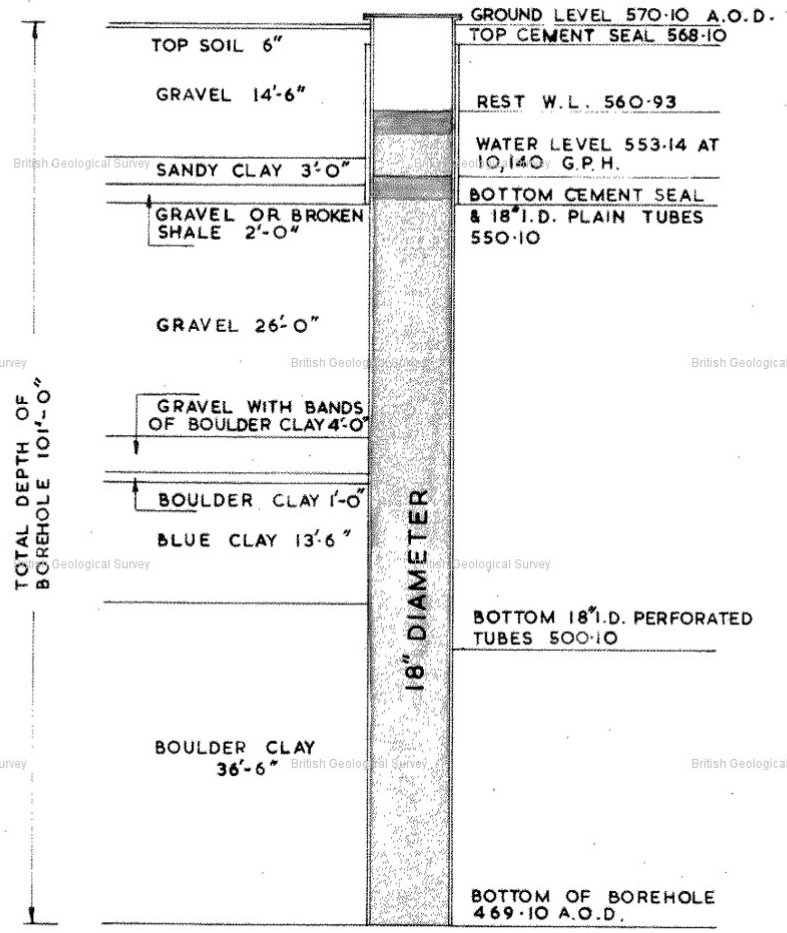
N. 8074

165/29 SO38/13

BOROUGH OF BISHOP'S CASTLE

SECTION OF BOREHOLE AT

BISHOP'S CASTLE



VERTICAL SCALE 16 FT. TO 1 INCH

	INITIALS	DATE
DRAWN BY	W. R. H.	AUG. 1957
TRACED BY	W. R. H.	AUG 1957
CHECKED BY		

WILLCOX RAIKES & MARSHALL
CHARTERED CIVIL ENGINEERS
BIRMINGHAM
AUGUST 1957 No 105/A