

PROJECT REFERENCE: 14.8385

February 2015

Site Condition Investigation  
Sussex House, Quarry Lane

FOR


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**REPORT REVISED** (response to significant changes in client requirements, methods of work etc).

Name:	Signature:	Date:	Nature of revision:

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#### **Trading Terms**

Unless specifically stated within the tender/quotation or unless identified within the introduction to this report it is confirmed that this report has been compiled wholly in accord with Constructive Evaluation Limited's terms of engagement. This report is provided for sole use by the Client and is confidential to them. No responsibility whatsoever for the contents of the report will be accepted to anyone other than the Client.

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#### **Context**

This report is written in the context of an agreed scope of work between Constructive Evaluation Limited and the Client and should not be used in a different context. In light of additional information becoming available, improved practices and changes in legislation amendment or re-interpretation of the report in whole or part may be necessary after its original submission.

#### **Professional Interpretation**

The recommendations made and opinions expressed in the report are based on the conditions revealed by the site works together with an assessment of the data from the insitu and laboratory testing or in respect of the desktop reports. No responsibility can be accepted for conditions that have not been revealed by the research, site works and testing.

The Client is advised that the conditions observed on site by Constructive Evaluation Limited at the time of any site survey may be subject to change. Certain indicators of the presence of hazardous substances may have been latent at the time of the most recent site reconnaissance and they may subsequently have become evident. It is not possible to assess areas which are inaccessible or where access is not granted and CE accept no liability for risks subsequently identified therein.

The conceptual model, Risk assessment and sampling regime has been formulated in accordance with current UK guidance at time of production based upon the relevant information gained from Phase 1 and Phase 2 investigations. While the model and assessment offer opinions and interpretations of these guidelines, the comments made are for guidance only and no liability can be accepted for their accuracy. It is possible that aspects of desktop study may need to be altered to conform to the requirements of the statutory regulatory bodies.

#### **Intrusive Field Operations**

The data collected through direct operations in the production of this report has been so obtained, unless directly otherwise stated, in accordance with current UK guidance, law or accepted industry practice, including but not limited to: BS.5930: 1990 Code of Practice for Site Investigations (Amendment 2: 2010), & BS.10175: 2011 + A1: 2013 Investigations into Potentially Contaminated Sites. Exact exploratory locations will depend upon access conditions, site use and plant capability, CE do not accept liability for issues arising from material identified between or outside of the area of exploratory locations.

#### **Laboratory Testing**

Unless stated otherwise within the text, all geotechnical and material laboratory tests have been performed in accordance with the relevant British Standard Documents. Laboratory testing for contaminated land assessment is completed under the UKAS / MCERTS accreditation schemes, unless identified as otherwise in the report.

#### **Human Health Risk Assessment Criteria**

The Environment Agency has recently undertaken revision of the Soil Guideline Values (SGVs) which are partially complete. Where standards are available using the "new" approach, these have been utilised for correlative purposes. Where standards have not yet been revised, guidance following the "old" approach has been utilised. Please note that upon release of the remaining guidelines, the standards contained within this report may be subject to change. In addition, the second edition of the LQM CIEH guidance has now been released and will be utilised in favour of previously published guideline values.

#### **Third Parties**

The findings and opinions conveyed in this report are based on information obtained from a variety of sources, including that from previous Site investigations and chemical testing laboratories. Constructive Evaluation Limited has assumed that such information is correct. Constructive Evaluation Limited cannot and does not guarantee the authenticity or reliability of the information it has relied upon and can accept no responsibility for inaccuracies with the data supplied by other parties.

The accuracy of the historical map extracts supplied can not be guaranteed and it should be noted that different conditions may have existed between mapping sheet editions. Therefore, there can be no certainty that all areas of contamination have been identified during the Phase 1 investigation.

#### **Definitions**

Reference to the word "contamination" in this report does not relate to the statutory definition of contaminated land under 1990 Environmental Protection Act unless otherwise stated. The definition used in this report is: "Land that contains substances that, when present in sufficient quantities or concentrations, are likely to cause harm, directly or indirectly, to man, to the environment, or on occasion to other targets" (NATO CCMS, 1985).

## 1.0 INTRODUCTION

Constructive Evaluation (CE) Limited were instructed by David Cover and Son Ltd (the Client) (EQ9891) to carry out a Site Investigation as part of a Site Condition Report at a site known as Covers Timber and Builders Merchants, Sussex House, Quarry Lane, Chichester, PO19 8PE.

The site is currently an operational timber treatment plant within the plot of a larger timber merchant, owned by Covers.

It is understood that the report is required to support an application for Part A (2) Pollution Prevention and Control in relation to proposed expansion of the timber treatment facility at the site.

The purpose of this investigation is to determine the condition of the underlying soils, groundwater and ground gas regime in order to provide a base line of any potential contamination on site. This will allow future monitoring and assessment to conclude whether the site has been impacted by the proposed timber treatment facility.

This investigation has compiled historic and public information to ascertain previous and existing land uses on and off site that could be or have been potential sources of contamination. In addition intrusive works have been completed to allow soil and ground water samples to be analysed as well as ground gas to be monitored.

## 2.0 BACKGROUND INFORMATION

The following observations are taken from public information, which can be reviewed within Appendix A.

The site is located in the south east of Chichester and is centred on a National Grid Reference (NGR) 487333, 104242 with a site area of approximately 0.08 hectares (Ha).

### 2.1 Geology

The relevant 1:50,000 British Geological Survey Map 317 (Chichester) indicates the site to be situated on superficial deposits of Alluvial Fan Deposits which is underlain by the London Clay Formation.

*Alluvial Fan Deposits* – generally described as a soft to firm unconsolidated, compressible silty clay, but contains layers of silt, sand and gravel.

*London Clay Formation* – typically consists of dark bluish to brownish grey, stiff heavily fissured Clay, containing variable amounts of fine grained sand and silt (particularly at the top and base of the deposit), weathering to orange brown clay near surface.

### 2.2 Hydrogeology

Aquifer within Superficial Deposits – Secondary (A) Aquifer – 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.

Aquifer within Bedrock Deposits – Unproductive Strata – These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

## 2.3 Walk Over Survey

### 2.3.1 Site Description

An Environmental Scientist from CE completed a walkover survey on 15th January 2015.

The site is currently an operational timber treatment plant within the plot of a larger timber merchant, owned by Covers. The site comprises a warehouse of metal and timber construction with a concrete floor slab. It is used to treat timber within several tanks of various size as well as temporarily storing both treated and untreated timber, and the treatment chemicals used. It also houses a small brick office used by the operative.

Chemicals stored on site are generally within plastic cube containers ranging from 200 – 1000 litres and include;

- Tanalith E 8000 – a water based wood preservative that contains copper and proven organic biocides
- Protim 418 – a solvent based wood perseverative containing fungicide and insecticide.
- Protim E406 – a water based wood perseverative containing biocides.

Vehicle access into the warehouse is through an open side to the north. This is generally used by the specialist vehicles on site that transport the timber.

### 2.3.2 Surroundings

The warehouse is part of a larger complex of warehouses / storage sheds, generally to the east and west, containing timber in various stages of processing. Beyond this is Covers offices and retail units to the south, external timber storage to the north.

Photographs relating to the above plan from the walkover can be reviewed within Appendix B.

### 2.3.3 Potential Sources of Contamination – Walkover Survey

On site

- Chemical preservatives
- Various treatment and transportation plant

Off site

- Various treatment and transportation plant

## 2.4 Site History

The following observations are made based on the available historic map extracts presented in Appendix C of which the most salient points have been discussed in relation to the site and surrounding environs.

Date	Observations	Potential Sources
1875-1877	The earliest available map shows the site to comprise undeveloped land with the immediate surroundings also generally undeveloped. The London Brighton & South Coast Railway line is present 80m north of the site running in an east-west direction beyond which is the town of Wickham. Alexandra Nursery is present 120m north and several tramways 300m north east.	Off site – railway, nursery
1896-1898	No significant changes on site. A laundry has been constructed 250m north and an old gravel pit is shown 140m to the north east.	-
1910-1912	The site comprises part of a wider gravel pit. Two railway sidings are present 10m north and 20m south of the site. An allotment garden is shown 120m north west.	Off site – railway sidings
1932-1933	The site comprises a railway siding with part of an associated building in the south. The immediate surrounds comprise of a railway siding within Whyke Gravel Pits. There are two tanks 5m east and 15m south and there is a building adjacent to the eastern site boundary. There is a travelling crane 30m east.	On site – railway siding Off site – railway siding, tanks
1957	The railway siding running from the site 100m north east and the two tanks are no longer present.	-
1962	The site appears unchanged. Two unspecified works are now present 100m southwest and a rifle range is located 100m southeast. A refuse tip is now located 150m east.	Off site – works and refuse tip
1971	The site remains unchanged. A timber yard is now present 20m west it includes a saw mill, electrical substation and joinery. Several industries have now been built including; a public works contractor depot 50m southwest, a car body repair works 130m southwest, a coal yard 150m west and a precision engineering works has also been constructed 150m north west. The nursery to the north has been redeveloped into housing. A disused gravel pit 130m south is now labelled as Whyke Lake.	Off site - timbers yard, depot, car works, coal yard and precision engineering works

Date	Observations	Potential Sources
1974	The on site siding railway is no longer connected to the main railway. Only the 1:10,000 scale map is available for this period and it shows a depot 100m northeast which suggests that the previously noted refuse tip has been filled in / capped. A number of unspecified buildings have been constructed 50m southeast of the site considered to be of industrial use.	Off site - in-filled land fill, depot and unspecified works.
1978-1994	The siding railway is no longer on the site and a buildings has been constructed to the immediate east and another 20m west. The immediate surrounds are now labelled as an Industrial Estate.	Off site – additional industrial buildings.
2002-2014	The site is now occupied by a building considered to be the existing warehouse unit for timber treatment. No significant changes off site are noted.	On site – timber treatment.

2.4.1 *Potential Contamination Sources - Historical*

On Site:

- Potential Made Ground from redevelopment
- Railway infrastructure
- Timber treatment

Off Site:

- Railway
- Nursery
- Tanks
- Various unspecified works
- Refuse tip
- Timber yard
- Car repair works
- Coal yard
- Precision engineering works
- In filled land fill



## 2.5 Information on Public Record

The following information has been obtained from public archive via the data supplier Centremaps or by direct application. The full Centremaps report is presented in Appendix A.

Public Record Information	Potential Sources
<u>Artificial/ Made Ground</u> – Within 500m there are seven records, the first record is located on site relating to in filled ground. The next record is located 139m south west relating to worked ground (undivided).	On site – in filled ground
<u>Historical Surface Ground Working Features</u> – There are thirty four records within 250m, the first feature is on site relating to a gravel pit dated 1909. The closest off site record is situated 25m north east relating to unspecified ground workings also dated 1909. Within 100m there are five further features.	On site – gravel pit Off site – unspecified ground workings
<u>Current Ground Workings</u> – Within 1000m there are ten records. The closest is located 74m west for sand and gravel extraction. The next is 253m north east, also for sand and gravel extraction.	Off site – sand and gravel abstraction
<u>Non-Coal Mining</u> – Within 1000m there is one record located 543m south west relating to rare and localised small scale mining of chalk.	-
<u>Historic Railway and Tunnel Features</u> – Within 250m there are forty two records. The first eleven records are located on site relating to railway and tramway sidings dated 1909 to 1972. The next two records are located 3m west and east also for railway sidings dated 1975 and 1933.	On site – railway/ tramway sidings Off site – railway sidings
<u>Active Railways</u> – There are four records within 250m, the closet is 78m north for a multi-track railway.	-
<u>Part A(2) and Part B Activities</u> – There are four records within 500m, the closest record is located 62m south west relating Timber Processes at Covers.	Off site – timber processes
<u>National Incidents Recording System, List 2</u> – Eight incidents are recorded within 500m. The closest is located 209m south east and is recorded as no impact to water, land and air.	-
<u>Environment Agency Licensed Landfill Sites</u> – Within 1500m there are seventeen sites, the closest is 35m east relating to inert, commercial and household waste. The next record is 172m south west for inert and industrial waste.	Off site – landfill sites
<u>BSC/DoE Non-Operational Landfill Sites</u> – There are two records within 1500m, the closest is 1377m north relating to Postfield Gravel Pit.	-

Public Record Information	Potential Sources																		
<u>Local Authority Landfill Sites</u> – Within 1500m there are eight sites, the closest two are located 132m and 133m east for refuse tips dates 1961 and 1962 respectively.	Off site – landfill sites																		
<u>Waste Treatment, Transfer or Disposal Sites</u> – There are five records within 500m, all records are located 216m west relating to a car breakers yard.	-																		
<u>Environment Agency Licensed Waste Sites</u> – Within 1500m there are eleven records, the closest three records are 122m west relating to a metal recycling site.	Off site – landfill site																		
<u>Potentially Contaminative Industrial Sites</u> – There are thirty two records within 250m, the most pertinent are listed in the table below: <table border="1" data-bbox="352 853 1070 1077"> <thead> <tr> <th>Distance</th> <th>Direction</th> <th>Activity</th> </tr> </thead> <tbody> <tr> <td>6m</td> <td>South west</td> <td>Hoppers and silos</td> </tr> <tr> <td>37m</td> <td>East</td> <td>Substation</td> </tr> <tr> <td>37m</td> <td>West</td> <td>Substation</td> </tr> <tr> <td>82m</td> <td>West</td> <td>Distribution and haulage</td> </tr> <tr> <td>97m</td> <td>North west</td> <td>Construction supplies</td> </tr> </tbody> </table>	Distance	Direction	Activity	6m	South west	Hoppers and silos	37m	East	Substation	37m	West	Substation	82m	West	Distribution and haulage	97m	North west	Construction supplies	Off site – hoppers and silos, substation, distribution and haulage, construction supplies
Distance	Direction	Activity																	
6m	South west	Hoppers and silos																	
37m	East	Substation																	
37m	West	Substation																	
82m	West	Distribution and haulage																	
97m	North west	Construction supplies																	
<u>Nitrate Vulnerable Zone (NVZ)</u> – Within 2000m there is one NVZ located 613m north west.	-																		

### 2.5.1 Potential Contamination Sources – Public Information

#### On Site:

- In filled ground
- Gravel pit
- Railway/ tramway sidings

#### Off Site:

- Unspecified ground workings
- Sand and gravel abstraction
- Railway siding
- Timber processes
- Landfill sites
- Hoppers and silos
- Substation
- Distribution and haulage
- Construction supplies

## 2.6 Sources

### 2.6.1 On Site

- The potential for on site Made Ground from infilling of gravel pits, which can present a risk from ground gas generation as well as the possibility of common contaminants such as heavy metals, asbestos and/or hydrocarbons.
- The historic railway siding on the site which is a potential risk from heavy metals and hydrocarbons.
- Timber treatment machines within the site which is likely to contain concentrated preservatives as well as the storage of different types of the preservatives on site.

### 2.6.2 Off Site

- Given the significant number of off site sources identified of which many are associated with similar contaminants it is considered that these should be grouped together in presenting a background risk due to the industrial setting of the site. Common associated contaminants for the various works, railway infrastructure, depots and timber yard include heavy metals, various hydrocarbons, phenols, cyanide, and arsenic.
- There is considered to be a source of ground gas given the various historic ground workings and landfills within close proximity to the site.

### 3.0 FIELDWORKS

The following intrusive works were carried out on the 15th January 2015 supervised by an Environmental Scientist from CE. The SI was undertaken in accordance with the scope of works agreed with our Client and in relation to statutory guidance including BS5930: 1999 Code of Practice for Site Investigations (Amendment 2: 2010) and BS10175: 2011+A1: 2013 Investigation of Potentially Contaminated Sites: Code of Practice.

#### 3.1 Soils

- Prior to any excavations taking place a Cable Avoidance Tool (CAT) was used to check for the position of any underlying electrical services.
- A total of three window sample boreholes (WS1, WS2 and WS3) were completed by means of a tracked window sampling rig. These were completed to a maximum depth of 4.00mbgl.
- All locations were logged, groundwater conditions and visual or olfactory evidence of contamination noted, and representative soil samples removed in accordance with current protocol for contamination parameters.
- Upon completion all positions were installed with monitoring equipment comprising 50mm diameter slotted and plain pipe surrounded by gravel filter packs and a bentonite seals in order to enable future gas and groundwater level monitoring to be conducted. The positions were completed with a gas tap and finished at the surface with a cast iron lockable stopcock cover
- All the investigative positions were subsequently backfilled with arisings compacted and reinstated at the surface in accordance with existing ground conditions.

The site layout plan indicating the position of the test location is provided in Appendix D, with photographs taken during the investigation in Appendix B.

#### 3.2 Gas

The following monitoring regime was undertaken on the 22<sup>nd</sup> (MR1), 29<sup>th</sup> (MR2) January and 5<sup>th</sup> (MR3) February 2015 by an Environmental Scientist from CE. The boreholes were left for a suitable period after the site works to equilibrate the soil and groundwater conditions. Gas monitoring was completed in accordance with CIRIA C665 *Assessing risks posed by hazardous ground gases to buildings*.

- WS1, WS2 and WS3 were monitored for the presence of soil gases including oxygen, carbon dioxide, methane and hydrogen sulphide. In addition gas flow rates, downhole pressure and atmospheric pressure were also measured using a GA2000+ gas analyser. Gas monitoring was completed over a three minute period recording the steady and peak concentrations of each gas.

#### 3.3 Groundwater

Subsequent to gas monitoring completed during each round, groundwater monitoring was completed on 22<sup>nd</sup>, 29<sup>th</sup> January and 5<sup>th</sup> February 2015 in accordance with BS6068: 1997 *Water Quality. Sampling. Guidance on Sampling of Groundwater*.

- WS1 and WS2 were sampled for groundwater, WS3 was dry during all monitoring rounds and as such could not be sampled. During monitoring WS2 was noted to have a strong hydrocarbon odour.

#### **4.0 GROUND CONDITIONS**

##### **4.1 Soils**

The following strata conditions were encountered during the intrusive works:

Hardstanding – Concrete was present at all locations and recorded from ground level to a depth of between 0.10mbgl to 0.15mbgl.

Made Ground – The material encountered beneath the hardstanding in all locations was described as Made Ground soils comprising of clayey sandy gravel fill material with gravel comprised of brick, glass, flint and concrete. This material was described to a maximum depth of 0.85mbgl.

Sandy Gravel – The initial natural soils is found in all three positions were described as brown sandy Gravel with varying amounts of silt and clay as the minor constituent. This recorded at a minimum of 0.50mbgl within WS2 and to a maximum of 3.80mbgl within WS1. It was interspersed with layers of clay (below) and collectively these soils are considered representative of Alluvial Fan Deposits.

Clay – Recorded at various depths as layers within the gravels in all positions at a maximum thickness of 0.70m within WS3. Several layers were noted to contain flint gravels.

Sand – Encountered within the base of all positions was light brown fine Sand. This recorded at a minimum depth of 3.50mbgl and confirmed to a maximum drilled depth of 4.00mbgl.

Please refer to the stratigraphic logs contained within Appendix E for a more detailed description.

##### **4.2 Groundwater**

Groundwater strikes were recorded in two of the window samples, it was recorded at 1.4mbgl within WS1 and 2.2mbgl within WS2.

##### **4.3 Visual and Olfactory Observations**

Within both WS2 and WS3 soils were noted to have a strong hydrocarbon odour and black sheen within the both the gravels and clay below 1.90mbgl, however, the sands at the base showed no evidence of contamination.

#### **5.0 CONTAMINATION TESTING**

Selected soil samples have been submitted for analysis.

##### **5.1 Soils**

Ten samples were submitted to QTS Environmental, a UKAS and MCERTS accredited laboratory testing facility, for a screen of contamination testing from both the Made Ground and underlying natural soils.

The testing completed comprised of a focused suite of heavy metals and hydrocarbons including speciated Total Petrol Hydrocarbons (TPH CWG aromatic/aliphatic split), BTEX, MTBE and speciated Polycyclic Aromatic Hydrocarbons (PAH), as well as a background suite of pH, SOM, total cyanide, and total phenols.

In addition, samples of Made Ground were submitted for an asbestos screen.

To provide a degree of context the results of this laboratory testing have been compared to the available Soil Guideline Values (SGVs) as well as the LQM guideline values for inorganic and organic contaminants in soils.

Comparisons were made against generic assessment criteria for the 'commercial' land use setting based on the current and proposed end use of the site.

A copy of soil laboratory certificates for the contamination testing can be reviewed within Appendix F.

## 5.2 Groundwater Testing

Groundwater samples retrieved from WS1 and WS2 were also submitted to QTS Environmental.

The samples were submitted for a similar suite of testing as that of the soils, comprising of heavy metals, speciated TPH, total cyanide, total phenols, and speciated PAHs. One round of samples from WS2 was also analysed for Semi volatile Organic Carbons (SVOCs).

Where possible comparisons have been made against the conservative UK Drinking Water Standards (DWS) and the Environmental Quality Standards (EQS) Freshwater guidelines

A copy of ground water laboratory certificates for the contamination testing can be reviewed within Appendix G.

## 5.3 Soil Results

All ten of the samples analysed had concentrations below the relevant and available SGV and LQM guideline values. However several results returned concentrations elevated above what is considered to be a background level, these are detailed in the table below;

Determinand	Window Sample Position					
	WS1	WS1	WS2	WS2	WS3	WS3
	0.40m	2.60m	0.20m	2.50m	1.95m	2.75m
Lead	-	118mg/kg	-	-	-	-
TPH >c5-c35	-		378mg/kg	341mg/kg	103mg/kg	245mg/kg
Benzene	58ug/kg	-	20ug/kg	-	-	-
Toluene	47ug/kg	-	24ug/kg	-	-	-
Ethylbenzene	-	-	262ug/kg	-	-	-
P & M Xylene	32ug/kg	-	315ug/kg	-	-	98ug/kg
O Xylene	7ug/kg	-		-	-	-

## 5.4 Groundwater Results

Results from all three rounds from WS1 returned concentrations below the relevant and available guidelines and as such is not considered to have been impacted by the identified potential sources.

The results from WS2 returned elevated results above the LoD for various organic determinands shown in the table below;

Determinand	WS2 Monitoring Round			Guideline Threshold	
	MR1	MR2	MR3	DWS	EQS*
Naphthalene	<0.01ug/l	0.19ug/l	0.21ug/l	n/a	10ug/l
TPH >c5-c35	1835ug/l	1284ug/l	3054ug/l	10ug/l	n/a
Phenol	-	4.2ug/l	-	0.5ug/l	30ug/l
0-Cresol	-	1.1ug/l	-	n/a	n/a
2,4-Dichlorophenol	-	0.5ug/l	-	n/a	n/a
p-Cresol	-	0.8ug/l	-	0.5ug/l	30ug/l
2-Methylnaphthalene	-	0.6ug/l	-	n/a	n/a

## 5.5 Gas Results

Methane concentrations were recorded at a maximum of 0.2% within WS3 (MR1) and WS1 (MR2). The Lower Explosive Limit (LEL) was recorded at a maximum value from WS3 of 3% (MR1).

VOC testing returned a maximum value of 102ppm in WS3 (MR1) however generally results ranged from 0.0ppm to 13.9ppm.

Within all positions during all rounds, values of hydrogen sulphide and carbon monoxide were recorded below the limit of detection (LoD) and hydrogen was recorded as being 'Low'.

Carbon dioxide concentrations were recorded at a maximum of 4.6% in WS1 (MR2) with the remaining results all below 1%.

Oxygen concentrations were noted to be variable over the monitoring period with values ranging from 13.4% (WS1, MR2) to 21.7% (WS3, MR3).

Flow rates were recorded at a maximum of 1.1l/hr within WS1 (MR3) and a minimum of 0.1 l/hr within several positions also from within WS3 (MR2). Atmospheric pressure was noted to be increasing slightly during MR1 and decreasing during MR2 and stable during MR3.

To contextualise the results they have been assessed in accordance with CIRIA Document C665 *Assessing risks posed by hazardous ground gases to buildings* (2007).

Given that MR2 was completed during decreasing atmospheric pressure with a pressure of 979mb this is considered to be the worst case scenario of the monitoring program. As such the carbon dioxide concentration, which is noted to be the highest result, will be utilised to calculate a Gas Screening Value (GSV). This value has been subsequently compared against CIRIA values supplied within CIRIA Document C665.

$$(\text{Worst case CO}_2 \text{ concentration} / 100) \times \text{worst case flow rate} = \text{GSV}$$

$$(4.6\% / 100) \times 1.1\text{l/hr} = \underline{0.051 \text{ l/hr}}$$

Therefore, the highest calculated GSV falls into Characteristic Situation 1 classified as 'Very Low Risk' based on the result being <0.07l/hr as given by CIRIA C665.

The gas monitoring sheets are presented within Appendix H.

## 6.0 CONTAMINATION CONCLUSIONS

Given the extensive potential sources identified within close proximity to the site it is considered that there has been minimal impact on the underlying soils and ground gas regime. However as the results show elevated TPH has been recorded within WS2 albeit when compared to relatively conservative guidance. It is also noted that that the impacted groundwater is confined to WS2 suggesting that it is localised. In addition the underlying London Clay Formation and clay content within the Alluvial Fan Deposits is likely to restrict migration of impacted groundwater.

It is not considered feasible to identify a single source of the TPH recorded within the groundwater given the number of sources identified and that TPH could be assigned to many of these. However, it does not appear to be connected to the timber treatment chemicals given that these are noted to be solvent or water based.

In response to the construction of the proposed expansion of the timber treatment facility a program of future monitoring and testing should be completed in order to establish whether it has caused an impact on the site. This should involve the protection of the existing borehole installations to allow ground water and ground gas monitoring in line with this investigation.

This should be completed every five years with the results forwarded to the Environment Agency for review and in order to create a data profile for the site which will allow any impact caused by activities to be determined.



## **APPENDICES**

Their contents are listed below:

Appendix A – Public Information

Appendix B – Photographs

Appendix C – Historic Maps

Appendix D – Site Plan

Appendix E – Stratigraphic Logs

Appendix F – Soil Contamination Testing

Appendix G – Groundwater Contamination Testing

Appendix H – Monitoring Sheets

# **APPENDIX A**

## **Public Information**

CENTREMAPS  
Brockamin House,  
Worcester, WR6 5JU

Report Reference: CMAPS-CM-382999-26342-  
031214GEO

Your Reference: 26342

Report Date 3 Dec 2014

Report Delivery Method: Email - pdf

## GroundSure Geoinsight

Address: ,

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 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.  
GroundSure GeoInsight



# GroundSure GeoInsight

Address: ,  
Date: 3 Dec 2014  
Reference: CMAPS-CM-382999-26342-031214GEO  
Client: CENTREMAPS

NW N NE



W E

SW S SE

Aerial Photograph Capture date: 03-May-2013  
Grid Reference: 487333,104242  
Site Size: 0.08ha

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# Overview of Findings

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

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

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

## Section 1:Geology

1.1 Artificial Ground	1.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	Yes
	1.1.2 Are there any records relating to permeability of artificial ground within the study site* boundary?	Yes
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 not in a Radon Affected Area, as less than 1% of properties are above the Action Level
	1.4.2 Is the property in an area where Radon Protection Measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary

## Section 2:Ground Workings

	On-site	0-50m	51-250	251-500	501-1000
2.1 Historical Surface Ground Working Features from Small Scale Mapping	1	2	31	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	1	3	6

## 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	0	0	0	0	0
3.4 Non-Coal Mining	0	0	0	0	1
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	Negligible				
4.2 Landslides	Very Low				
4.3 Ground Dissolution of Soluble Rocks	Negligible				
4.4 Compressible Deposits	Moderate				
4.5 Collapsible Deposits	Negligible				
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	0	4		
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	11	8	23	Not Searched	
7.3 Historical Railways	0	0	0	Not Searched	
7.4 Active Railways	0	0	4	Not Searched	

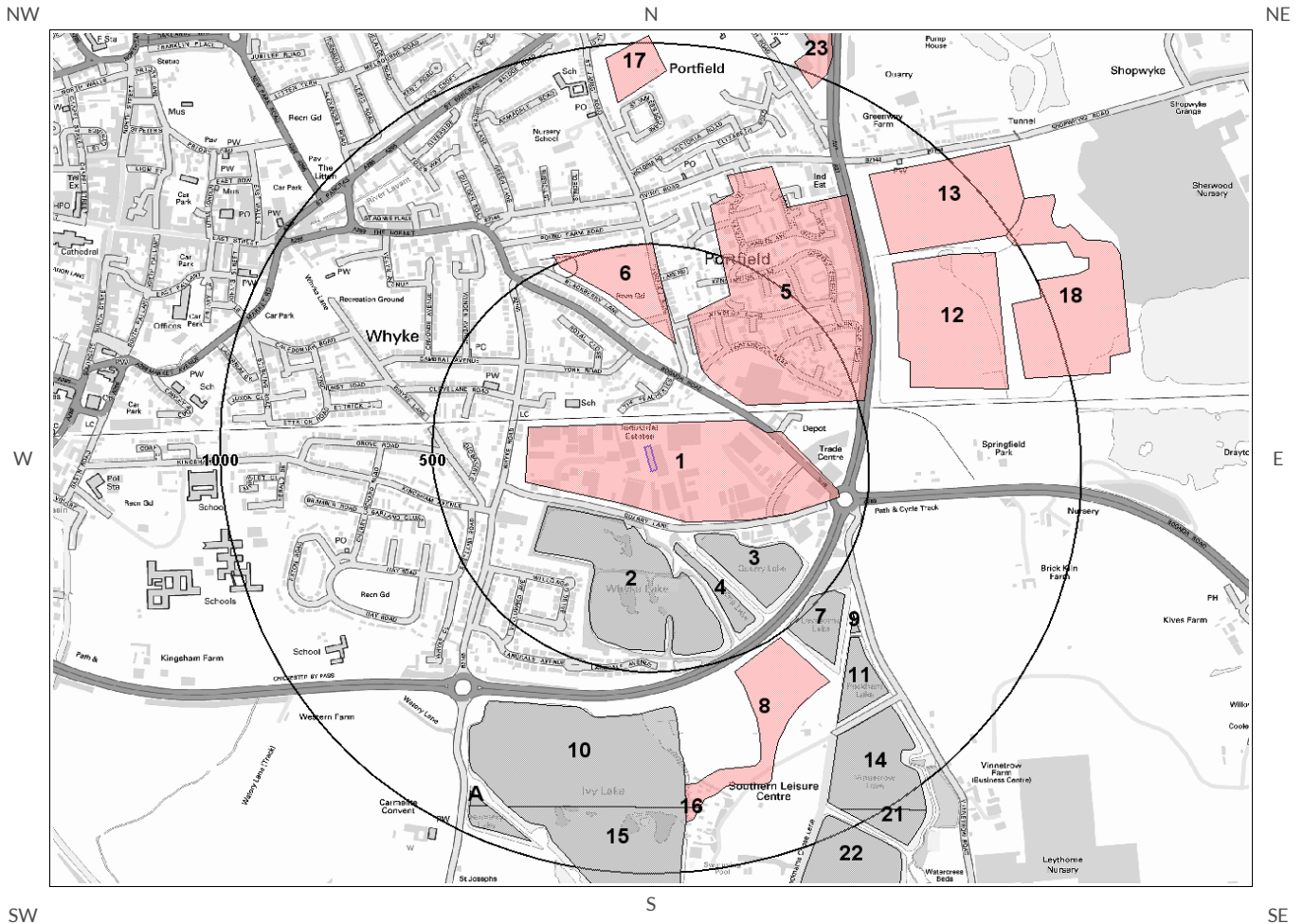


Section 7:Railways and Tunnels	On-site	0-50m	51-250	251-500
7.5 Railway Projects	0	0	0	0

---

# 1 Geology




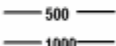




## 1.1 Artificial Ground Map



Artificial Ground Legend



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



# 1 Geology

## 1.1 Artificial Ground

### 1.1.1 Artificial/ Made Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:317

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

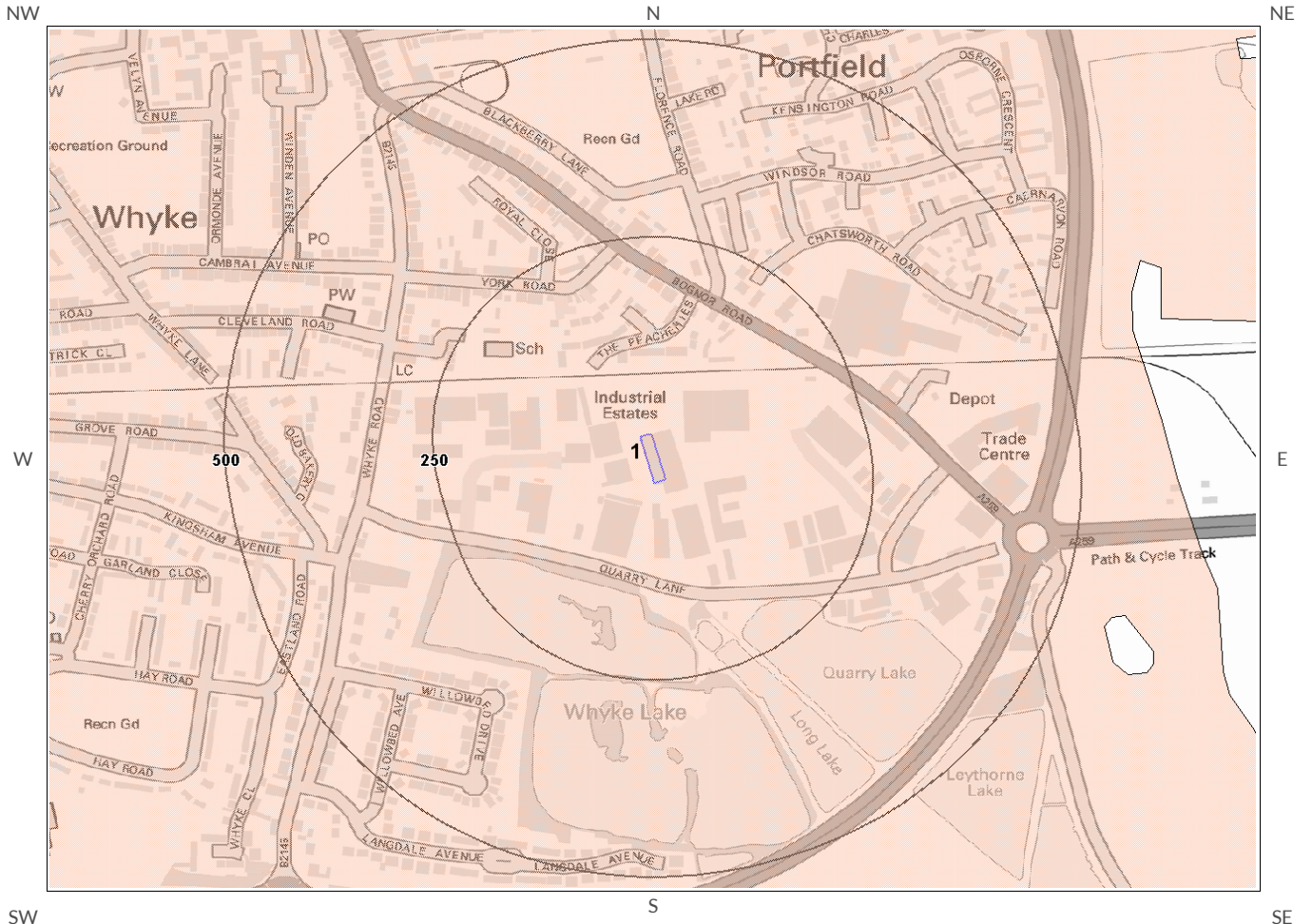
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	WMGR-MGRD	INFILLED GROUND	ARTIFICIAL DEPOSIT
2	139.0	SW	WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID
3	186.0	SE	WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID
4	187.0	S	WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID
5	217.0	NE	WMGR-MGRD	INFILLED GROUND	ARTIFICIAL DEPOSIT
6	260.0	N	WMGR-MGRD	INFILLED GROUND	ARTIFICIAL DEPOSIT
7	481.0	SE	WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID

### 1.1.2 Permeability of Artificial Ground

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

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

# 1.2 Superficial Deposits and Landslips Map



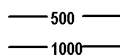
Superficial Deposits and Landslips Legend



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Site Outline



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	ALF-GSSC	ALLUVIAL FAN DEPOSITS	GRAVEL, SAND, SILT AND CLAY

## 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	Low

## 1.2.3 Landslip

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

Database searched and no data found.

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

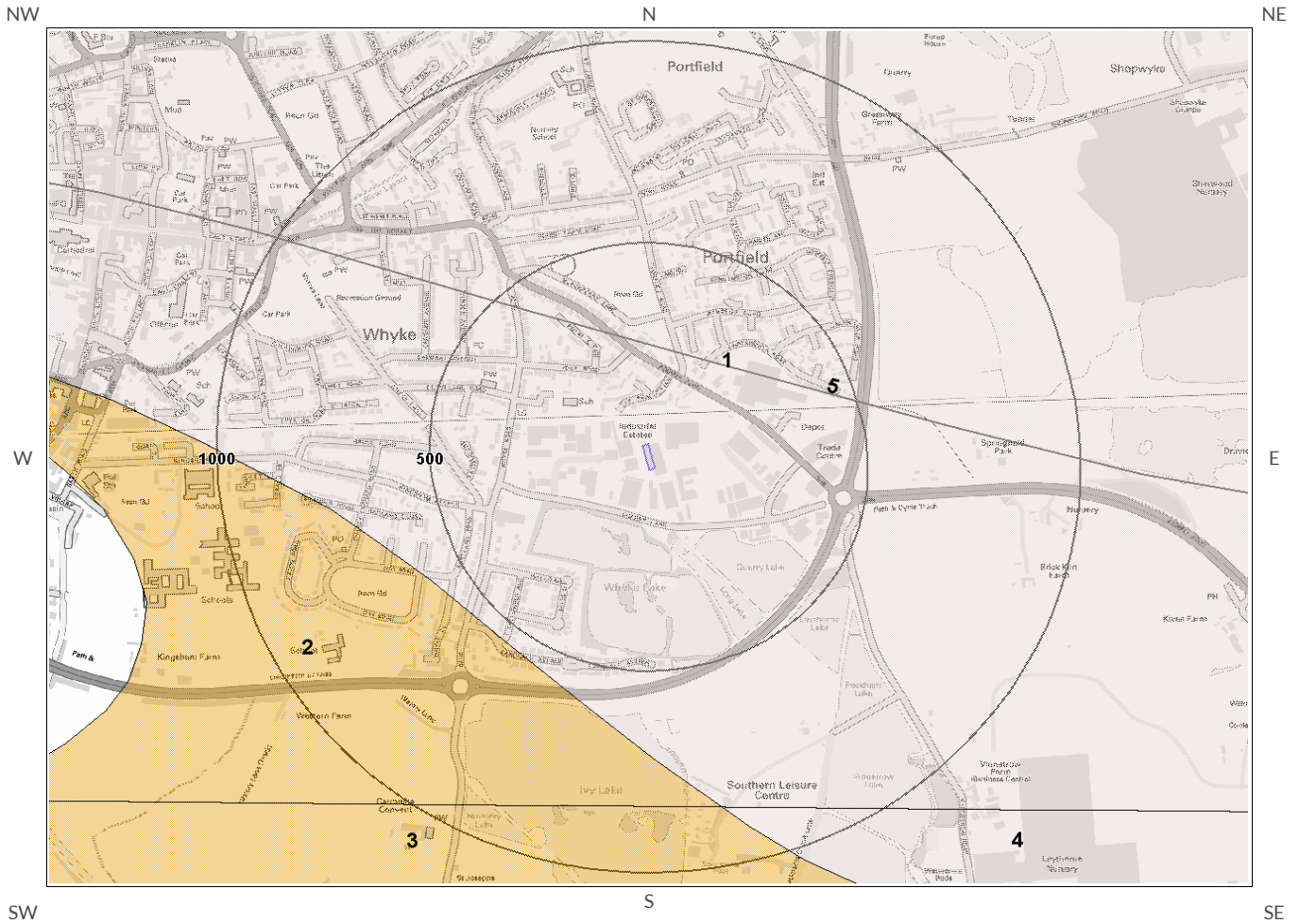
## 1.2.4 Landslip Permeability

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

Database searched and no data found.

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

# 1.3 Bedrock and Faults Map



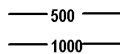
Bedrock and Faults Legend



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Site Outline



Search Buffers (m)

# 1.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:317

## 1.3.1 Bedrock/ Solid Geology

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	LC-CLSS	London Clay Formation - Clay, Silt And Sand	Eocene

## 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	Mixed	Moderate	Very 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
5	239.0	N	FOLD_AXIS	Axial plane trace of major syncline

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

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

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

# 1.4 Radon Data

## 1.4.1 Radon Affected Areas

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

---

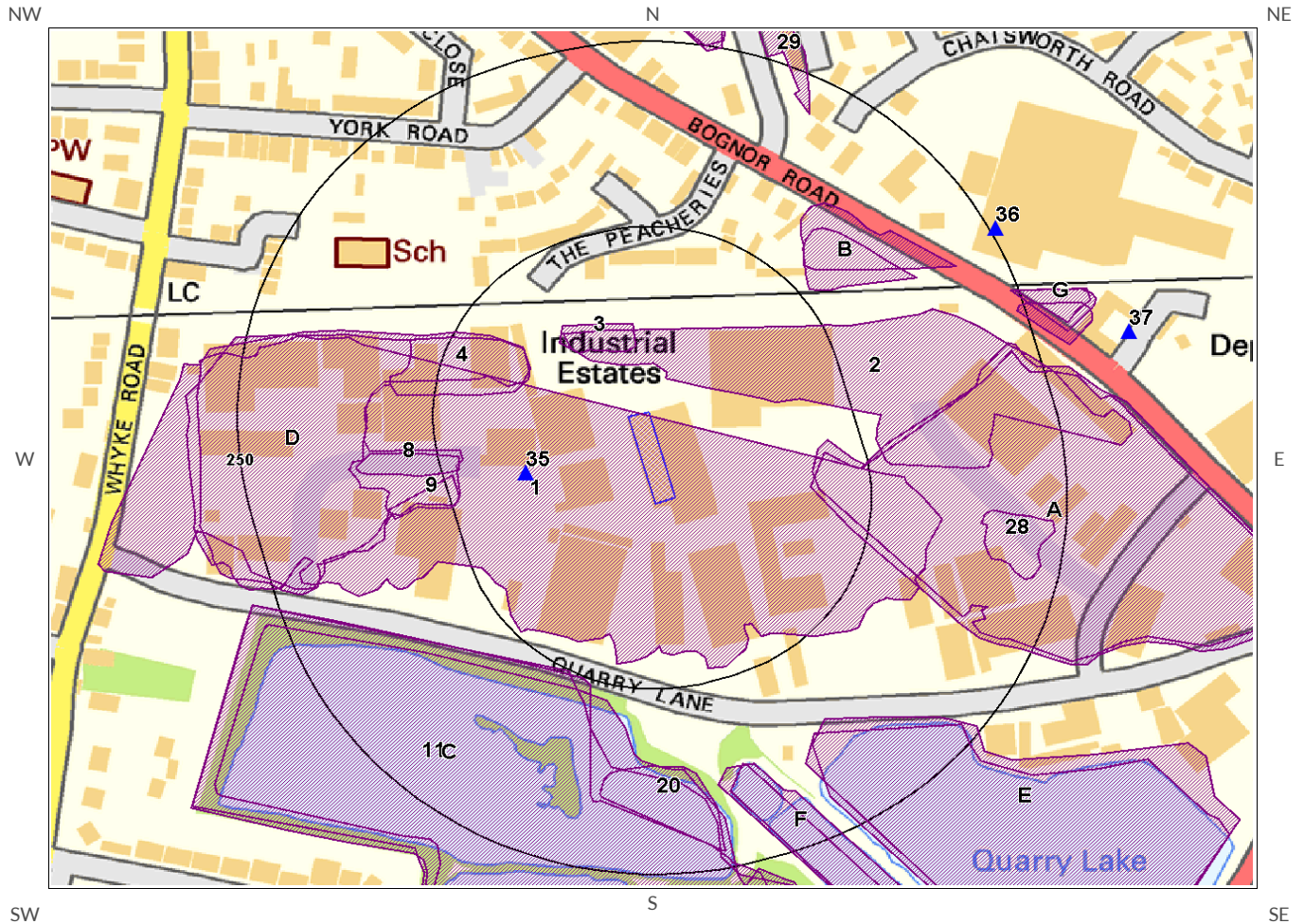
## 1.4.2 Radon Protection

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

---




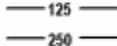



# 2 Ground Workings Map



Ground Workings Legend



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-  Site Outline
-  Search Buffers (m)
-  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
1	0.0	On Site	487277 104213	Gravel Pit	1909
2	25.0	NE	487432 104283	Unspecified Ground Workings	1909
3	43.0	N	487298 104322	Unspecified Pit	1938
4	69.0	W	487210 104304	Gravel Pits	1938
5D	70.0	NW	487150 104240	Gravel Pits	1957
6A	87.0	E	487595 104208	Water Body	1938
7A	89.0	E	487596 104212	Water Body	1957
8	111.0	W	487177 104237	Unspecified Heap	1938
9	119.0	W	487187 104216	Gravel Pits	1938
10C	126.0	SW	487281 103945	Water Body	1957
11	126.0	S	487236 103943	Water Body	1938
12B	132.0	NE	487466 104376	Unspecified Pit	1938
13B	132.0	NE	487466 104376	Unspecified Pit	1909
14C	135.0	S	487285 103941	Lake	1973
15C	135.0	S	487285 103941	Lake	1994
16C	135.0	S	487285 103941	Lake	1978
17B	140.0	NE	487467 104391	Old Gravel Pit	1896
18D	145.0	W	487111 104238	Water Body	1938
19E	177.0	SE	487572 103964	Water Body	1957
20	177.0	S	487340 104006	Unspecified Pit	1938
21E	182.0	SE	487567 103965	Lake	1994

ID	Distance (m)	Direction	NGR	Use	Date
22E	182.0	SE	487567 103965	Lake	1973
23E	182.0	SE	487567 103965	Lake	1978
24F	184.0	S	487485 103919	Lake	1978
25F	184.0	S	487485 103919	Lake	1973
26F	184.0	S	487485 103919	Lake	1994
27F	184.0	S	487487 103918	Water Body	1957
28	196.0	E	487567 104183	Gravel Pit	1909
29	225.0	NE	487426 104509	Ponds	1875
30G	245.0	E	487589 104342	Pond	1957
31G	245.0	E	487590 104333	Pond	1909
32H	246.0	N	487224 104647	Gravel Pit	1957
33G	248.0	E	487589 104345	Pond	1973
34H	249.0	N	487222 104649	Unspecified Pit	1938

## 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.

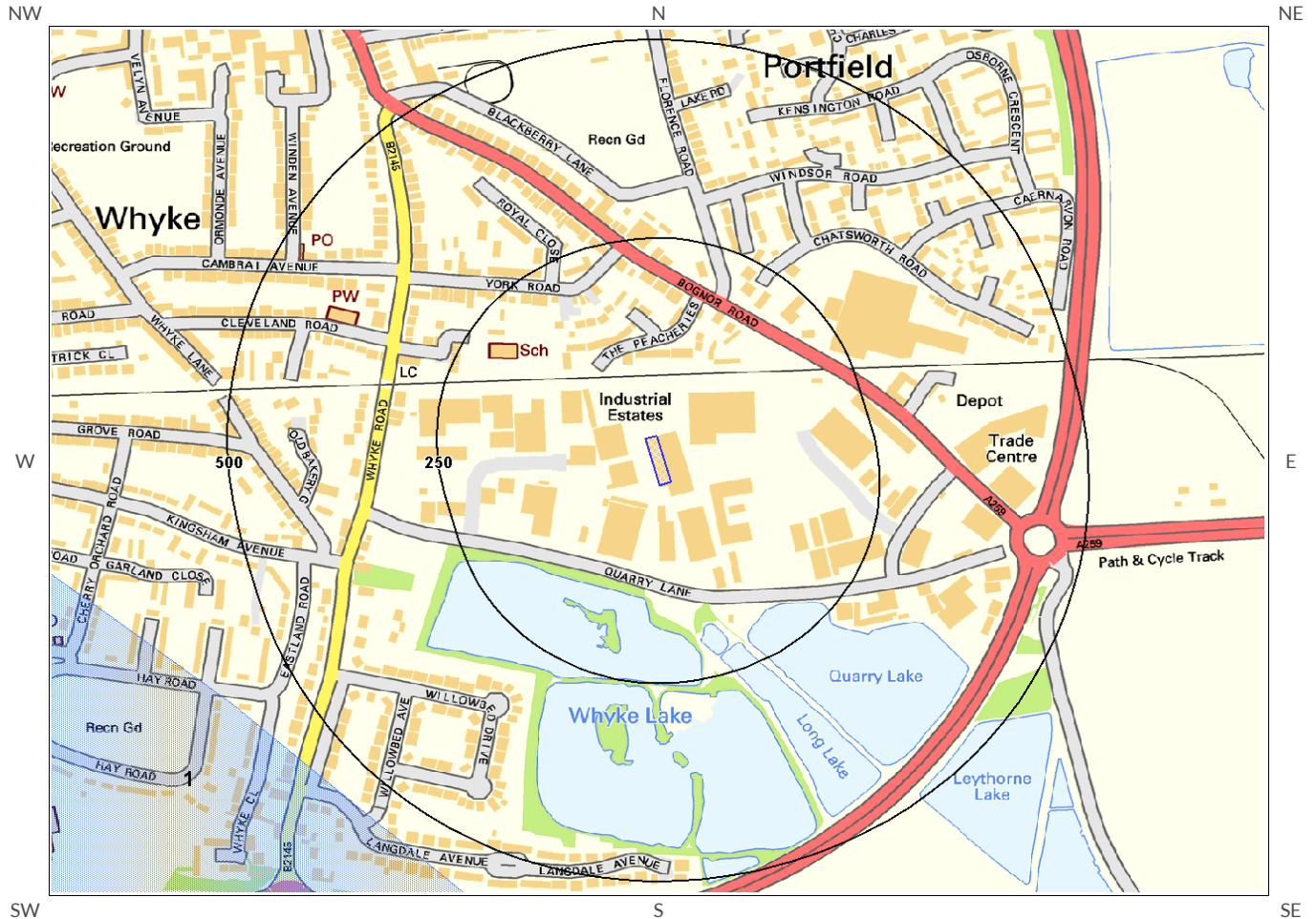
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

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
35	74.0	W	487252 104232	Sand & Gravel	Whyke Gravel Pits	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
36	253.0	NE	487552 104397	Sand & Gravel	Portfield Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
37	309.0	E	487637 104327	Sand & Gravel	Portfield Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	481.0	N	487414 104747	Sand & Gravel	Portfield Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	637.0	NE	487795 104710	Sand & Gravel	Portfield Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	717.0	NE	487775 104836	Sand & Gravel	Portfield Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	750.0	NE	487734 104906	Sand & Gravel	Portfield Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	836.0	E	488165 104036	Clay & Shale	Wickham Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	941.0	N	487319 105214	Sand & Gravel	Portfield Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	994.0	N	487232 105262	Sand & Gravel	Portfield Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

# 3 Mining, Extraction & Natural Cavities Map



Mining, Extraction and Natural Cavities Legend



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# 3 Mining, Extraction & Natural Cavities

## 3.1 Historical Mining

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

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

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

---

## 3.4 Non-Coal Mining

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

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

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

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	543.0	SW	Not available	Chalk	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

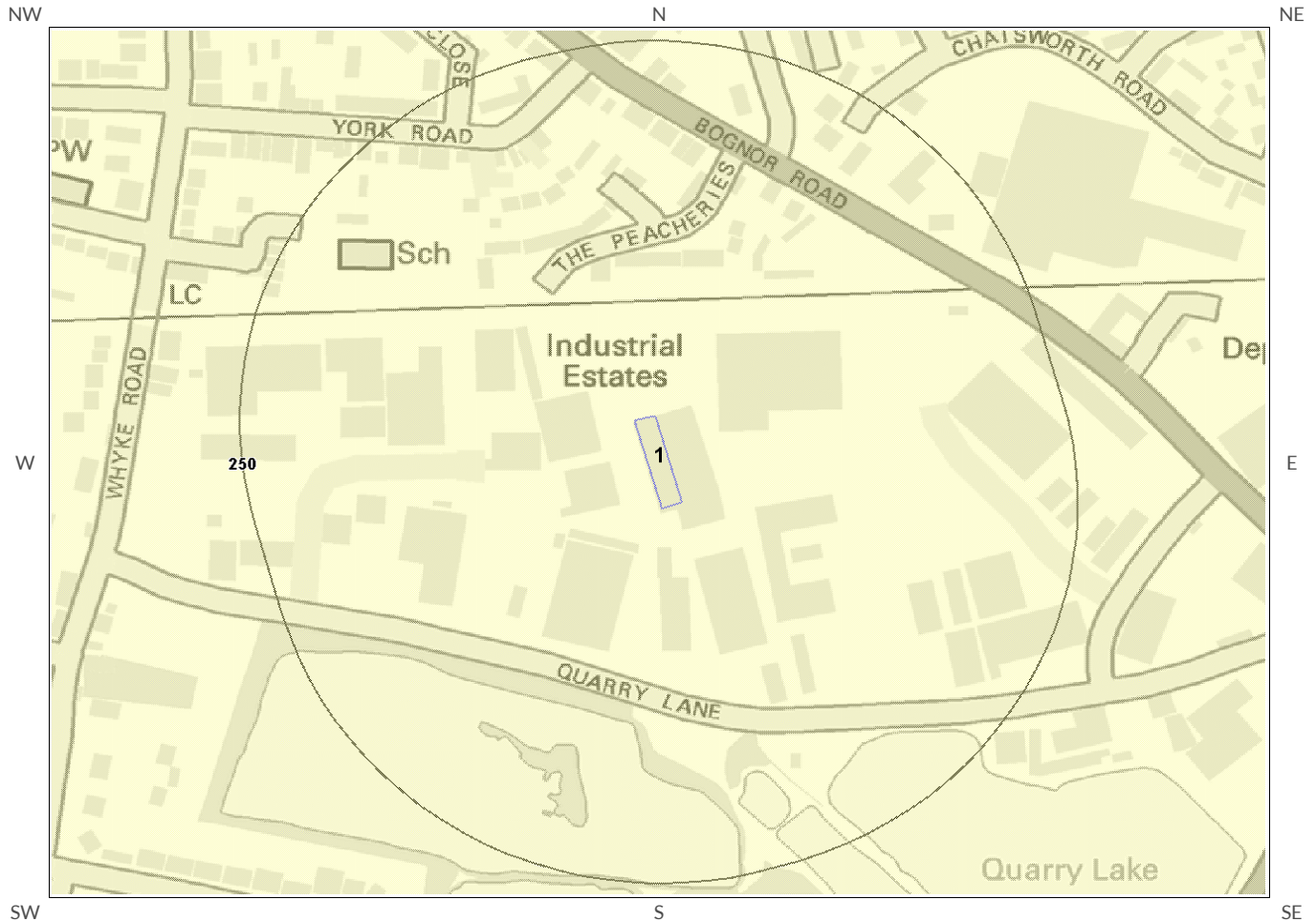
Database searched and no data found.

---



# 4 Natural Ground Subsidence

## 4.1 Shrink-Swell Clay Map



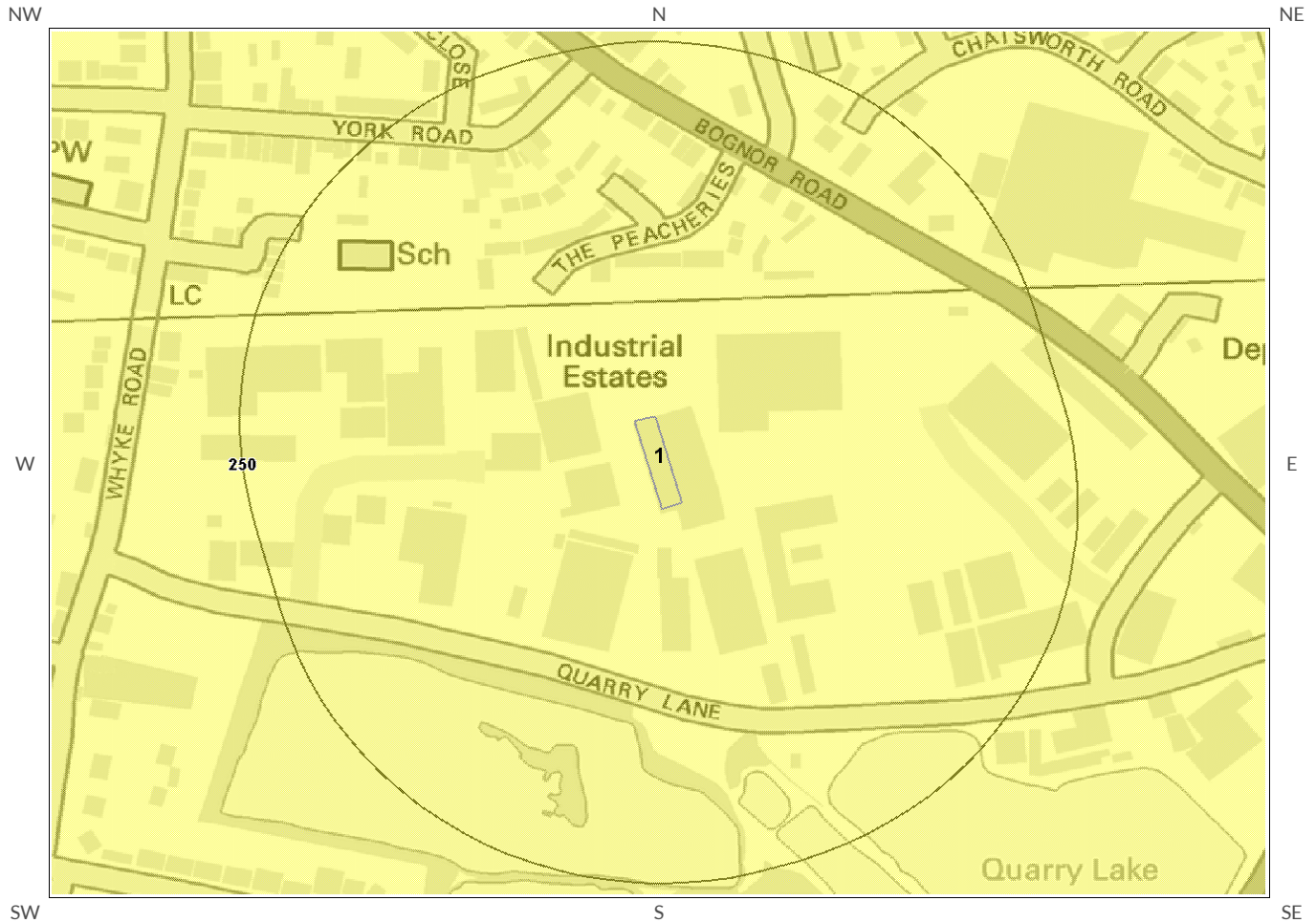
Shrink Swell Clay Legend



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# 4.2 Landslides Map



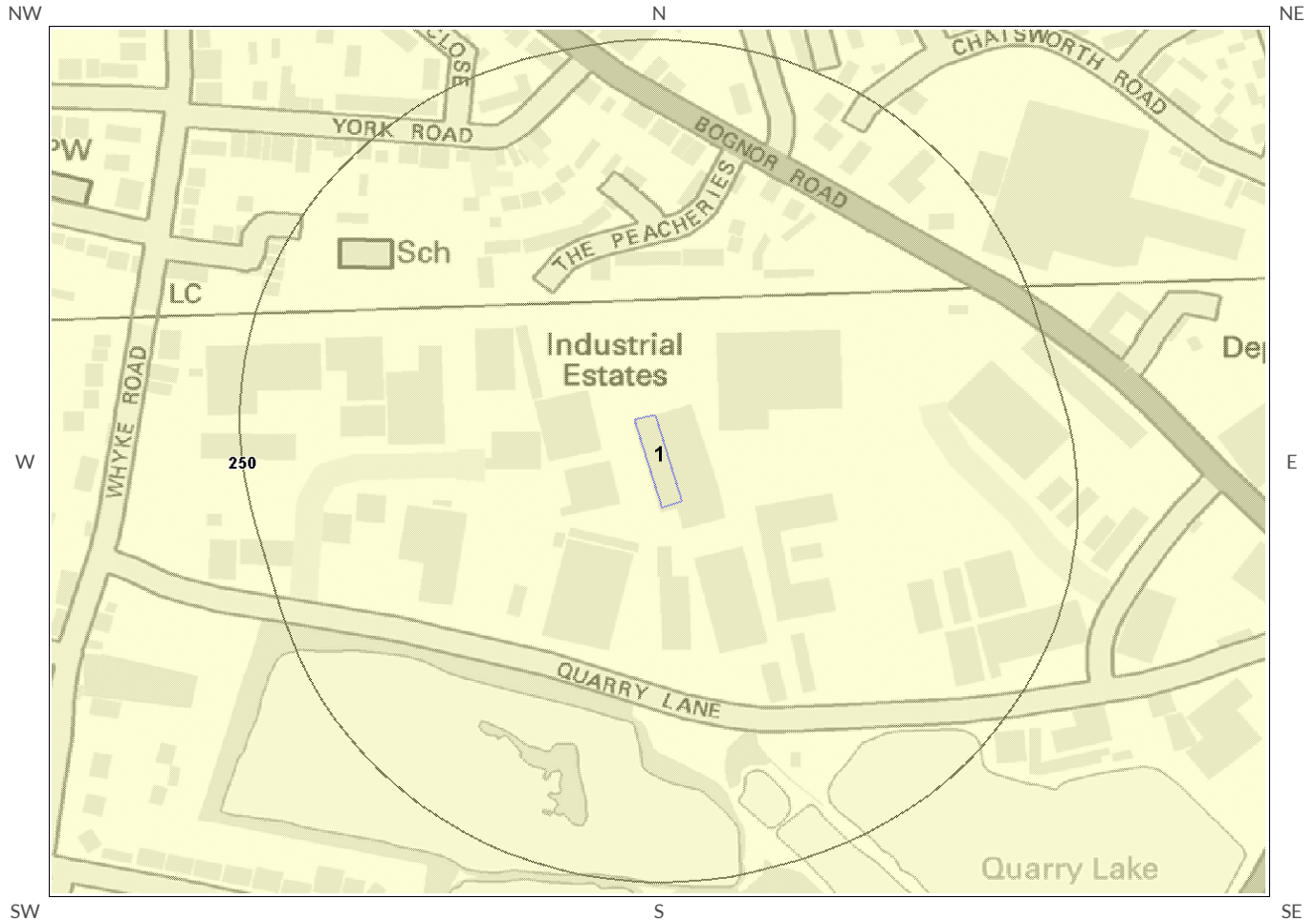
Landslides Legend



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# 4.3 Ground Dissolution Soluble Rocks Map



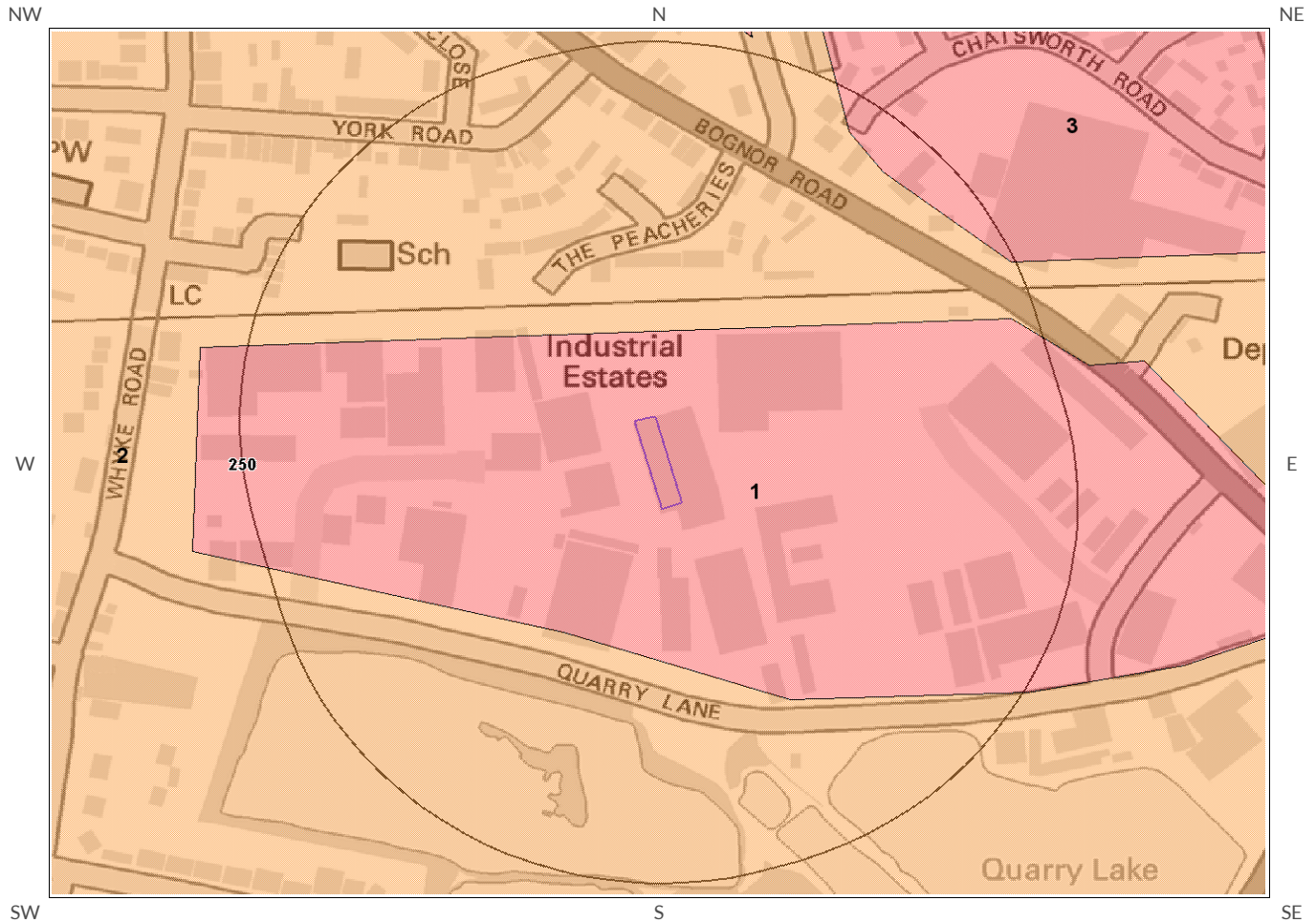
Ground Dissolution Soluble Rocks Legend



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# 4.4 Compressible Deposits Map



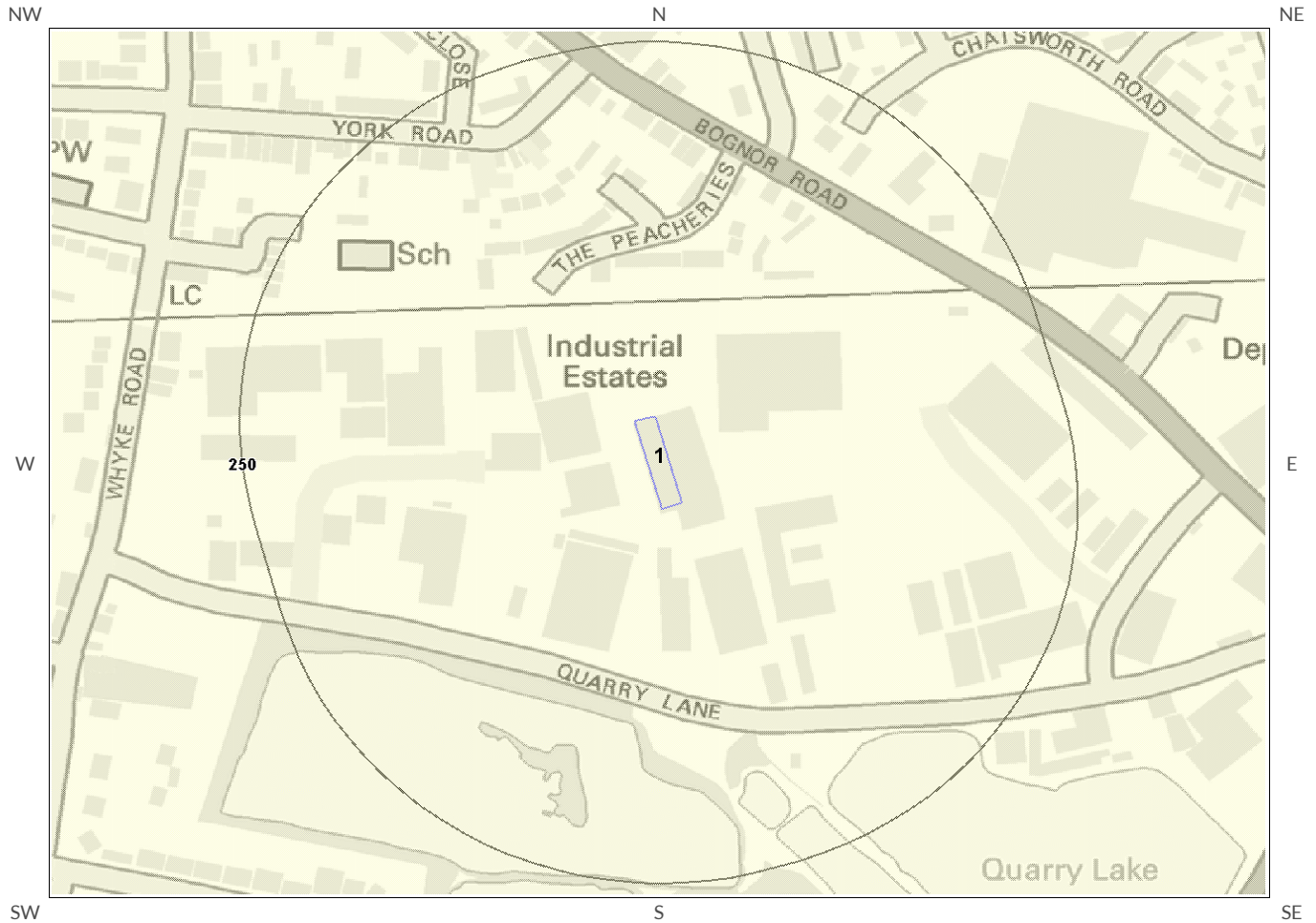
Compressible Deposits Legend



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# 4.5 Collapsible Deposits Map



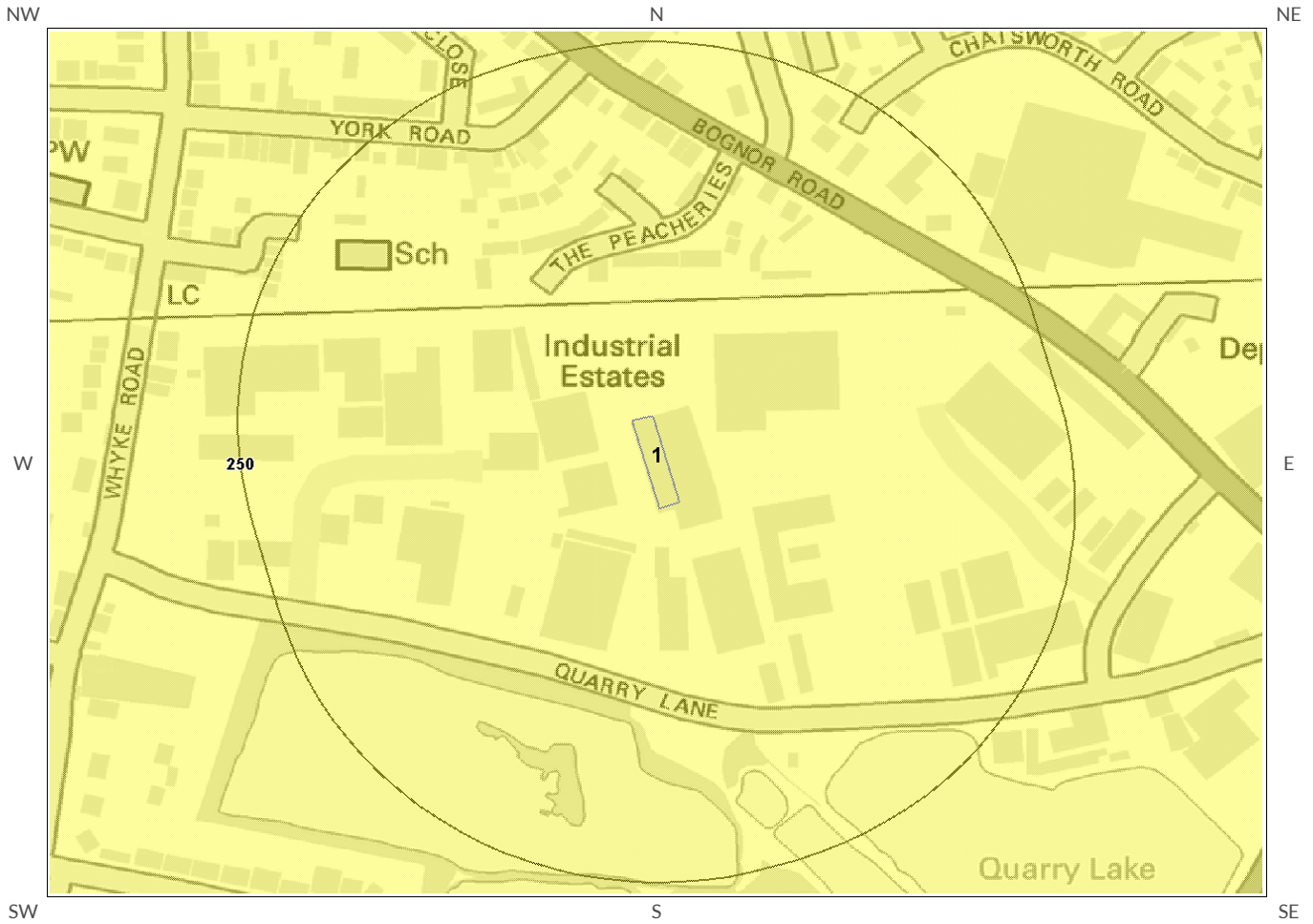
Collapsible Deposits Legend



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# 4.6 Running Sand Map



Running Sand Legend



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# 4 Natural Ground Subsidence

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

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

What is the maximum hazard rating of natural subsidence within the study site\* boundary? Moderate

## 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.

## 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	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

## 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	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

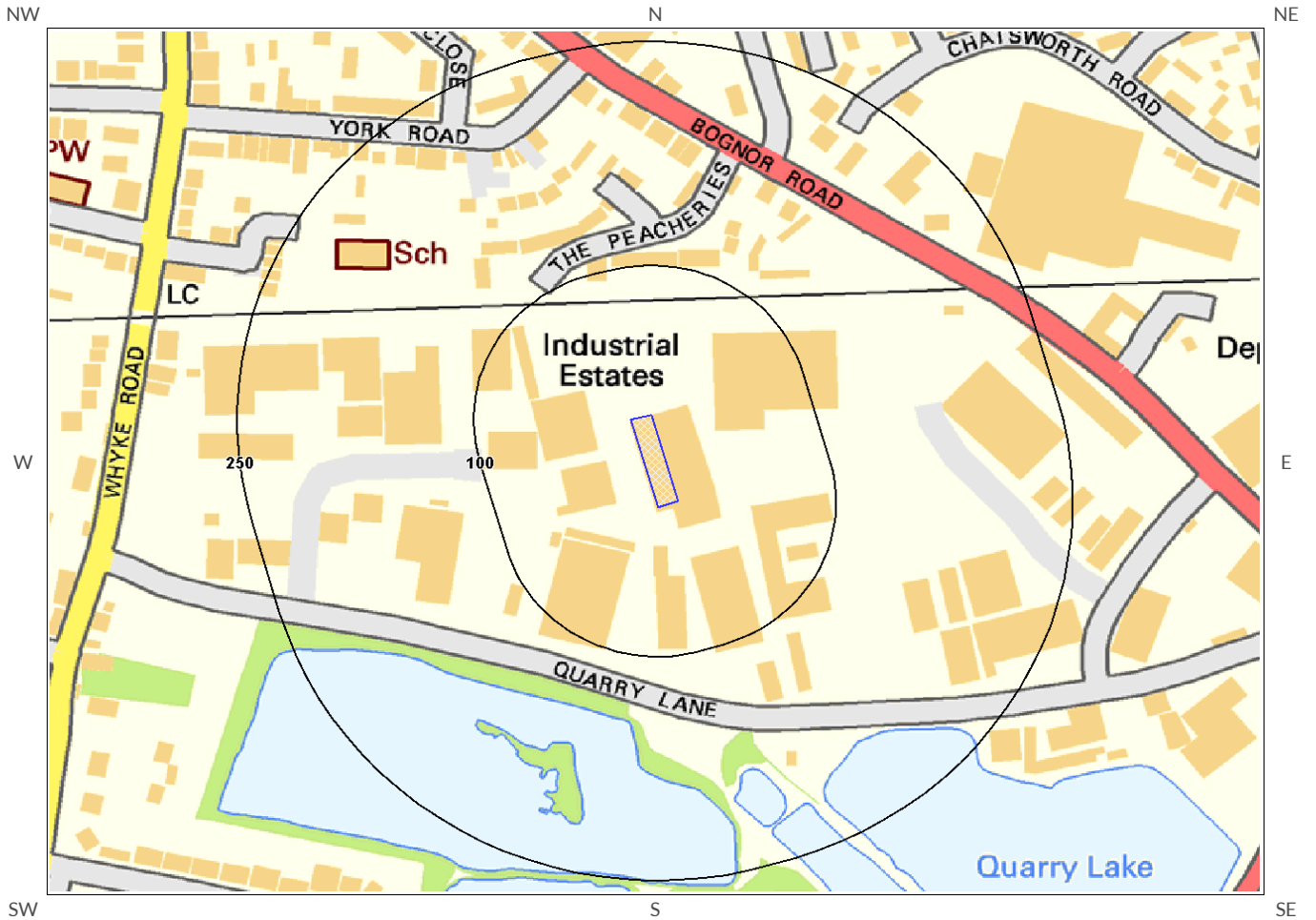
## 4.6 Running Sands

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

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





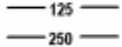
# 5 Borehole Records Map



Borehole Records Legend



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Ordnance Survey license 100035207.

-  Site Outline
-  Borehole Locations
-  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:

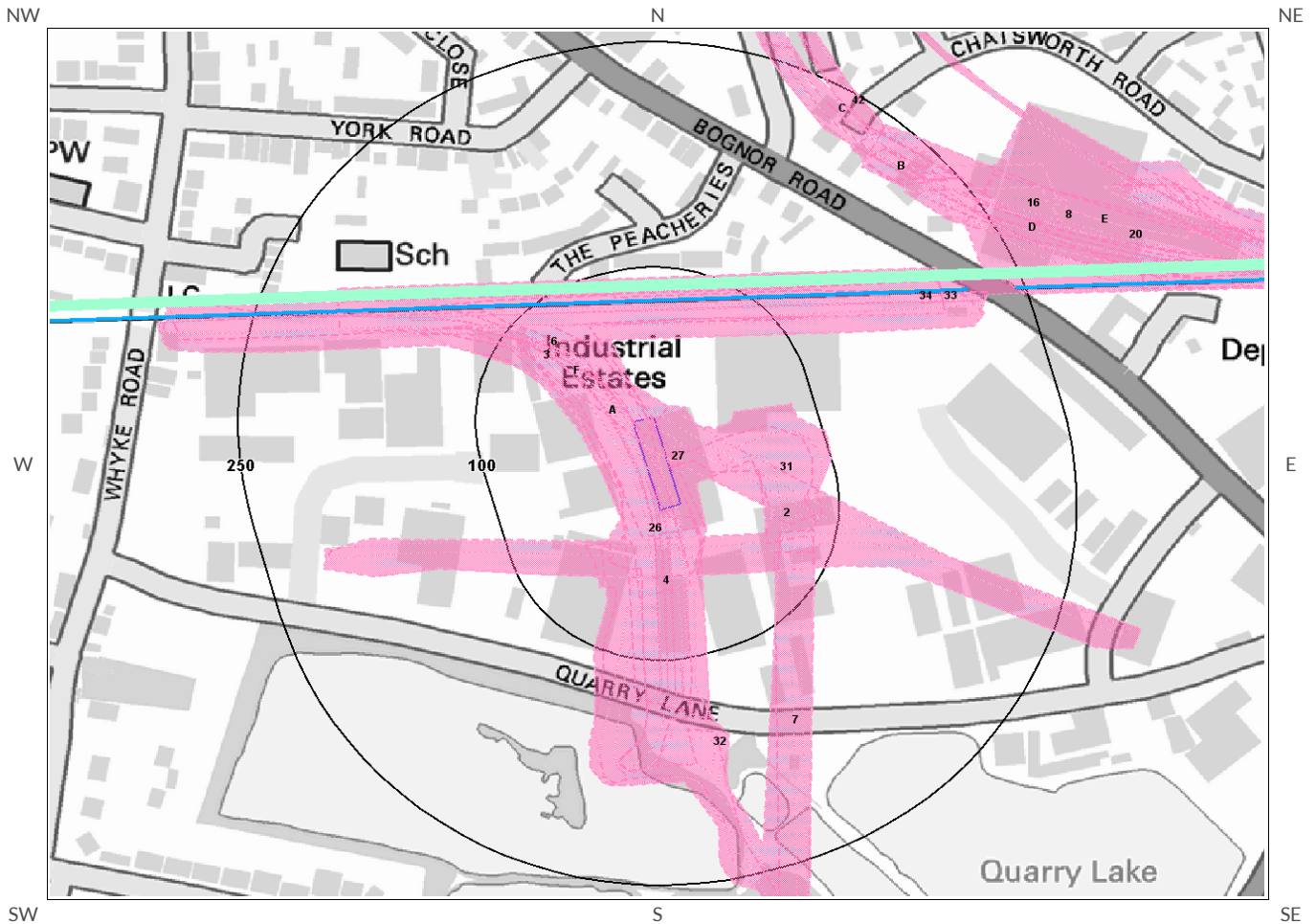
5

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

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
152.0	E	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
211.0	S	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
211.0	S	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
227.0	N	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



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- Underground or Partially Underground Railway / Subway System
- Railway Track (OpenStreetMap)
- Site Outline
- Railway Tunnel (OS Mapping)
- High Speed 2
- Search Buffers (m)
- Abandoned or Dismantled Railway (OpenStreetMap)
- Crossrail
- Railway Track (OS Mapping)
- 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
1A	0	On Site	487337 104197	Railway Sidings	1933
2	0	On Site	487380 104226	Railway Sidings	1909
3	0	On Site	487323 104264	Railway Sidings	1978
4	0	On Site	487411 103734	Tramway Sidings	1938
5A	0	On Site	487331 104218	Railway Sidings	1957
6	0	On Site	487321 104282	Railway Sidings	1973
21	0	On Site	487466 104352	Disused Railway Sidings	1962
22	0	On Site	487383 104240	Tramway Sidings	1912

ID	Distance (m)	Direction	NGR	Details	Date
23	0	On Site	487336 104193	Railway Sidings	1933
24	0	On Site	487329 104216	Railway Sidings	1962
25	0	On Site	487316 104259	Railway Sidings	1969
26	3	W	487332 104198	Railway Sidings	1975
27	3	E	487346 104244	Tramway Sidings	1933
28F	11	NW	487286 104301	Railway Sidings	1975
29F	13	NW	487282 104303	Railway Sidings	1989
30F	13	NW	487282 104303	Railway Sidings	1981
31	32	E	487422 104231	Tramway Sidings	1933
7	39	SW	487415 103653	Tramway Sidings	1933
32	44	S	487418 103659	Tramway Sidings	1933
33	185	NE	487519 104352	Railway Sidings	1962
34	186	NE	487503 104352	Railway Sidings	1971
8	212	NE	487551 104419	Railway Sidings	1957
9B	215	NE	487490 104440	Railway Sidings	1932
10B	216	NE	487489 104447	Railway Sidings	1938
11D	218	NE	487583 104390	Railway Sidings	1933
12C	220	NE	487432 104489	Railway Sidings	1896
13C	220	NE	487432 104489	Railway Sidings	1910
35C	224	NE	487433 104487	Railway Sidings	1898
36	224	NE	487433 104487	Railway Sidings	1912
14D	225	NE	487589 104391	Railway Sidings	1909
15D	225	NE	487589 104391	Railway Sidings	1938
37B	225	NE	487494 104440	Railway Sidings	1932
38D	228	NE	487588 104397	Railway Sidings	1933
16	229	NE	487595 104408	Railway Sidings	1896
39D	229	NE	487554 104394	Railway Sidings	1875
17E	230	NE	487660 104419	Railway Sidings	1978
18E	230	NE	487660 104419	Railway Sidings	1973
40D	230	NE	487588 104397	Railway Sidings	1898

ID	Distance (m)	Direction	NGR	Details	Date
41D	230	NE	487588 104397	Railway Sidings	1912
19	232	NE	487457 104481	Tramway Sidings	1875
42	232	NE	487434 104516	Tramway Sidings	1877
20	245	NE	487668 104396	Railway Sidings	1994

*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? Yes

Distance (m)	Direction	Name	Type
78	N	Not given	Multi Track
86	N	West Coastway Line	Rail
89	N	West Coastway Line	Rail
244	E	Not given	Multi Track

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

**CENTREMAPS**  
Telephone: 01886 832972  
groundsure@centremaps.co.uk  
CENTREMAPS, Brockamin House, Leigh, Worcester, London, WR6 5JU

**centremapslive.com**  
the mapping portal from Laser Surveys

Directors: M C Walker, MInst C.E.S., C M Walker,  
S J Hawkins BSc (Hons), S E Stewart BSc (Hons)  
Registered No. 1890261 Registered in England and Wales  
Registered Company: Laser Surveys Limited

## British Geological Survey Enquiries

Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143.  
Fax: 0115 936 3276.  
Email: [enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)  
Web: [www.bgs.ac.uk](http://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](http://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](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000



## Johnson Poole & Bloomer Limited

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Brierley Hill, West Midlands  
DY5 3LH  
Tel: +44 (0) 1384 262 000  
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Website: [www.jpb.co.uk](http://www.jpb.co.uk)



## Ordnance Survey

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## Getmapping PLC

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Hampshire RG27 8NW  
Tel: 01252 845444  
Website: <http://www1.getmapping.com/>



## Peter Brett Associates

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Tel: +44 (0)118 950 0761 E-mail: [reading@pba.co.uk](mailto:reading@pba.co.uk)  
Website: <http://www.peterbrett.com/home>



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Report Reference: CMAPS-CM-382999-26342-031214GEO  
Client Reference: 26342



## 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](http://www.GroundSure.com)) and forming part of this Contract.

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

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

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

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

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

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

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

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

### 3 The Client's obligations

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

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

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

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

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

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

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

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

### 4 Reliance

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

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

- (i) the Beneficiary,
- (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),
- (iv) the first purchaser or first tenant of the Site, and
- (v) the professional advisers and lenders of the first purchaser or tenant of the Site.

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

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

### 5 Fees and Disbursements

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

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

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

### 6 Intellectual Property and Confidentiality

6.1 Subject to

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

7.4 GroundSure shall not be liable for

(i) loss of profits;

(ii) loss of business;

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

(iv) loss of anticipated savings;

(v) loss of goods;

(vi) loss of contract;

(vii) loss of use;

(viii) loss or corruption of data or information;

(ix) business interruption;

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

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

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

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

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

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

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

#### **8 GroundSure's right to suspend or terminate**

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

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

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

days of the Payment Date; or

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

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

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

#### **9. Client's Right to Terminate and Suspend**

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

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

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

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

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

(b) by their nature cannot be returned.

#### **10 Consequences of Withdrawal, Termination or Suspension**

10.1 Upon termination of the Contract:

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

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

#### **11 Anti-Bribery**

11.1 The Client warrants that it shall:

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

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

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

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

#### **12 General**

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

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

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

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

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

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

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

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

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

(iii) Acts of God or the public enemy;

(iv) riot, civil commotion or war;

(v) strikes, labour disputes or industrial action;

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

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

Party Data Providers;

(viii) changes in law; or

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

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

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

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

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

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

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

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

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

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

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

CENTREMAPS  
Brockamin House, ,  
Worcester, WR6 5JU

GroundSure Reference: CMAPS-CM-382999-26342-031214EDR

Your Reference: 26342

Report Date 3 Dec 2014

Report Delivery Method: Email - pdf

## GroundSure EnviroInsight

Address: ,

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 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.  
GroundSure EnviroInsight



# GroundSure Envirolnsight

Address: ,  
Date: 3 Dec 2014  
Reference: CMAPS-CM-382999-26342-031214EDR  
Client: CENTREMAPS

NW

N

NE



W

E

SW

S

SE

Aerial Photograph Capture date: 03-May-2013  
Grid Reference: 487333,104242  
Site Size: 0.08ha

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# Overview of Findings

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

Section 1: Environmental Permits, Incidents and Registers		On-site	0-50m	51-250	251-500		
1.1 Industrial Sites Holding Environmental Permits and/or Authorisations							
1.1.1	Records of historic IPC Authorisations	0	0	0	0		
1.1.2	Records of Part A(1) and IPPC Authorised Activities	0	0	0	0		
1.1.3	Records of Water Industry Referrals (potentially harmful discharges to the public sewer)	0	0	0	0		
1.1.4	Records of Red List Discharge Consents (potentially harmful discharges to controlled waters)	0	0	0	0		
1.1.5	Records of List 1 Dangerous Substances Inventory sites	0	0	0	0		
1.1.6	Records of List 2 Dangerous Substances Inventory sites	0	0	0	0		
1.1.7	Records of Part A(2) and Part B Activities and Enforcements	0	0	3	1		
1.1.8	Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0		
1.1.9	Records of Licensed Discharge Consents	0	0	0	0		
1.1.10	Records of Planning Hazardous Substance Consents and Enforcements	0	0	0	0		
1.2	Records of COMAH and NIHHS sites	0	0	0	0		
1.3 Environment Agency Recorded Pollution Incidents							
1.3.1	National Incidents Recording System, List 2	0	0	1	7		
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	1	3	2	4	7
2.1.3	BGS/DoE Landfill Site Survey	0	0	0	0	0	2
2.1.4	GroundSure Local Authority Landfill Sites Data	0	0	3	0	1	4
2.2 Landfill and Other Waste Sites Findings							
2.2.1	Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	5	0	Not searched	Not searched
2.2.2	Environment Agency Licensed Waste Sites	0	0	3	0	1	7



Section 3: Current Land Use	On-site	0-50m	51-250	251-500
3.1 Current Industrial Sites Data	0	3	29	Not searched
3.2 Records of Petrol and Fuel Sites	0	0	0	0
3.3 Underground High Pressure Oil and Gas Pipelines	0	0	0	0

## Section 4: Geology

4.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	Yes
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	1	3	20
5.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	3
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	0	Not searched	Not searched
5.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
5.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	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	No	Yes
5.10 Detailed River Network entries within 500m of the site	0	0	0	0	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?	Yes
6.2 Are there any Environment Agency Zone 3 floodplains within 250m of the study site?	No
6.3 Are there any Flood Defences within 250m of the study site?	No
6.4 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
6.5 Are there any areas used for Flood Storage within 250m of the study site?	No
6.6 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Potential at Surface
6.7 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Moderate

## Section 7: Designated Environmentally Sensitive Sites

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

## Section 8: Natural Hazards

8.1 What is the maximum risk of natural ground subsidence?	Moderate
8.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Negligible
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?	Moderate
8.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Negligible
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.

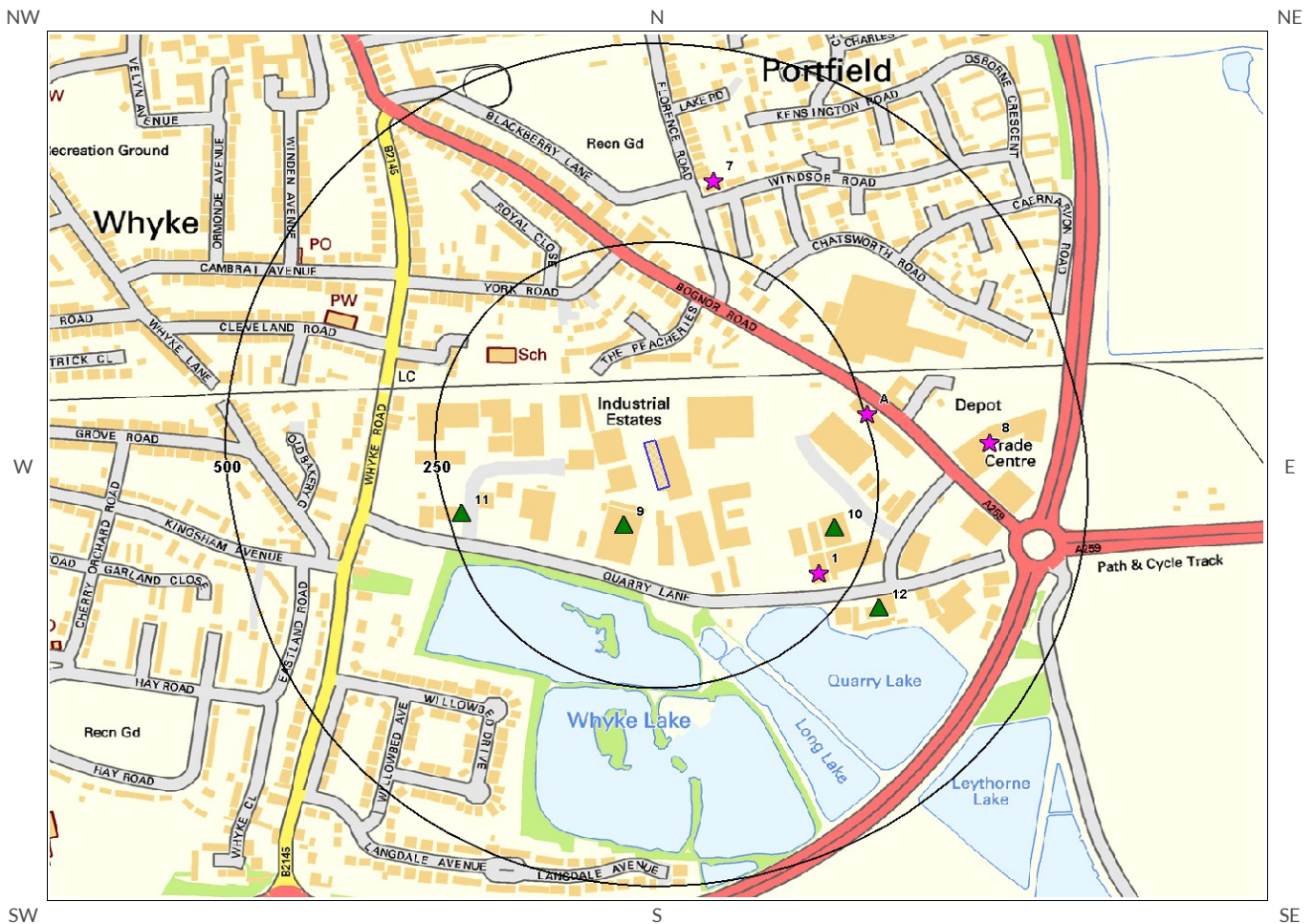
### Note: Maps

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

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



# 1. Environmental Permits, Incidents and Registers

## 1.1 Industrial Sites Holding Licences and/or Authorisations

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

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

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

4

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
9	62.0	SW	487293 104165	Address: David Cover & Son Ltd, Sussex House, Quarry Lane, Chichester, West Sussex, PO19 8PE Process: Timber Process 6.6 Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
10	204.0	E	487545 104162	Address: Chandler & Hammond, Spur Rd, Quarry Lane, PO19 2PR Process: Vehicle Re-spray Process Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
11	235.0	W	487099 104180	Address: MG Duff International Limited, 6 & 7 Quarry Lane, Chichester, West Sussex, PO19 8QA Process: Non-Ferrous Metals 2.2 Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
12	294.0	SE	487598 104061	Address: Ele-Flex Ltd, Quarry Lane, Chichester, West Sussex, PO19 8NY Process: Metal Coating 6.4 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:

0

Database searched and no data found.

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

0

Database searched and no data found.

1.2 Dangerous or Hazardous Sites

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

0

Database searched and no data found.

1.3 Environment Agency Recorded Pollution Incidents

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

8

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

ID	Distance	Direction	NGR	Details
1	209.0	SE	487526 104106	Incident Date: 02/05/2002 Incident Identification: 76064 Pollutant: Specific Waste Materials Pollutant Description: Tyres Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2A	252.0	E	487584 104307	Incident Date: 26/03/2004 Incident Identification: 225514 Pollutant: Contaminated Water Pollutant Description: Smoke Firefighting Run-Off Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 1 (Major)
3A	252.0	E	487584 104307	Incident Date: 26/03/2004 Incident Identification: 225514 Pollutant: Atmospheric Pollutants and Effects: Contaminated Water Pollutant Description: Smoke: Firefighting Run-Off Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 1 (Major)
4A	252.0	E	487584 104307	Incident Date: 26/03/2004 Incident Identification: 225514 Pollutant: Atmospheric Pollutants and Effects : Contaminated Water Pollutant Description: Smoke : Firefighting Run-Off Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 1 (Major)
5A	252.0	E	487584 104307	Incident Date: 26/03/2004 Incident Identification: 225514 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 1 (Major)
6A	252.0	E	487584 104307	Incident Date: 26/03/2004 Incident Identification: 225514 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 1 (Major)
7	334.0	N	487400 104600	Incident Date: 18/11/2003 Incident Identification: 202244 Pollutant: Oils and Fuel Pollutant Description: Mixed/Waste Oils Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)



ID	Distance	Direction	NGR	Details	
8	386.0	E	487730 104270	Incident Date: 13/11/2003 Incident Identification: 201450 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) 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

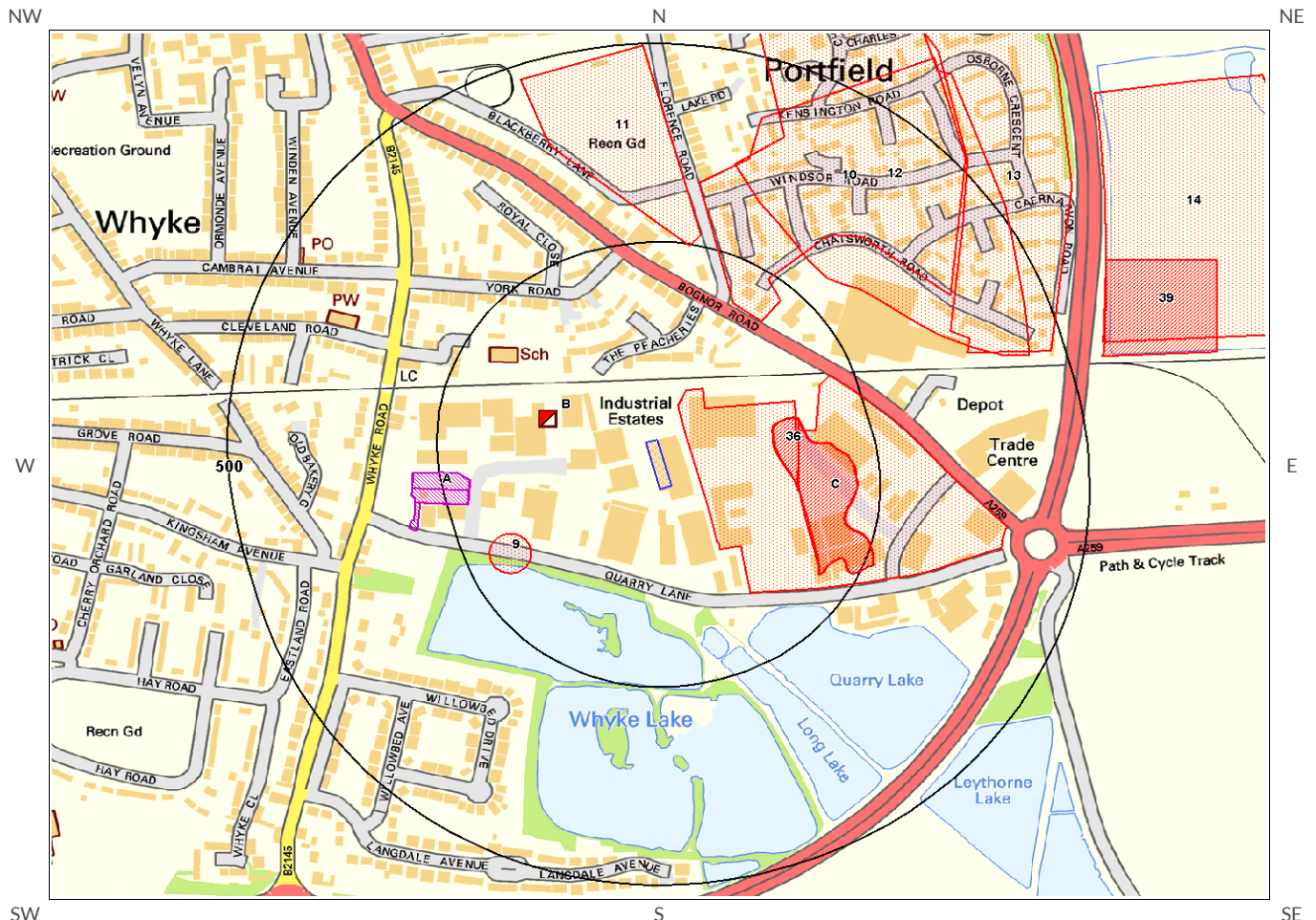
How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

0

Database searched and no data found.

---






# 2. Landfill and Other Waste Sites Map



Landfill and Other Waste Sites Legend



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



# 2. Landfill and Other Waste Sites

## 2.1 Landfill Sites

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

0

Database searched and no data found.

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

17

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
8C	35.0	E	487500 104200	Site Address: Quarry Lane, Chichester, Sussex Waste Licence: Yes Site Reference: WD27/048 Waste Type: Inert, Commercial, Household, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01-Jan-1976 Licence Surrendered: Licence Hold Address: - Operator: -
9	172.0	SW	487100 104100	Site Address: Bank's south of Quarry Lane, Chichester, Sussex Waste Licence: Yes Site Reference: WD27/038, WD13/5/2 Waste Type: Inert, Industrial, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01-Jan-1976 Licence Surrendered: Licence Hold Address: - Operator: -
10	194.0	NE	487500 104500	Site Address: Arundel Park Estate, Hadlow Down, Chichester, Sussex Waste Licence: Yes Site Reference: WD27/353, 1-032 Waste Type: Waste unknown Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 31-Aug-1990 Licence Surrendered: 25-Feb-1991 Licence Hold Address: - Operator: -
11	248.0	N	487200 104600	Site Address: Florence Road, Hadlow Down, Chichester, Sussex Waste Licence: - Site Reference: WD27/352 Waste Type: Inert, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
12	288.0	NE	487500 104600	Site Address: Railway Tip, Chichester, Sussex Waste Licence: Yes Site Reference: WD27/052 Waste Type: Inert, Industrial, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01-Jan-1976 Licence Surrendered: Licence Hold Address: - Operator: -

ID	Distance (m)	Direction	NGR	Details
13	377.0	E	487700 104600	Site Address: Right Side of Approach Bridge to Cookoo Trail coming from Hellingly, Beggars Lane, Hellingly, Sussex Waste Licence: - Site Reference: 1-239, WD27/354 Waste Type: Waste unknown Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
14	547.0	E	488100 104500	Site Address: Drayton Manor, Chichester, Sussex Waste Licence: Yes Site Reference: WD27/042, WD13/37 Waste Type: Industrial, Commercial, Household, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 20-Oct-1980 Licence Surrendered: 31-Oct-1990 Licence Hold Address: - Operator: -
Not shown	949.0	N	487600 105300	Site Address: Portfield Tip, Chichester, Sussex Waste Licence: Yes Site Reference: WD27/054, WD13/1 Waste Type: Inert, Industrial, Commercial, Household, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 14-Jun-1977 Licence Surrendered: 09-Sep-1984 Licence Hold Address: - Operator: -
Not shown	979.0	N	487200 105300	Site Address: Farndell Close, St James' Road, Chichester, Sussex Waste Licence: - Site Reference: WD27/351 Waste Type: Waste unknown Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
Not shown	979.0	N	487200 105300	Site Address: St James Industrial Works, Westhampnett Road, Chichester, Sussex Waste Licence: - Site Reference: WD27/350 Waste Type: Waste unknown Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
Not shown	1131.0	N	487600 105600	Site Address: Portfield Tip, Chichester, Sussex Waste Licence: Yes Site Reference: WD27/047, WD13/1 Waste Type: Inert, Industrial, Commercial, Household, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 14-Jun-1977 Licence Surrendered: 09-Sep-1984 Licence Hold Address: - Operator: -
Not shown	1131.0	N	487600 105600	Site Address: Postfield Gravel Pit, By Pass, Oving, Chichester, Kent Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
Not shown	1184.0	E	488600 104600	Site Address: Shopwyke Gravel Pit, Chichester, Sussex Waste Licence: - Site Reference: WD27/053 Waste Type: Inert, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
Not shown	1205.0	N	487300 105800	Site Address: Barnfield Drive, Chichester, Sussex Waste Licence: - Site Reference: WD27/039, 1-158 Waste Type: Inert, Commercial, Household, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -

ID	Distance (m)	Direction	NGR	Details
Not shown	1303.0	E	488900 104000	Site Address: Drayton House, Drayton Lane, Oving, Sussex Waste Licence: - Site Reference: WD27/355 Waste Type: Waste unknown Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
Not shown	1316.0	NE	488000 105500	Site Address: Frances Concrete, Chichester, Sussex Waste Licence: Yes Site Reference: WD27/043, WD13/94 Waste Type: Inert, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 14-Feb-1984 Licence Surrendered: 23-Dec-1988 Licence Hold Address: - Operator: -
Not shown	1320.0	SW	485900 103600	Site Address: Canal South Of A27, Canal Dredgings, Stockbridge, Chichester, Sussex Waste Licence: Yes Site Reference: WD27/040, WD13/9999 Waste Type: Inert, Liquid sludge, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01-Jan-1976 Licence Surrendered: Licence Hold Address: - Operator: -

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

2

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

ID	Distance (m)	Direction	NGR	Details
Not shown	1377.0	N	48770 0.0 10560 0.0	Address: Postfield Gravel Pit, By Pass, Oving, Chichester BGS Number: 2564.0 Risk: No risk to aquifer Waste Type: N/A
Not shown	1437.0	N	48750 0.0 10570 0.0	Address: Westhampnet Rd, Chichester BGS Number: 1822.0 Risk: Risk to major aquifer Waste Type: N/A

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

8

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
36	132.0	E		Refuse Tip	1961 mapping	Polygon
37C	133.0	E		Refuse Tip	1962 mapping	Polygon
38C	152.0	E		Refuse Tip	1961 mapping	Polygon
39	540.0	E		Refuse Tip	1988 mapping	Polygon
Not shown	1123.0	N		Refuse Tip	1978 mapping	Polygon

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	1131.0	N		Refuse Tip	1970 mapping	Polygon
Not shown	1239.0	N		Refuse Tip	1970 mapping	Polygon
Not shown	1243.0	N		Refuse Tip	1978 mapping	Polygon

## 2.2 Other Waste Sites

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

5

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details		
3A	216.0	W	487072 104211	Type of Site: Car Breaker's Yard Site Address: N/A	Planning Application Reference: N/A Date: 1968	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
4A	216.0	W	487073 104220	Type of Site: Car Breaker's Yard Site Address: N/A	Planning Application Reference: N/A Date: 1974	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
5A	216.0	W	487071 104195	Type of Site: Car Breaker's Yard Site Address: N/A	Planning Application Reference: N/A Date: 1989	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
6A	216.0	W	487071 104195	Type of Site: Car Breaker's Yard Site Address: N/A	Planning Application Reference: N/A Date: 1981	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
7A	216.0	W	487071 104195	Type of Site: Car Breaker's Yard Site Address: N/A	Planning Application Reference: N/A Date: 1990	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

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

11

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

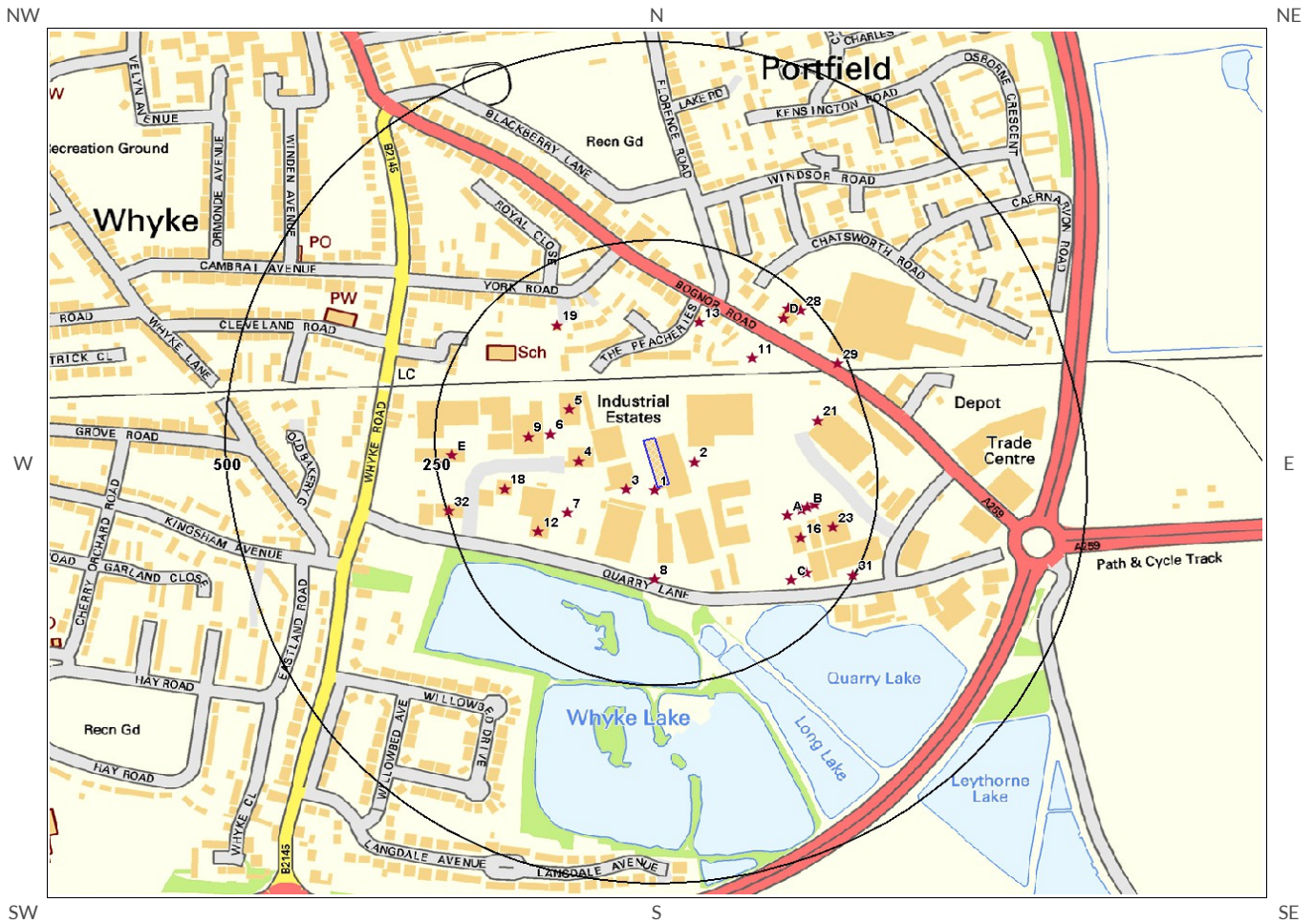
ID	Distance (m)	Direction	NGR	Details
25B	122.0	W	487200 104300	<p>Site Address: Plot 7, Gravel Lane, Quarry Lane, Chichester, West Sussex, PO19 8PQ                      Type: Metal Recycling Site (Vehicle Dismantler)                      Size: &lt; 25000 tonnes                      Environmental Permitting Regulations (Waste) Licence Number: GRL002                      EPA reference: EA/EPR/AB3603UE/T001                      Operator: Greenwharf Recycling Limited                      Waste Management licence No: 19750                      Annual Tonnage: 1500.0</p> <p>Issue Date: 16/09/1994                      Effective Date: 25/10/2013                      Modified: 01/01/2006                      Surrendered Date: -                      Expiry Date: -                      Cancelled Date: -                      Status: Transferred                      Site Name: Greenwharf Recycling                      Correspondence Address: -, -</p>
26B	122.0	W	487200 104300	<p>Site Address: R &amp; W Motors, Plot 7, Gravel Lane, Quarry Lane, Chichester, West Sussex, PO19 2PQ                      Type: Metal Recycling Site (Vehicle Dismantler)                      Size: &lt; 25000 tonnes                      Environmental Permitting Regulations (Waste) Licence Number: BEL001                      EPA reference: -                      Operator: Bell Eric Frederick                      Waste Management licence No: 19750                      Annual Tonnage: 1500.0</p> <p>Issue Date: 16/09/1994                      Effective Date: -                      Modified: -                      Surrendered Date: -                      Expiry Date: -                      Cancelled Date: -                      Status: Issued                      Site Name: R &amp; W Motors                      Correspondence Address: -, R &amp; W Motors, Plot 7, Gravel Lane, Quarry Lane, Chichester, West Sussex, PO19 2PQ</p>
27B	122.0	W	487200 104300	<p>Site Address: Plot 7, Gravel Lane, Quarry Lane, Chichester, West Sussex, PO19 2PQ                      Type: Metal Recycling Site (Vehicle Dismantler)                      Size: &lt; 25000 tonnes                      Environmental Permitting Regulations (Waste) Licence Number: AND001                      EPA reference: EA/EPR/RP3594HK/V002                      Operator: Andrew Michael                      Waste Management licence No: 19750                      Annual Tonnage: 1500.0</p> <p>Issue Date: 16/09/1994                      Effective Date: 17/06/2004                      Modified: 01/01/2006                      Surrendered Date: -                      Expiry Date: -                      Cancelled Date: -                      Status: Modified                      Site Name: R &amp; W Motors                      Correspondence Address: -, -</p>
Not shown	929.0	NE	487847 105045	<p>Site Address: Portfield Depot, Oving Road, Portfield, Chichester, West Sussex, PO20 2AG                      Type: Special Waste Transfer Station                      Size: &lt; 25000 tonnes                      Environmental Permitting Regulations (Waste) Licence Number: EAL008                      EPA reference: EA/EPR/QP3090EH/A001                      Operator: The Environment Agency                      Waste Management licence No: 83562                      Annual Tonnage: 50000.0</p> <p>Issue Date: 30/06/2005                      Effective Date: -                      Modified: -                      Surrendered Date: -                      Expiry Date: -                      Cancelled Date: -                      Status: Revoked                      Site Name: The Environment Agency                      Correspondence Address: -, -</p>
Not shown	1311.0	NE	488000 105400	<p>Site Address: Portfield Quarry, Chichester By-pass, Chichester, West Sussex, PO19 4UW                      Type: Physical Treatment Facility                      Size: &gt;= 75000 tonnes                      Environmental Permitting Regulations (Waste) Licence Number: TJT004                      EPA reference: EA/EPR/BP3195VP/V002                      Operator: T J Transport Ltd                      Waste Management licence No: 19758                      Annual Tonnage: 250000.0</p> <p>Issue Date: 02/12/1997                      Effective Date: 18/03/2009                      Modified: 17/09/2014                      Surrendered Date: -                      Expiry Date: -                      Cancelled Date: -                      Status: Modified                      Site Name: Portfield Quarry                      Correspondence Address: -, -</p>

ID	Distance (m)	Direction	NGR	Details
Not shown	1311.0	NE	488000 105400	<p>Site Address: Portfield Quarry, Chichester By-pass, Chichester, West Sussex Type: Physical Treatment Facility Size: &gt;= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TAR002 EPR reference: - Operator: Tarmac Heavy Building Materials U K Ltd Waste Management licence No: 19758 Annual Tonnage: 100000.0</p> <p>Issue Date: 02/12/1997 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Portfield Quarry Correspondence Address: -, Tarmac Heavy Building Materials U K Limited, Millfields Road, Ettingshall, Wolverhampton, West Midlands, WV4 6JP</p>
Not shown	1436.0	S	487600 102800	<p>Site Address: Peckhams Copse, North Mundham, Chichester, West Sussex, PO20 6LB Type: Metal Recycling Site (mixed MRS's) Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WJC001 EPR reference: EA/EPR/DP3994HS/V002 Operator: W J Chatfield &amp; Sons Waste Management licence No: 19760 Annual Tonnage: 5720.0</p> <p>Issue Date: 31/03/1994 Effective Date: - Modified: 01/01/2006 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Peckhams Copse Correspondence Address: -, -</p>
Not shown	1480.0	E	488800 104500	<p>Site Address: Drayton Depot, Drayton Lane, Chichester, West Sussex, PO20 6BW Type: Transfer Station taking Non-Biodegradable Wastes Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MAY002 EPR reference: EA/EPR/CP3394LW/S002 Operator: May Gurney Ltd Waste Management licence No: 19757 Annual Tonnage: 0.0</p> <p>Issue Date: 28/04/1994 Effective Date: 04/08/2007 Modified: 01/01/2006 Surrendered Date: 20/05/2010 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Drayton Depot Correspondence Address: -, -</p>
Not shown	1480.0	E	488800 104500	<p>Site Address: Drayton Depot, Drayton Lane, Chichester, West Sussex, PO20 6BW Type: Transfer Station taking Non-Biodegradable Wastes Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ROA003 EPR reference: - Operator: Roadforce Waste Management licence No: 19757 Annual Tonnage: 3650.0</p> <p>Issue Date: 28/04/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Drayton Depot Correspondence Address: -, City Gates, 2-4, Southgate, Chichester, West Sussex, PO19 2DJ</p>
Not shown	1480.0	E	488800 104500	<p>Site Address: Drayton Depot, Drayton Lane, Chichester, West Sussex, PO20 6BW Type: Transfer Station taking Non-Biodegradable Wastes Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MAY002 EPR reference: - Operator: May Gurney Limited Waste Management licence No: 19757 Annual Tonnage: 3650.0</p> <p>Issue Date: 28/04/1994 Effective Date: 04/08/2007 Modified: 01/01/2006 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Drayton Depot Correspondence Address: -, Holland Court, The Close, Trowse, Norwich, Norfolk, NR14 4DY</p>
Not shown	1480.0	E	488800 104500	<p>Site Address: Drayton Depot, Drayton Lane, Chichester, West Sussex, PO20 6BW Type: Transfer Station taking Non-Biodegradable Wastes Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MAY002 EPR reference: - Operator: May Gurney Integrated Services Waste Management licence No: 19757 Annual Tonnage: 3650.0</p> <p>Issue Date: 28/04/1994 Effective Date: 04/08/2007 Modified: 01/01/2006 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Drayton Depot Correspondence Address: -, Holland Court, The Close, Trowse, Norwich, Norfolk, NR14 4DY</p>





# 3. Current Land Use Map



Current Land Use Legend



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Site Outline

Current Industrial Sites

Search Buffers (m)

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:

32

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	6.0	SW	Hopper	487331 104207	PO19	Hoppers and Silos	Farming
2	37.0	E	Electricity Sub Station	487378 104243	PO19	Electrical Features	Infrastructure and Facilities
3	37.0	W	Electricity Sub Station	487297 104208	PO19	Electrical Features	Infrastructure and Facilities
4	82.0	W	O Rings Ltd	487240 104244	Gravel Lane, Chichester, PO19 8PQ	Distribution and Haulage	Transport, Storage and Delivery
5	97.0	NW	Chichester Joinery Ltd	487229 104308	Gravel Lane, Chichester, PO19 8PQ	General Construction Supplies	Industrial Products
6	112.0	W	Electricity Sub Station	487206 104278	PO19	Electrical Features	Infrastructure and Facilities
7	114.0	W	Teknoflex	487226 104178	Quarry Lane, Chichester, PO19 8PE	Electrical Components	Industrial Products
8	116.0	S	Electricity Sub Station	487331 104095	PO19	Electrical Features	Infrastructure and Facilities
9	138.0	W	Oldham Seals Group	487180 104274	Jetpac Works, Gravel Lane, Chichester, PO19 8PG	General Construction Supplies	Industrial Products
10A	147.0	E	Parhams	487489 104175	Unit 7 Phoenix Business Centre, Spur Road, Chichester, PO19 8PN	Glass	Industrial Products
11	154.0	NE	Electricity Sub Station	487447 104374	PO19	Electrical Features	Infrastructure and Facilities
12	155.0	W	Electricity Sub Station	487191 104155	PO19	Electrical Features	Infrastructure and Facilities
13	155.0	N	Electricity Sub Station	487384 104419	PO19	Electrical Features	Infrastructure and Facilities
14A	161.0	E	The Design & Digital Print Centre Ltd	487506 104182	Unit 5 Phoenix Business Centre, Spur Road, Chichester, PO19 8PN	Published Goods	Industrial Products
15B	168.0	E	New Age Glass Ltd	487513 104185	Unit 4 Phoenix Business Centre, Spur Road, Chichester, PO19 8PN	Glass	Industrial Products
16	172.0	SE	Mount Space Ltd	487505 104147	Unit 6 Angell Estate, Spur Road, Chichester, PO19 8PL	Vehicle Parts and Accessories	Motoring
17B	176.0	E	The Stove Shop Ltd	487522 104189	Unit 3 Phoenix Business Centre, Spur Road, Chichester, PO19 8PN	Cookers and Stoves - Non Electrical	Consumer Products
18	177.0	W	Goodrowes of Chichester	487151 104209	Quarry Lane, Chichester, PO19 8PE	Agricultural Machinery and Goods	Industrial Products

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
19	178.0	NW	South Coast Contractors Ltd	487213 104414	33, York Road, Chichester, PO19 7TL	Civil Engineers	Engineering Services
20C	190.0	SE	Electricity Sub Station	487494 104094	PO19	Electrical Features	Infrastructure and Facilities
21	193.0	E	Electricity Sub Station	487526 104295	PO19	Electrical Features	Infrastructure and Facilities
22C	199.0	SE	Electricity Sub Station	487512 104103	PO19	Electrical Features	Infrastructure and Facilities
23	203.0	E	Gravel Lane Garage Services Ltd	487543 104160	2, Spur Road, Chichester, PO19 8PR	Vehicle Repair, Testing and Servicing	Repair and Servicing
24D	216.0	NE	Works	487485 104424	PO19	Unspecified Works Or Factories	Industrial Features
25D	228.0	NE	Bartholomews	487490 104435	Bognor Road, Chichester, PO19 7TT	Agricultural Machinery and Goods	Industrial Products
26D	228.0	NE	Bartholomews Specialist Distribution Ltd	487490 104435	Bognor Road, Chichester, PO19 7TT	Distribution and Haulage	Transport, Storage and Delivery
27E	231.0	W	M G Duff International Ltd	487088 104251	Unit 1 Timberlane Industrial Estate, Gravel Lane, Chichester, PO19 8PP	Construction Completion Services	Construction Services
28	237.0	NE	Works	487505 104434	PO19	Unspecified Works Or Factories	Industrial Features
29	237.0	NE	Electricity Sub Station	487549 104367	PO19	Electrical Features	Infrastructure and Facilities
30E	241.0	W	Timberlaine Industrial Estate	487079 104241	PO19	Business Parks and Industrial Estates	Industrial Features
31	248.0	SE	Quarry Lane Industrial Estate	487568 104100	PO19	Business Parks and Industrial Estates	Industrial Features
32	248.0	W	The Sign Shop Horsham Ltd	487085 104181	Unit 8, Quarry Lane, Chichester, PO19 8QA	Signs	Industrial Products

### 3.2 Petrol and Fuel Sites

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

Database searched and no data found.

### 3.3 Underground High Pressure Oil and Gas Pipelines

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

Database searched and no data found.



## 4. Geology

### 4.1 Artificial Ground and Made Ground

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

Lex Code	Description	Rock Type
WMGR-MGRD	INFILLED GROUND	ARTIFICIAL DEPOSIT

### 4.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
ALF-GSSC	ALLUVIAL FAN DEPOSITS	GRAVEL, SAND, SILT AND CLAY

### 4.3 Bedrock and Solid Geology

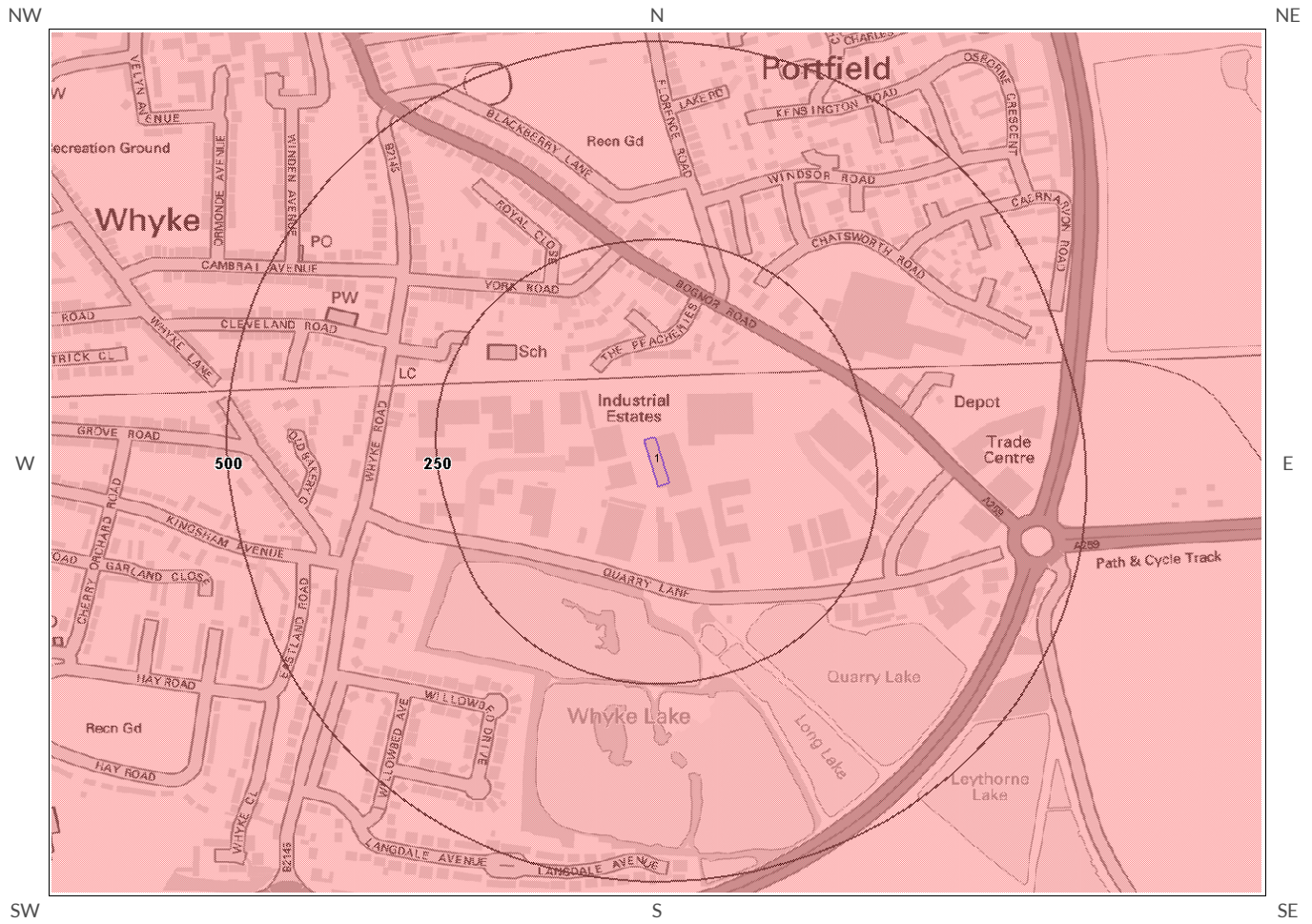
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
LC-CLSS	LONDON CLAY FORMATION	CLAY, SILT AND SAND

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

# 5. Hydrogeology and Hydrology

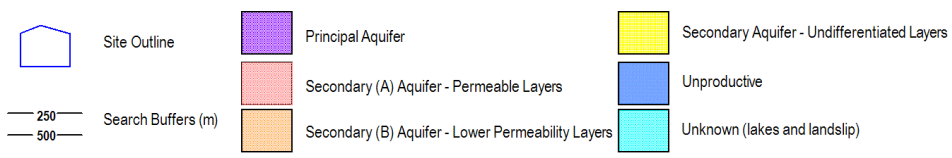
## 5a. Aquifer Within Superficial Geology



Aquifer Within Superficial Geology



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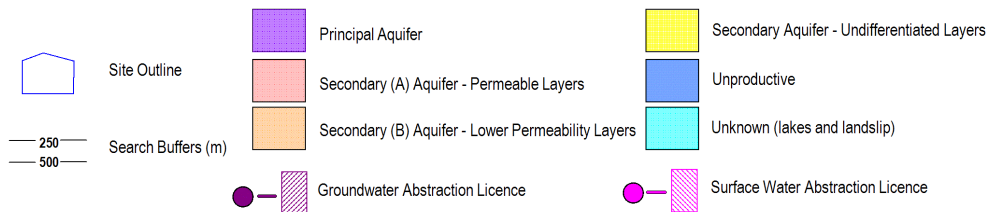
# 5b. Aquifer Within Bedrock Geology and Abstraction Licenses



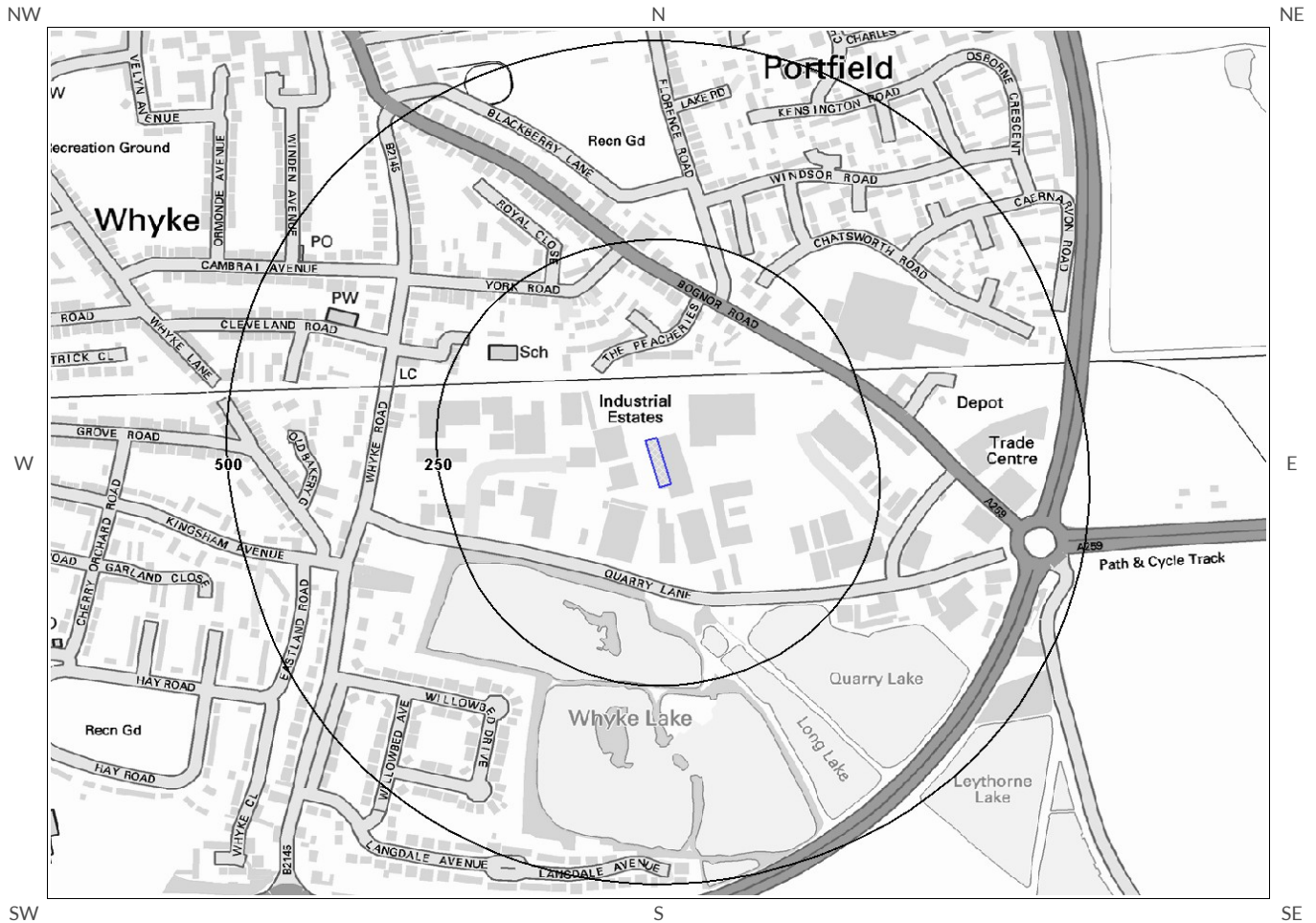
Aquifer Within Bedrock Geology and Abstraction Licenses



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





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



Map Legend Source Protection Zones and Potable Water Abstraction Licenses

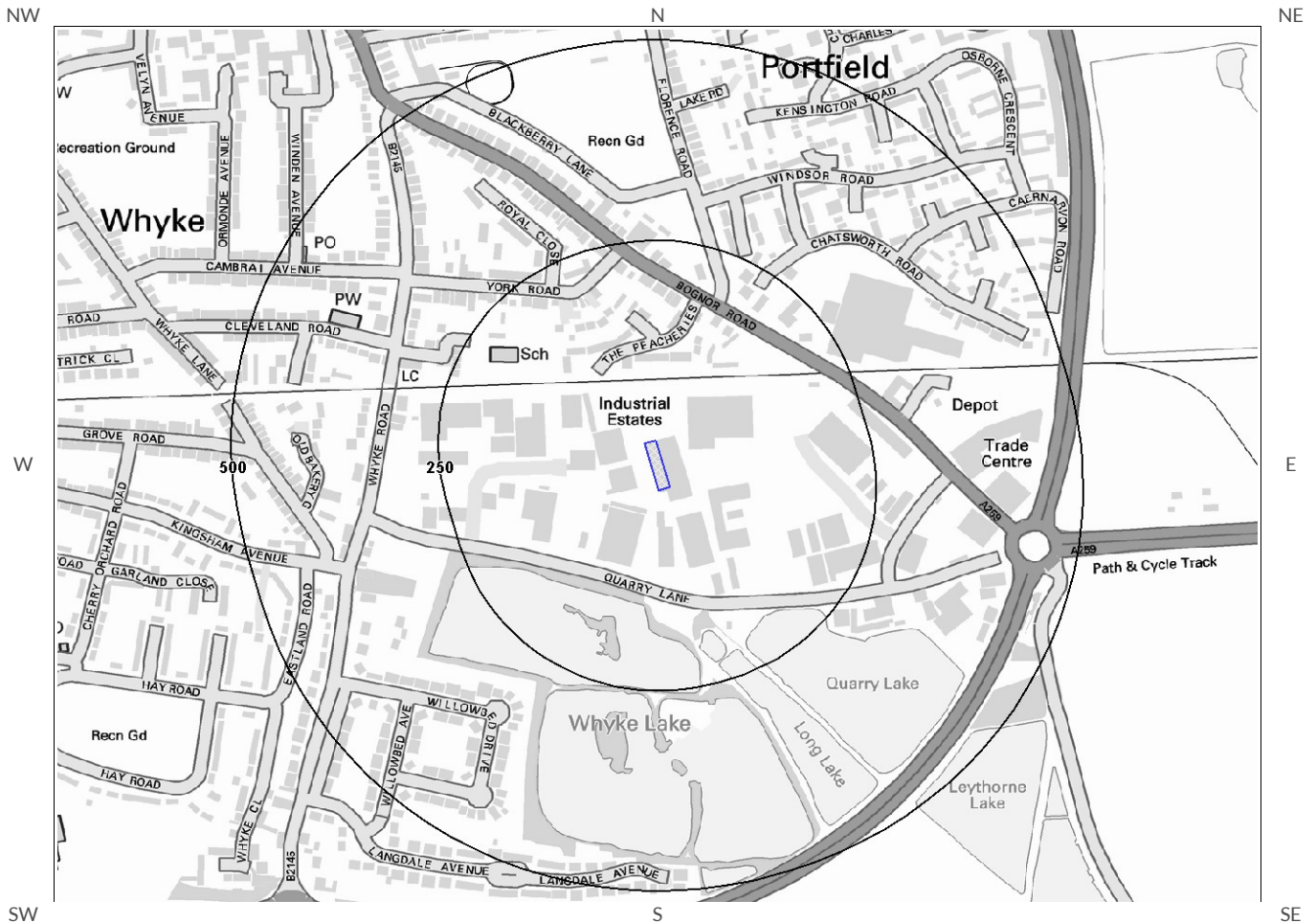


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-  Site Outline
-  Source Protection Zone 1 - Inner Catchment
-  Source Protection Zone 2 - Outer Catchment
-  Source Protection Zone 3 - Total Catchment
-  Source Protection Zone 4 - Zone of Special Interest
-  Potable Water Abstraction Licence
-  Search Buffers (m)









# 5d. Hydrology Source Protection Zones within confined aquifer



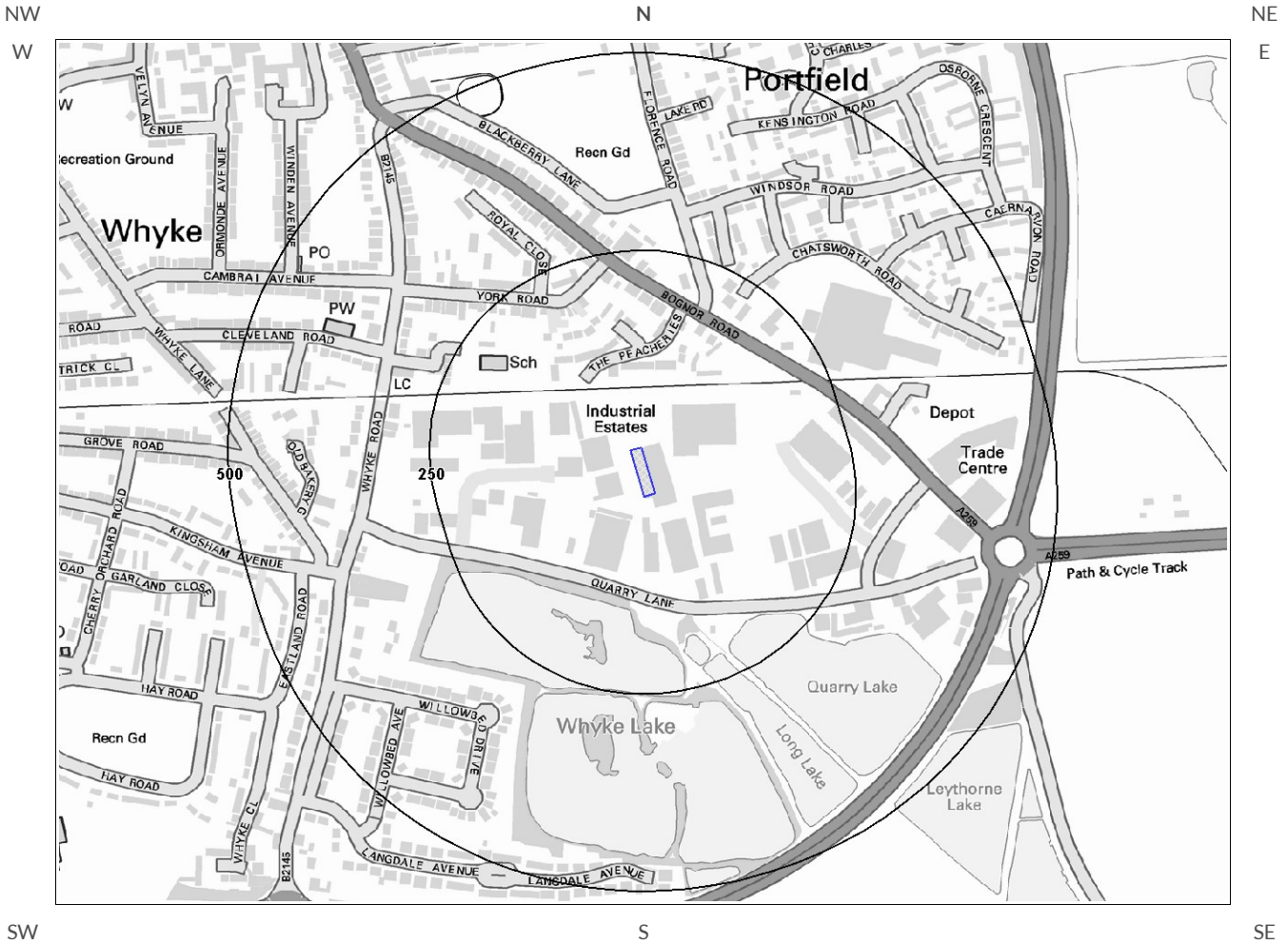
Hydrology Source Protection Zones



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-  Site Outline
-  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

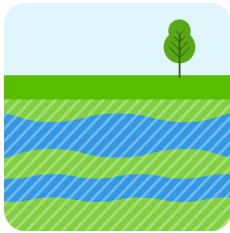


Hydrology – Detailed River Network and River Quality



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- |   |                    |   |                                       |   |                                     |
|---|--------------------|---|---------------------------------------|---|-------------------------------------|
|  | Site Outline       |  | Primary River                         |  | Canal                               |
|  | Search Buffers (m) |  | Secondary River                       |  | Canal Tunnel                        |
|   |                    |  | Tertiary River                        |  | Culvert                             |
|   |                    |  | Lake/Reservoir                        |  | Multiple Channel Culvert            |
|   |                    |  | Underground River (inferred)          |  | Underground River (Potential Sewer) |
|   |                    |  | General Quality Assessment: Biology   |  | Underground River (local knowledge) |
|   |                    |  | General Quality Assessment: Chemistry |   |                                     |



# 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

## 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
2	0.0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

### 5.3 Groundwater Abstraction Licences

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

Yes

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

ID	Distance (m)	Direction	NGR	Details
4	375.0	SW	487180 103870	<p>Licence No: 10/41/531310            Details: Mineral Washing            Direct Source: Southern Region Groundwater            Point: Chichester Gravel Pits Point 7            Data Type: Point</p> <p>Annual Volume (m<sup>3</sup>): 7727273            Max Daily Volume (m<sup>3</sup>): 27273            Original Application No: NPS/WR/014615            Original Start Date: -            Expiry Date: -            Issue No: 104            Version Start Date: 26/9/2013            Version End Date:</p>
Not shown	763.0	E	488110 104250	<p>Licence No: 10/41/531316            Details: Spray Irrigation - Direct            Direct Source: Southern Region Groundwater            Point: A Well At Springfields, Upper Bognor Road, drayton            Data Type: Point</p> <p>Annual Volume (m<sup>3</sup>): 1363            Max Daily Volume (m<sup>3</sup>): 68.1            Original Application No: -            Original Start Date: -            Expiry Date: -            Issue No: 103            Version Start Date: 4/9/2012            Version End Date:</p>
Not shown	930.0	NE	488060 104850	<p>Licence No: 10/41/531310            Details: Mineral Washing            Direct Source: Southern Region Groundwater            Point: Chichester Gravel Pits Point 6            Data Type: Point</p> <p>Annual Volume (m<sup>3</sup>): 7727273            Max Daily Volume (m<sup>3</sup>): 27273            Original Application No: NPS/WR/014615            Original Start Date: -            Expiry Date: -            Issue No: 104            Version Start Date: 26/9/2013            Version End Date:</p>
Not shown	953.0	E	488260 103940	<p>Licence No: 10/41/531326            Details: Spray Irrigation - Direct            Direct Source: Southern Region Groundwater            Point: Point A At Brick Kiln Farm, Drayton            Data Type: Point</p> <p>Annual Volume (m<sup>3</sup>): -            Max Daily Volume (m<sup>3</sup>): -            Original Application No: 169/0391            Original Start Date: -            Expiry Date: -            Issue No: 100            Version Start Date: 27/10/1980            Version End Date:</p>
Not shown	1034.0	S	487120 103200	<p>Licence No: 10/41/531322            Details: Spray Irrigation - Direct            Direct Source: Southern Region Groundwater            Point: Point South Of Chichester By Pass            Data Type: Point</p> <p>Annual Volume (m<sup>3</sup>): 7273.6            Max Daily Volume (m<sup>3</sup>): 545.5            Original Application No: -            Original Start Date: -            Expiry Date: -            Issue No: 101            Version Start Date: 10/6/2009            Version End Date:</p>
Not shown	1066.0	NE	488200 104890	<p>Licence No: 10/41/531310            Details: Mineral Washing            Direct Source: Southern Region Groundwater            Point: Chichester Gravel Pits Point 5            Data Type: Point</p> <p>Annual Volume (m<sup>3</sup>): 7727273            Max Daily Volume (m<sup>3</sup>): 27273            Original Application No: NPS/WR/014615            Original Start Date: -            Expiry Date: -            Issue No: 104            Version Start Date: 26/9/2013            Version End Date:</p>
Not shown	1106.0	NW	486370 104840	<p>Licence No: 10/41/521701            Details: Non-Evaporative Cooling            Direct Source: Southern Region Groundwater            Point: East Walls, Chichester            Data Type: Point</p> <p>Annual Volume (m<sup>3</sup>): -            Max Daily Volume (m<sup>3</sup>): -            Original Application No: WR.0023            Original Start Date: -            Expiry Date: -            Issue No: 100            Version Start Date: 11/1/1966            Version End Date:</p>

ID	Distance (m)	Direction	NGR	Details	
Not shown	1120.0	NE	487860 105260	Licence No: 10/41/531310 Details: Mineral Washing Direct Source: Southern Region Groundwater Point: Chichester Gravel Pits Point 2 Data Type: Point	Annual Volume (m <sup>3</sup> ): 7727273 Max Daily Volume (m <sup>3</sup> ): 27273 Original Application No: NPS/WR/014615 Original Start Date: - Expiry Date: - Issue No: 104 Version Start Date: 26/9/2013 Version End Date:
Not shown	1124.0	NE	488270 104890	Licence No: 10/41/531310 Details: Mineral Washing Direct Source: Southern Region Groundwater Point: Chichester Gravel Pits Point 4 Data Type: Point	Annual Volume (m <sup>3</sup> ): 7727273 Max Daily Volume (m <sup>3</sup> ): 27273 Original Application No: NPS/WR/014615 Original Start Date: - Expiry Date: - Issue No: 104 Version Start Date: 26/9/2013 Version End Date:
Not shown	1175.0	SW	486440 103450	Licence No: 10/41/530107 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: Eastern Farm, Kingsham, Chichester Data Type: Point	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: WR.0303 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/2/1996 Version End Date:
Not shown	1180.0	NE	488210 105060	Licence No: 10/41/531310 Details: Mineral Washing Direct Source: Southern Region Groundwater Point: Chichester Gravel Pits Point 3 Data Type: Point	Annual Volume (m <sup>3</sup> ): 7727273 Max Daily Volume (m <sup>3</sup> ): 27273 Original Application No: NPS/WR/014615 Original Start Date: - Expiry Date: - Issue No: 104 Version Start Date: 26/9/2013 Version End Date:
Not shown	1298.0	NE	488070 105340	Licence No: 10/41/531310 Details: Mineral Washing Direct Source: Southern Region Groundwater Point: Chichester Gravel Pits Point 1 Data Type: Point	Annual Volume (m <sup>3</sup> ): 7727273 Max Daily Volume (m <sup>3</sup> ): 27273 Original Application No: NPS/WR/014615 Original Start Date: - Expiry Date: - Issue No: 104 Version Start Date: 26/9/2013 Version End Date:
Not shown	1367.0	SE	488180 103130	Licence No: 27/189 Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: Borehole Into Valley Gravels, Leythorne Nursery Data Type: Point	Annual Volume (m <sup>3</sup> ): 34095 Max Daily Volume (m <sup>3</sup> ): 388 Original Application No: 169/1516 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 16/6/2009 Version End Date:
Not shown	1439.0	SE	488150 103020	Licence No: 10/41/531323 Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: A Well At Leythorne Nurseries, Chichester Data Type: Point	Annual Volume (m <sup>3</sup> ): 18184 Max Daily Volume (m <sup>3</sup> ): 181.8 Original Application No: WR.0372 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 10/6/2009 Version End Date:
Not shown	1440.0	SW	486290 103220	Licence No: 10/41/530103 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: Kingsham Farm Estate, Chichester Data Type: Point	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: WR.0609 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/2/1996 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1599.0	NE	488780 104950	Licence No: 27/165 Details: Horticultural Watering Direct Source: Southern Region Groundwater Point: Point A At Shopwyke, Chichester Data Type: Point	Annual Volume (m <sup>3</sup> ): 4500 Max Daily Volume (m <sup>3</sup> ): 23 Original Application No: 169/0950 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/4/2008 Version End Date:
Not shown	1611.0	SE	488170 102830	Licence No: 27/202 Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: Catchpit Into Head Gravel At Runcton Marked Point A Data Type: Point	Annual Volume (m <sup>3</sup> ): 25000 Max Daily Volume (m <sup>3</sup> ): 150 Original Application No: NPS/WR/07390 Original Start Date: 26/6/2003 Expiry Date: 31/3/2016 Issue No: 2 Version Start Date: 13/7/2011 Version End Date:
Not shown	1642.0	NW	486215 105487	Licence No: SO/041/0027/008 Details: Heat Pump Direct Source: Southern Region Groundwater Point: Borehole 2 Data Type: Point	Annual Volume (m <sup>3</sup> ): 52600 Max Daily Volume (m <sup>3</sup> ): 154 Original Application No: NPS/WR/014120 Original Start Date: 30/4/2014 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: 30/4/2014 Version End Date:
Not shown	1649.0	NW	486187 105470	Licence No: SO/041/0027/008 Details: Heat Pump Direct Source: Southern Region Groundwater Point: Borehole 1 Data Type: Point	Annual Volume (m <sup>3</sup> ): 52600 Max Daily Volume (m <sup>3</sup> ): 154 Original Application No: NPS/WR/014120 Original Start Date: 30/4/2014 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: 30/4/2014 Version End Date:
Not shown	1666.0	N	487950 105820	Licence No: 27/173 Details: Process Water Direct Source: Southern Region Groundwater Point: Point A At Westhampnett Gravel Pit Data Type: Point	Annual Volume (m <sup>3</sup> ): 17600 Max Daily Volume (m <sup>3</sup> ): 64 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 19/5/2008 Version End Date:
Not shown	1691.0	N	486690 105840	Licence No: SO/041/0027/001 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Southern Region Groundwater Point: Point A - At St Richard's Hospital, Chichester Data Type: Point	Annual Volume (m <sup>3</sup> ): 43000 Max Daily Volume (m <sup>3</sup> ): 300 Original Application No: NPSWR000422 Original Start Date: 26/5/2009 Expiry Date: 31/3/2016 Issue No: 1 Version Start Date: 26/5/2009 Version End Date:
Not shown	1696.0	NW	486100 105450	Licence No: 27/178 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Southern Region Groundwater Point: Point A At St Richards Hospital Data Type: Point	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: 169/1369 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 6/5/1994 Version End Date:
Not shown	1720.0	NE	488850 105080	Licence No: 10/41/531317 Details: Horticultural Watering Direct Source: Southern Region Groundwater Point: Shopwyke, Oving Data Type: Point	Annual Volume (m <sup>3</sup> ): 4200 Max Daily Volume (m <sup>3</sup> ): 21 Original Application No: NPS/WR/016010 Original Start Date: - Expiry Date: - Issue No: 102 Version Start Date: 14/5/2014 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1845.0	NE	488500 105700	Licence No: 27/199 Details: Pollution Remediation Direct Source: Southern Region Groundwater Point: Westhampnett Landfill Site Data Type: Point	Annual Volume (m <sup>3</sup> ): 730000 Max Daily Volume (m <sup>3</sup> ): 3000 Original Application No: 169/1742 Original Start Date: 5/3/2001 Expiry Date: - Issue No: 1 Version Start Date: 5/3/2001 Version End Date:

## 5.4 Surface Water Abstraction Licences

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

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

ID	Distance (m)	Direction	NGR	Details	
Not shown	1619.0	E	488850 103610	Licence No: 10/41/531319 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: Point A On Watercourses At Merston, Chichester Data Type: Point	Annual Volume (m <sup>3</sup> ): 18184 Max Daily Volume (m <sup>3</sup> ): 909.2 Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 9/6/2009 Version End Date:
Not shown	1725.0	SW	485440 101950	Licence No: 10/41/530105 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: Chichester Canal Data Type: Line	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 23/3/2000 Version End Date:
Not shown	1753.0	SW	486230 102850	Licence No: 10/41/530105 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: Chichester Canal Points A-b Data Type: Line	Annual Volume (m <sup>3</sup> ): 26367 Max Daily Volume (m <sup>3</sup> ): 545.5 Application No: WR.0511 Original Start Date: - Expiry Date: - Issue No: 102 Version Start Date: 9/6/2009 Version End Date:

## 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? No

Database searched and no data found.

---

## 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/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

---

## 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	1382.0	W	485940 104160	River Name: Chichester Canal Reach: Donnington - Chichester End/Start of Stretch: Start of Stretch NGR	A	A	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	1382.0	W	485940 104160	River Name: Chichester Canal Reach: Donnington - Chichester End/Start of Stretch: Start of Stretch NGR	E	E	E	D	D

### 5.10 Detailed River Network

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

No

Database searched and no data found.

## 5.11 Surface Water Features

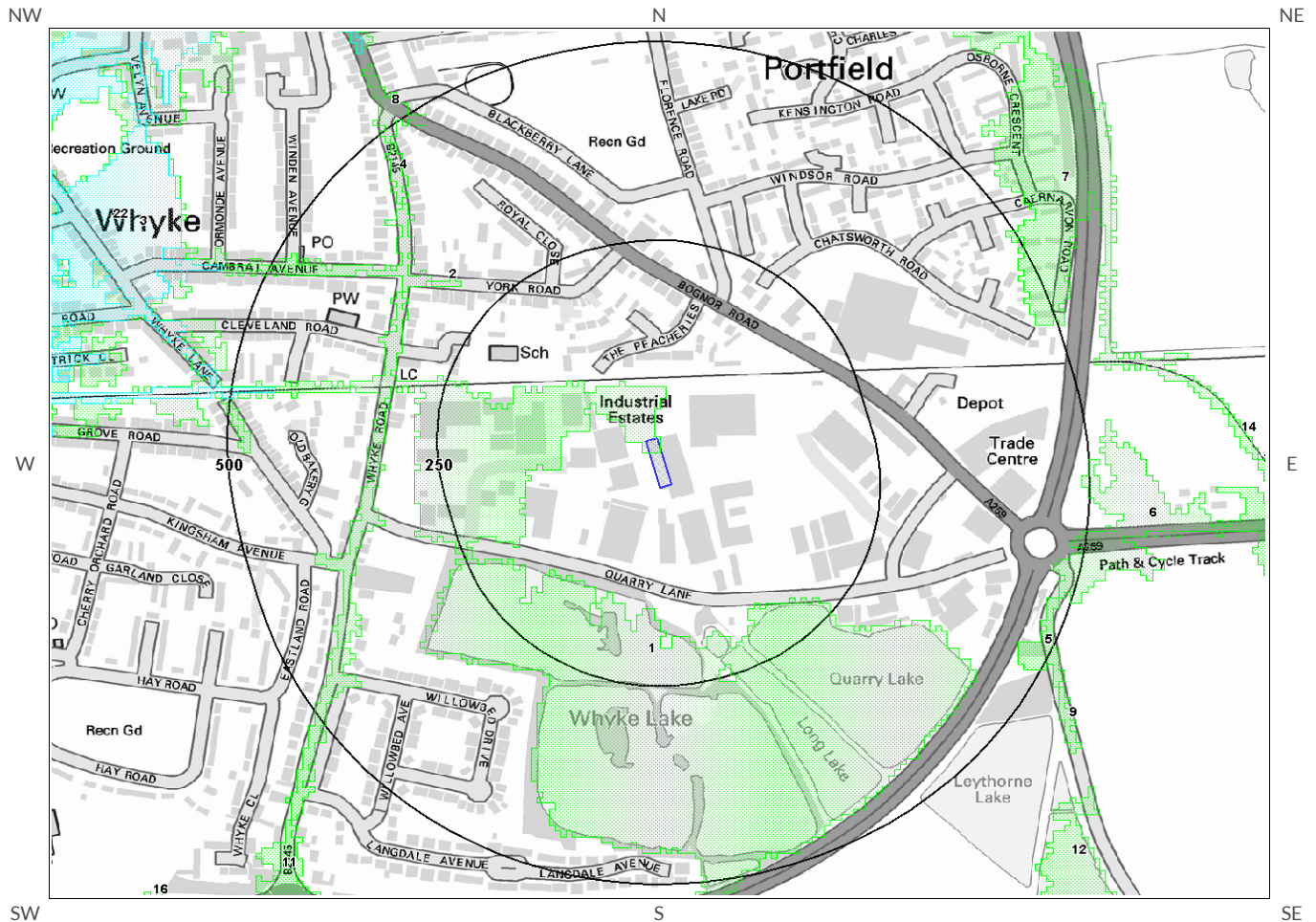
Are there any surface water features within 250m of the study site?

Yes

The following surface water records are not represented on mapping:

Distance (m)	Direction
142.0	S
167.0	S
183.0	S
196.0	SE
216.0	S








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



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



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-  Site Outline
-  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? Yes

The following floodplain records are represented as green shading on the Flood Map:

ID	Distance (m)	Direction	Update	Type
1	0.0	On Site	03-Nov-2014	Zone 2 - (Fluvial Models)

## 6.2 Zone 3 Flooding

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

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

Database searched and no data found.

## 6.3 Flood Defences

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

Database searched and no data found.

## 6.4 Areas benefiting from Flood Defences

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

## 6.5 Areas benefiting from Flood Storage

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

## 6.6 Groundwater Flooding Susceptibility Areas

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

Yes

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

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

---

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

Potential at Surface

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

---

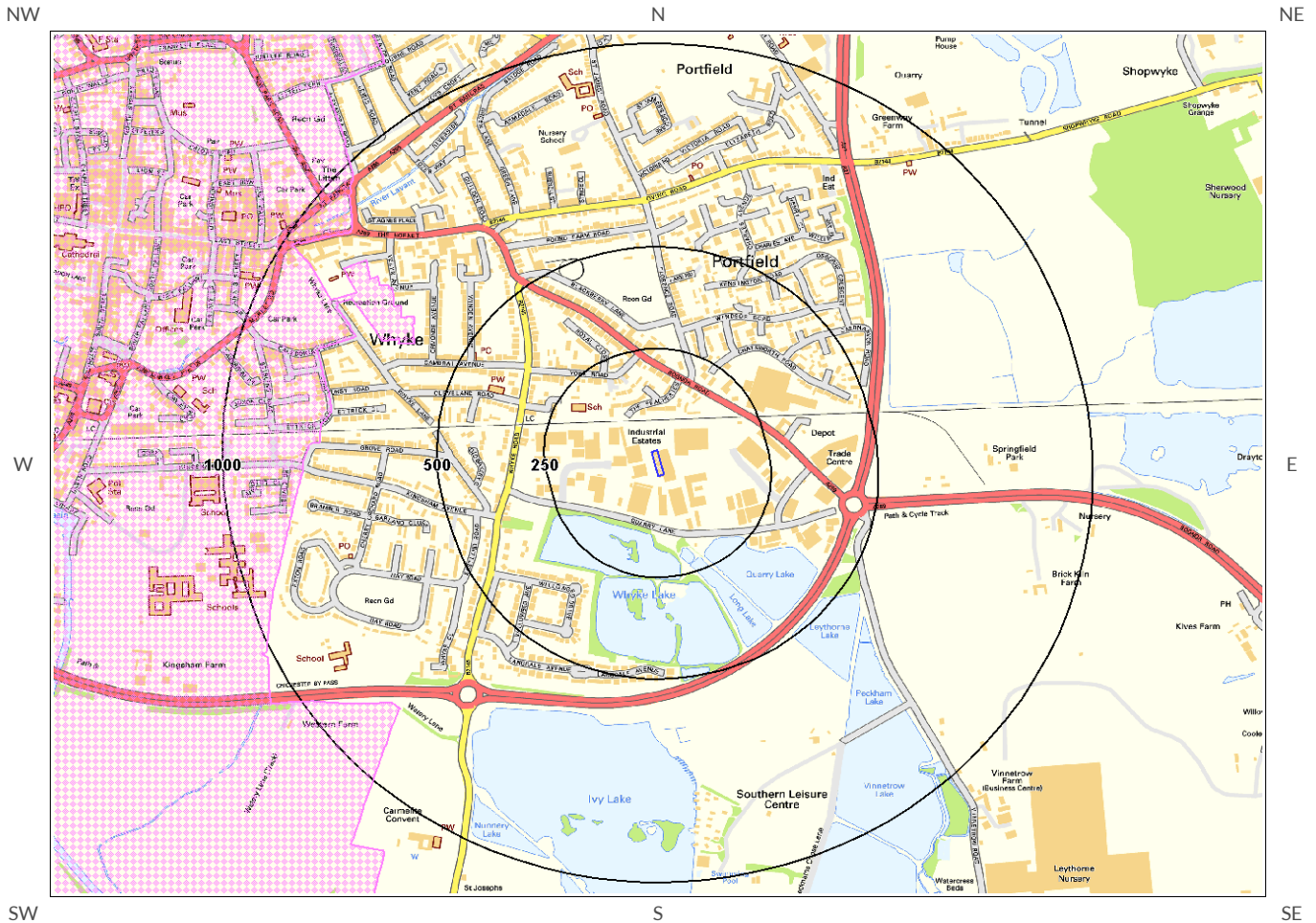
## 6.7 Groundwater Flooding Confidence Areas

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

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

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















# 7. Designated Environmentally Sensitive Sites Map



Designated Environmentally Sensitive Sites Map



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

0

Database searched and no data found.

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---



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

1

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

---

ID	Distance (m)	Direction	NVZ Name	Data Source
1	613.0	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? Negligible

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

---

Hazard
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.

---

---

### 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?

Moderate

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

---

**Hazard**

---

Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

---

---

### 8.1.5 Collapsible Rocks

What is the maximum Collapsible 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**

---

No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. 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

**CENTREMAPS**  
Telephone: 01886 832972  
groundsure@centremaps.co.uk  
CENTREMAPS, Brockamin House, Leigh, Worcester, London, WR6 5JU

Directors: M C Walker, MInst C.E.S., C M Walker,  
S J Hawkins BSc (Hons), S E Stewart BSc (Hons)  
Registered No. 1890261 Registered in England and Wales  
Registered Company: Laser Surveys Limited  
Brockamin House, Leigh, Worcester, WR6 5JU.

## British Geological Survey Enquiries

Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143.  
Fax: 0115 936 3276.  
Email: [enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)  
Web: [www.bgs.ac.uk](http://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](http://www.environment-agency.gov.uk)  
Email: [enquiries@environment-agency.gov.uk](mailto: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](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000



Public Health  
England

## The Coal Authority

200 Lichfield Lane  
Mansfield  
Notts NG18 4RG  
Tel: 0345 7626 848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)



The Coal  
Authority

## Ordnance Survey

Adanac Drive, Southampton  
SO16 0AS  
Tel: 08456 050505



## Local Authority

Authority: Chichester District Council  
Phone: 01243 785166  
Web: [www.chichester.gov.uk](http://www.chichester.gov.uk)  
Address: East Pallant House, Chichester, West Sussex, PO19 1TY

## Gemapping PLC

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



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

# Standard Terms and Conditions

## 1 Definitions

In these terms and conditions unless the context otherwise requires:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## 3 The Client's obligations

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

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

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

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

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

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

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

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

## 4 Reliance

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

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

(i) the Beneficiary,

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

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

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

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

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

## 5 Fees and Disbursements

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

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

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

## 6 Intellectual Property and Confidentiality

### 6.1 Subject to

(i) full payment of all relevant Fees and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

7.4 GroundSure shall not be liable for

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

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

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

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

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

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

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

## 8 GroundSure's right to suspend or terminate

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

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

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

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

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

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

## 9. Client's Right to Terminate and Suspend

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

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

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

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

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

(b) by their nature cannot be returned.

## 10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

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



GroundSure's possession or control; and

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

## 11 Anti-Bribery

11.1 The Client warrants that it shall:

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

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

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

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

## 12 General

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

# APPENDIX B

## Photographs

# Investigation Photographs

Project Ref: 14.8385

Site Name: Sussex House, Quarry Lane

1.



2.



3.



4.



- 1) East of the site with wood storage containers, looking north.
- 2) Timber treatment machine on east of the site, looking north.
- 3) Timber treatment machine to the north of the site
- 4) Timber treatment machine on east of the site, looking south.

# Investigation Photographs

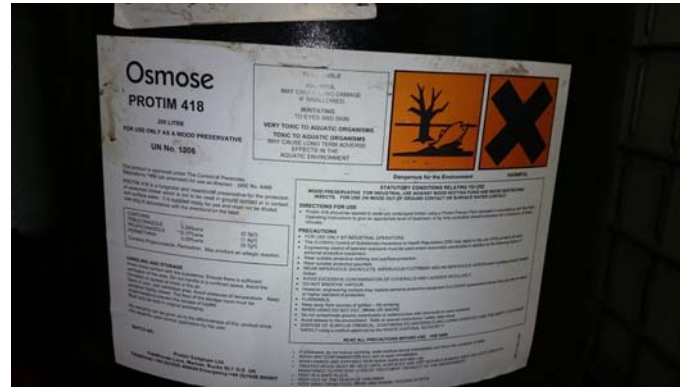
Project Ref:

Site Name:

5.



6.



7.



8.



- 5) Storage tank for tanalith E 8000
- 6) Storage tank for Protim 418.
- 7) Storage tank for Protim E406
- 8) Storage tank for Tanilith E8000.

# Investigation Photographs

Project Ref:

Site Name:

9.



10.



11.



12.



- 9) Base of chemical storage tanks on
- 10) Base of chemical storage drums on
- 11) WS1 0-1mbgl
- 12) WS1 1-4mbgl.

# Investigation Photographs

Project Ref:

Site Name:

13.



14.



15.



16.



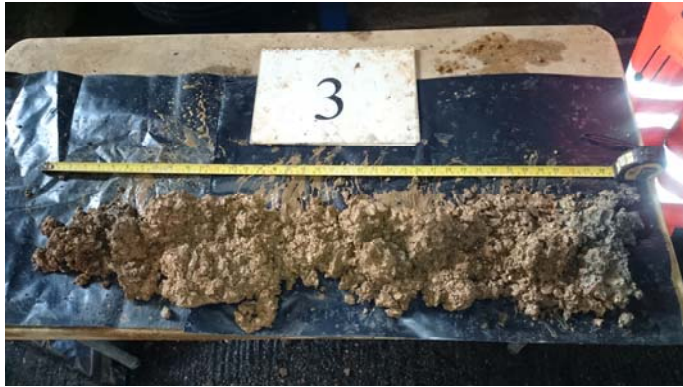
- 13) WS2 0-1mbgl
- 14) WS2 1-3mbgl.
- 15) WS2 3-4mbgl.
- 16) WS3 0-1mbgl.

# Investigation Photographs

Project Ref:

Site Name:

17.



18.



19.



- 17) WS3 1-2mbgl
- 18) WS3 3-4mbgl.
- 19) WS3 2-3mbgl.

# APPENDIX C

## Historic Maps



Ordnance Survey<sup>®</sup>  
Historical Mapping Extract

[www.centremapslive.com](http://www.centremapslive.com)

Site Details:

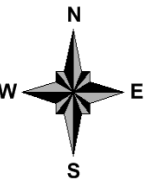
Client Ref: 26342  
Report Ref: CMAPS-CM-382999-26342-031214HIS  
Grid Ref: 487333, 104242

Map Name: County Series

Map date: 1875


Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1875  
Revised 1875  
Edition N/A  
Copyright N/A  
Levelled N/A

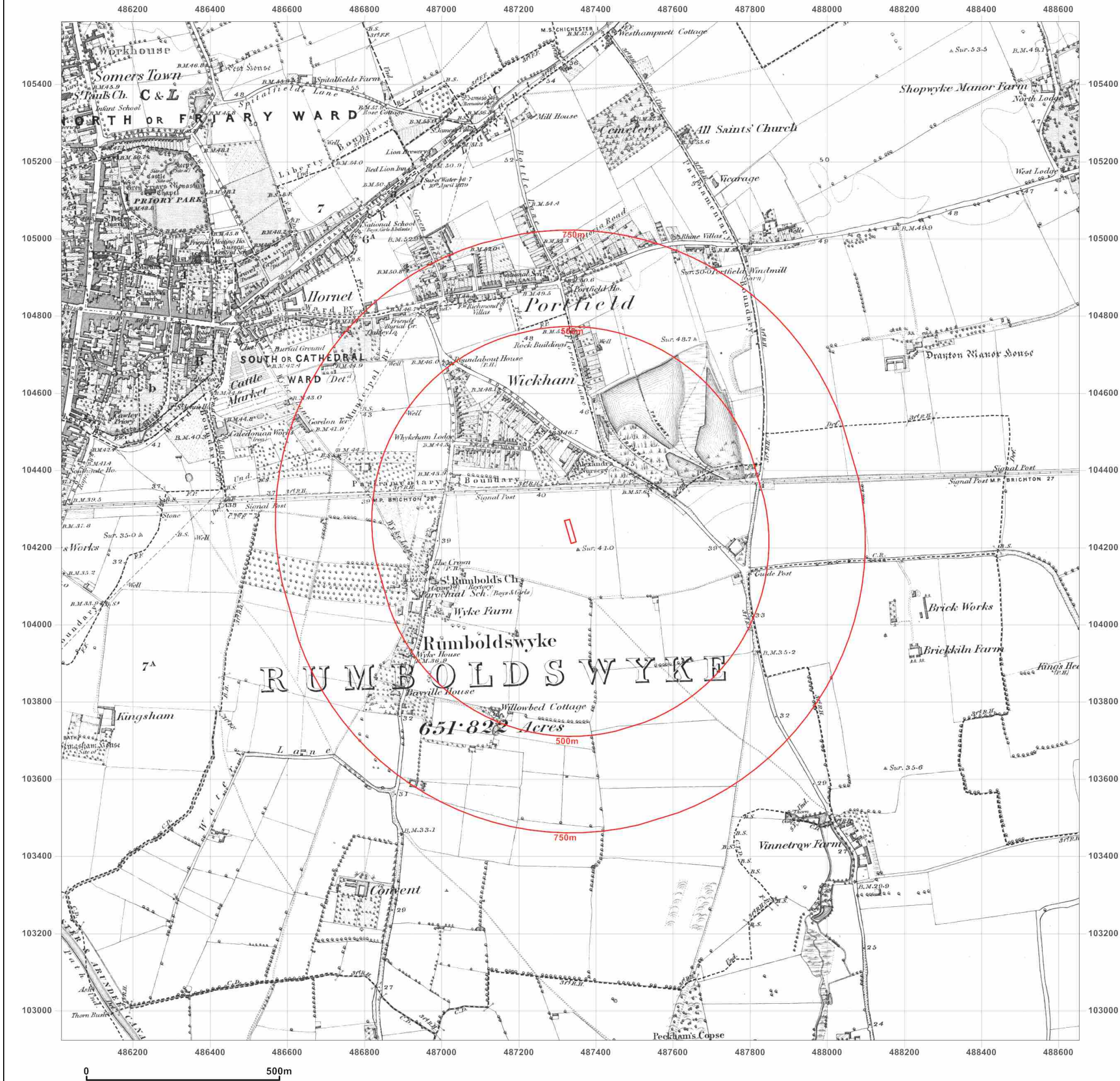
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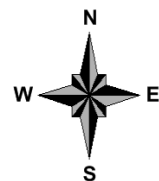
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Map Name: County Series

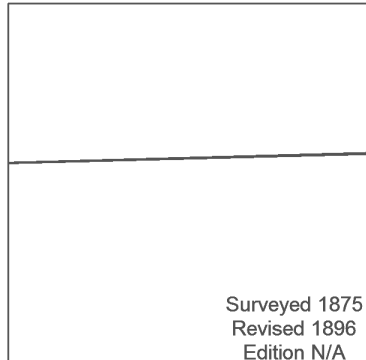
Map date: 1896

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1875  
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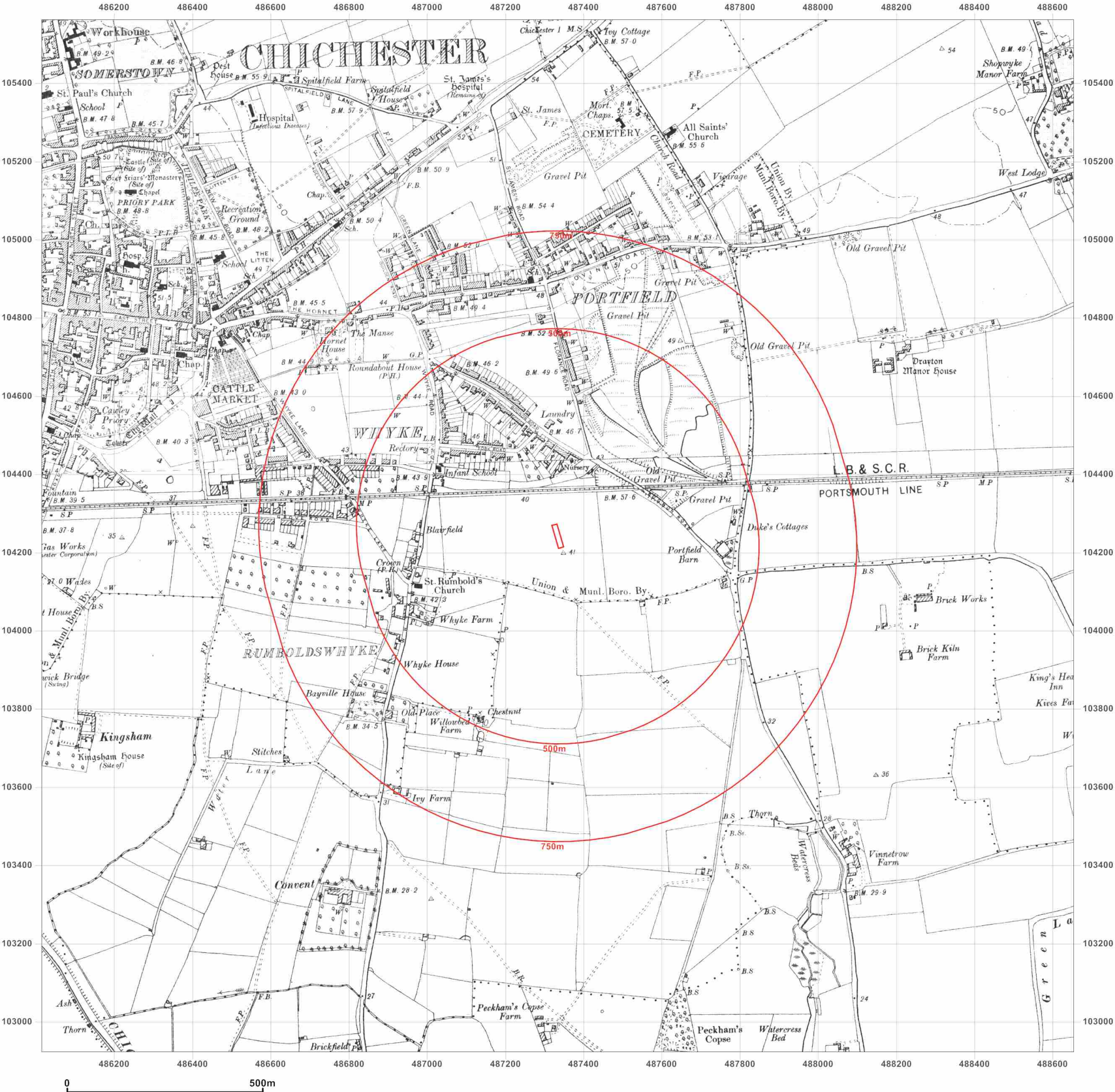


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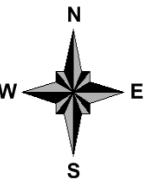
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Grid Ref: 487333, 104242

Map Name: County Series

Map date: 1909-1910

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1909  
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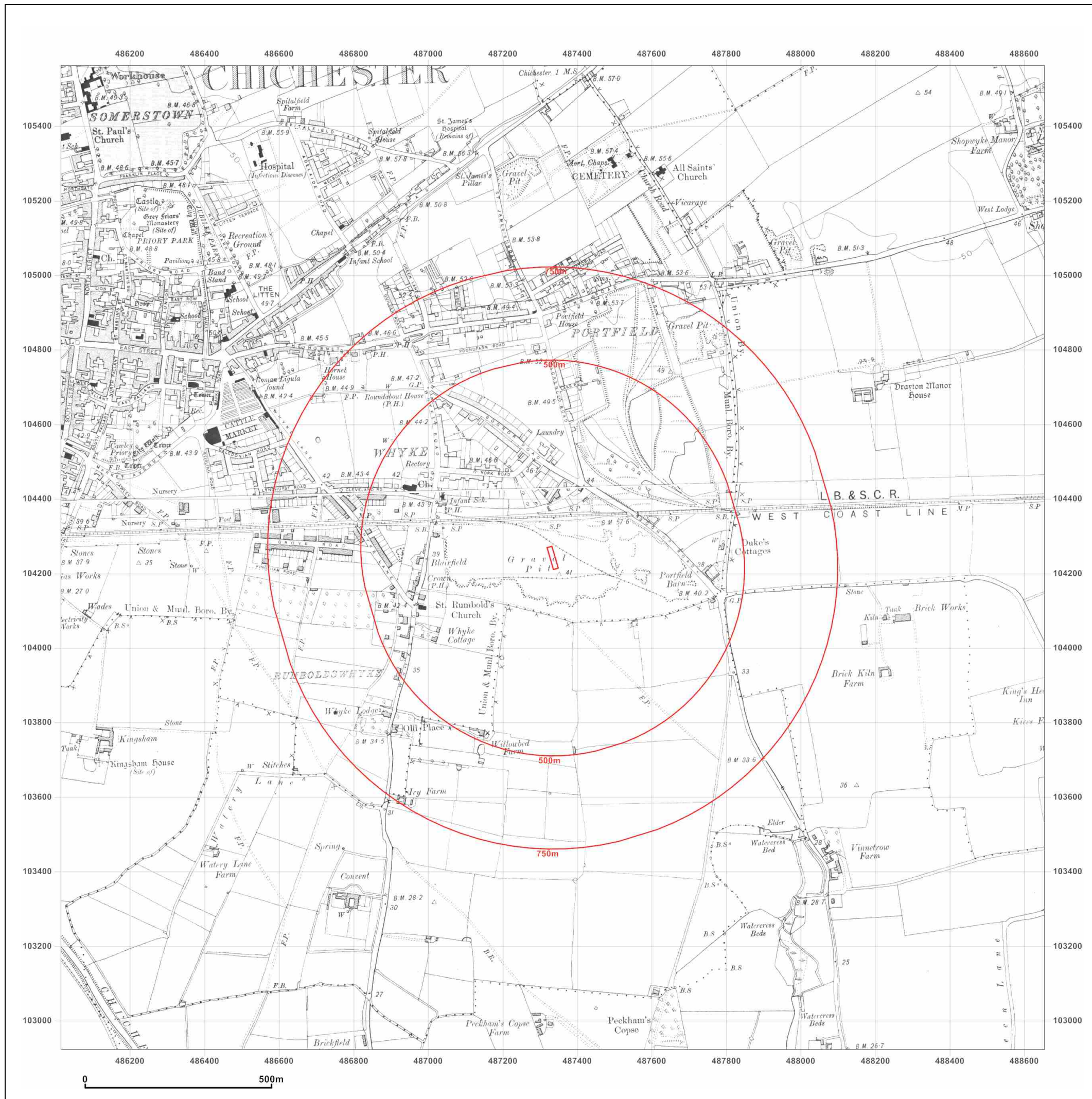


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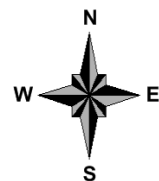
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Grid Ref: 487333, 104242

Map Name: County Series

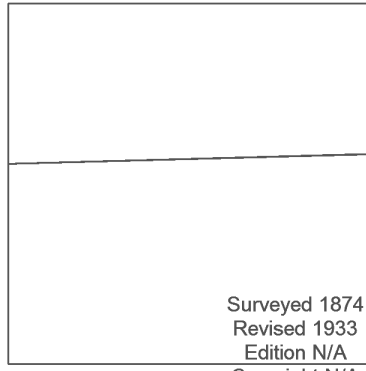
Map date: 1932-1933

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1874  
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Revised 1933  
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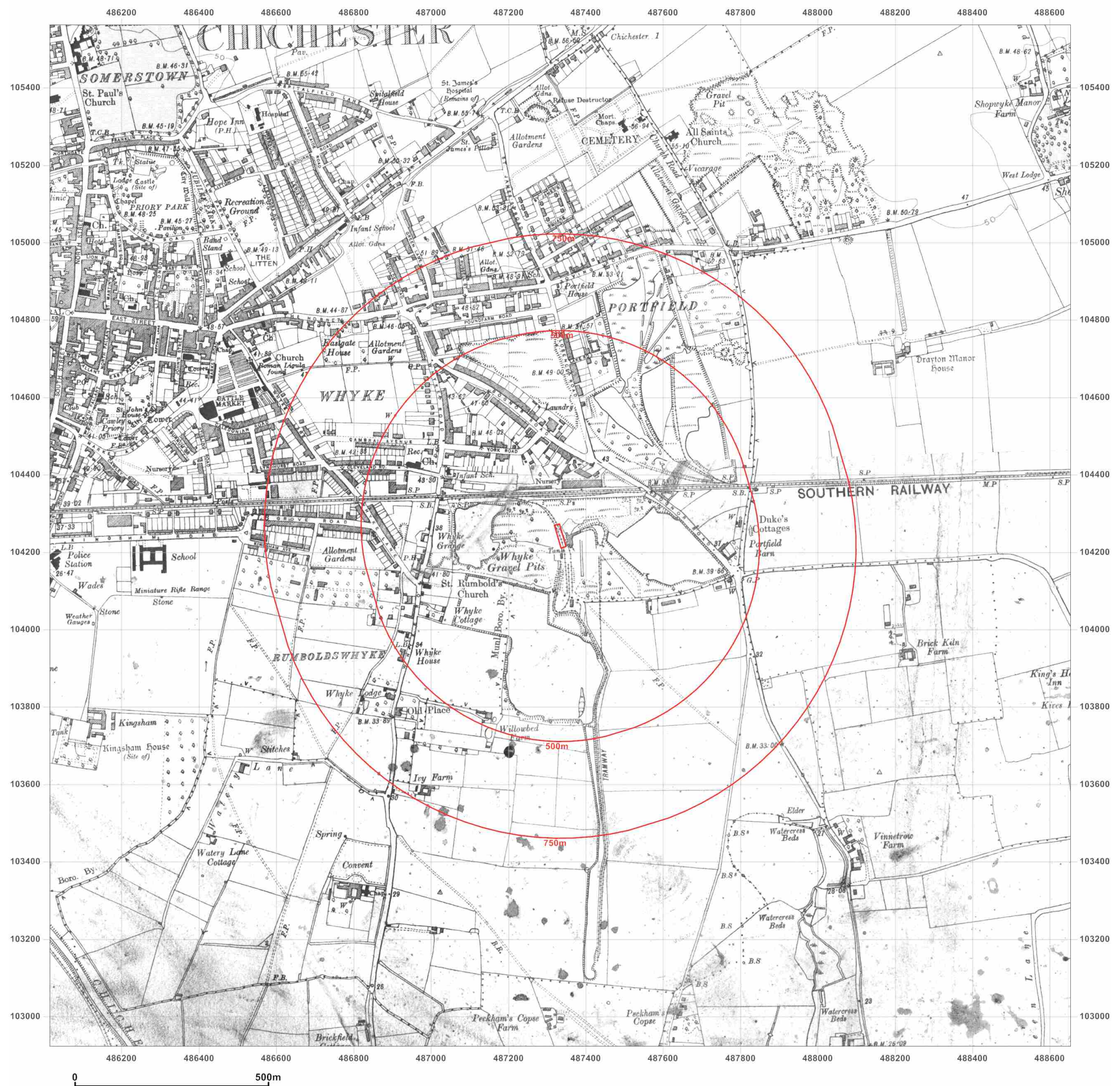


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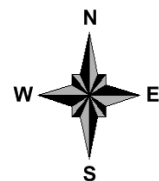
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Grid Ref: 487333, 104242

Map Name: County Series

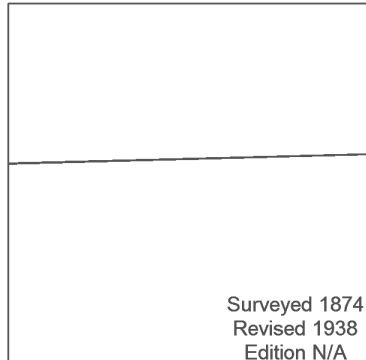
Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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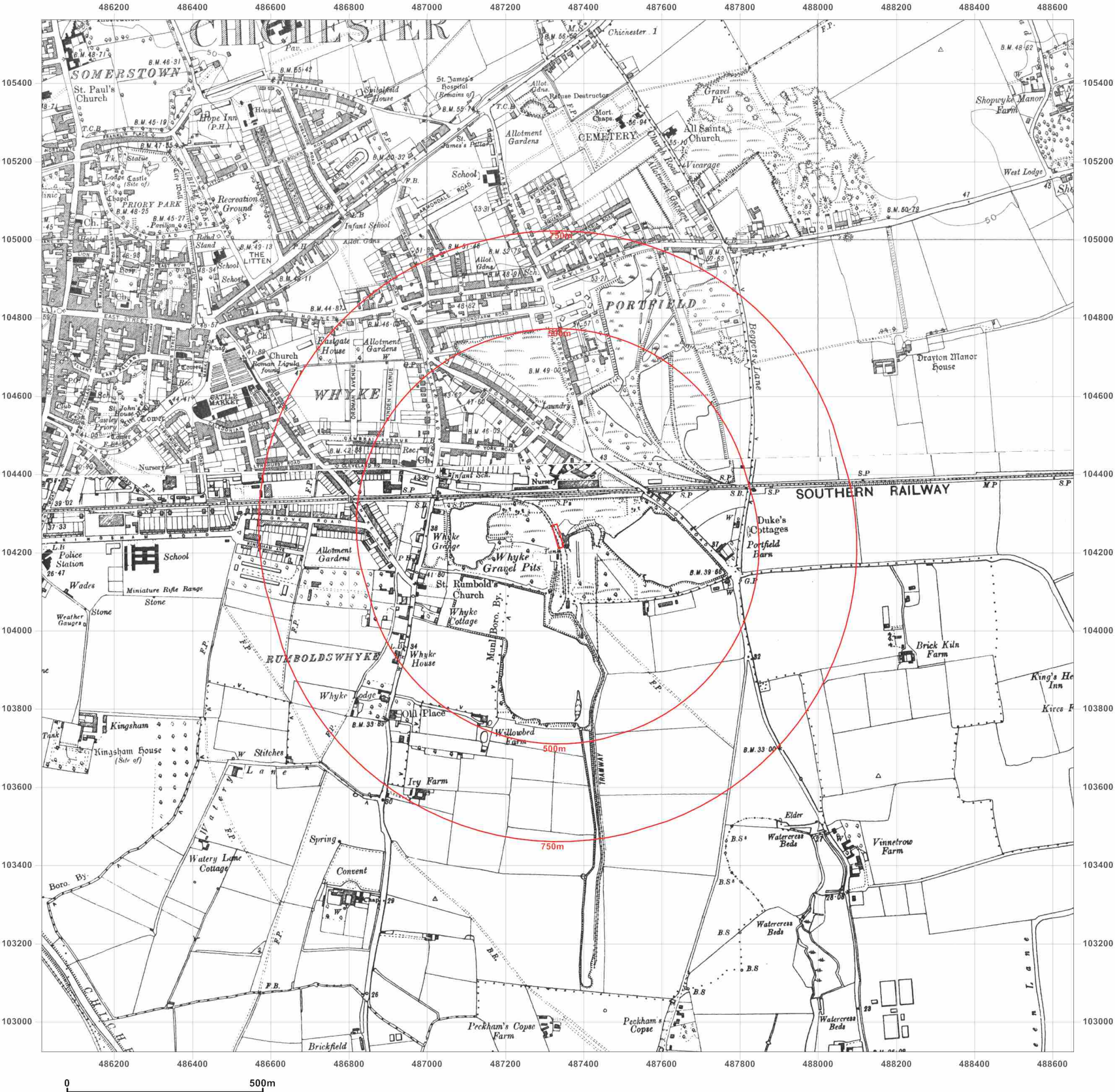


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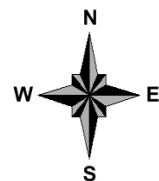
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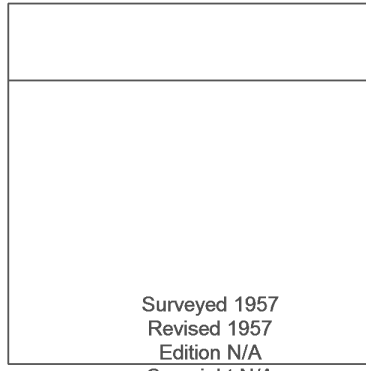
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Grid Ref: 487333, 104242

Map Name: Provisional  
Map date: 1957  
Scale: 1:10,560  
Printed at: 1:10,560



Surveyed 1957  
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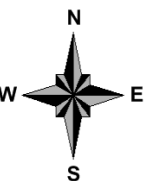
Client Ref: 26342  
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Grid Ref: 487333, 104242

Map Name: National Grid

Map date: 1973-1974

Scale: 1:10,000

Printed at: 1:10,000



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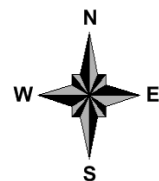
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Site Details:

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Grid Ref: 487333, 104242

Map Name: National Grid  
Map date: 1978  
Scale: 1:10,000  
Printed at: 1:10,000



Surveyed 1975  
Revised 1978  
Edition N/A  
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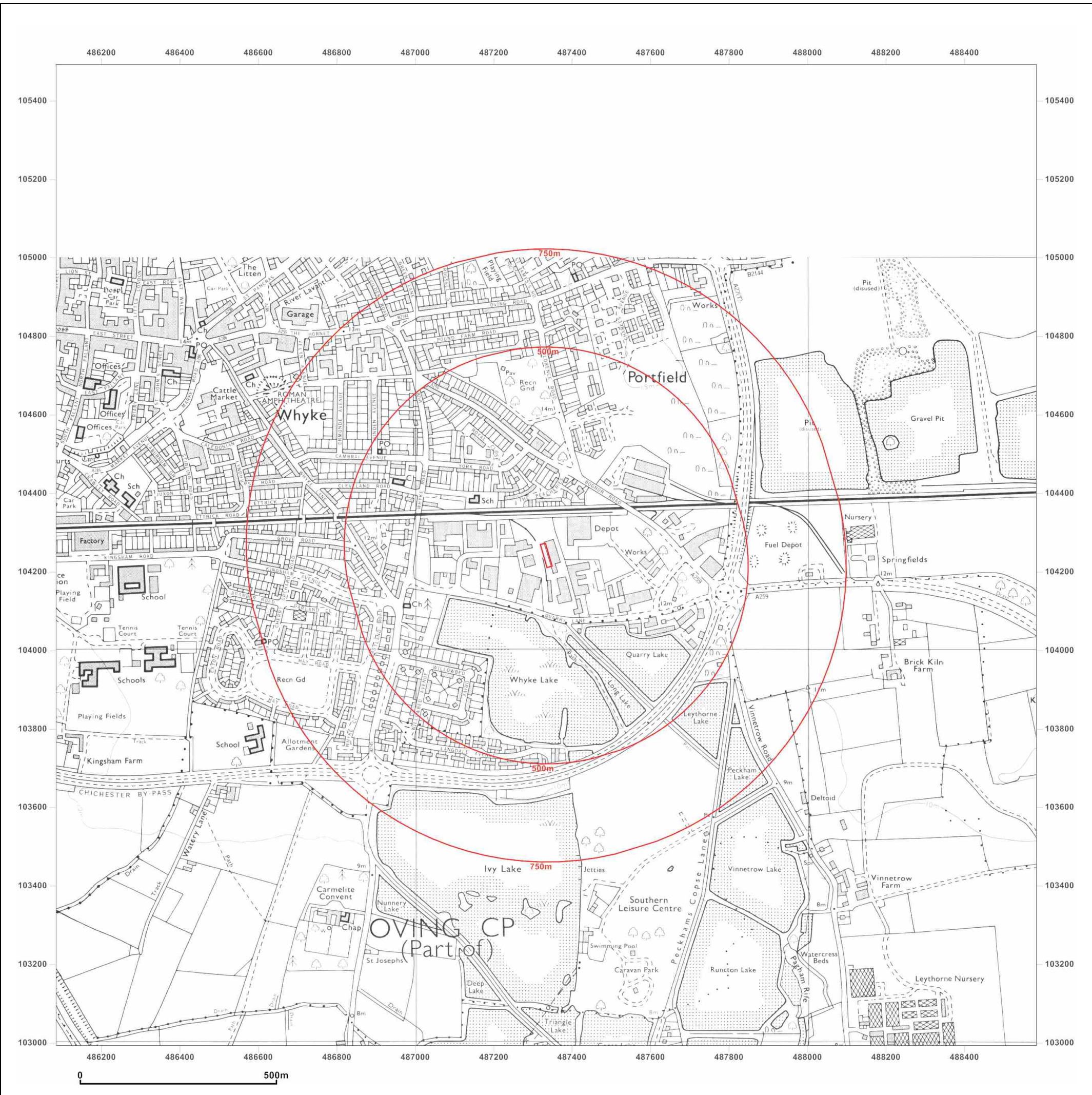
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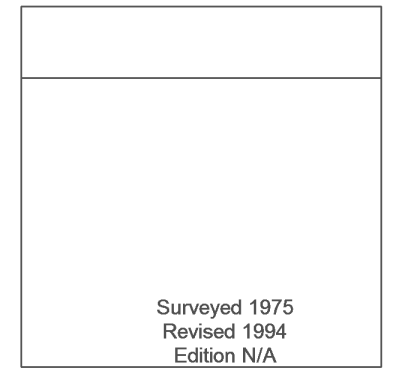
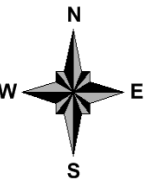
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Grid Ref: 487333, 104242

Map Name: National Grid

Map date: 1994

Scale: 1:10,000

Printed at: 1:10,000



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Revised 1994  
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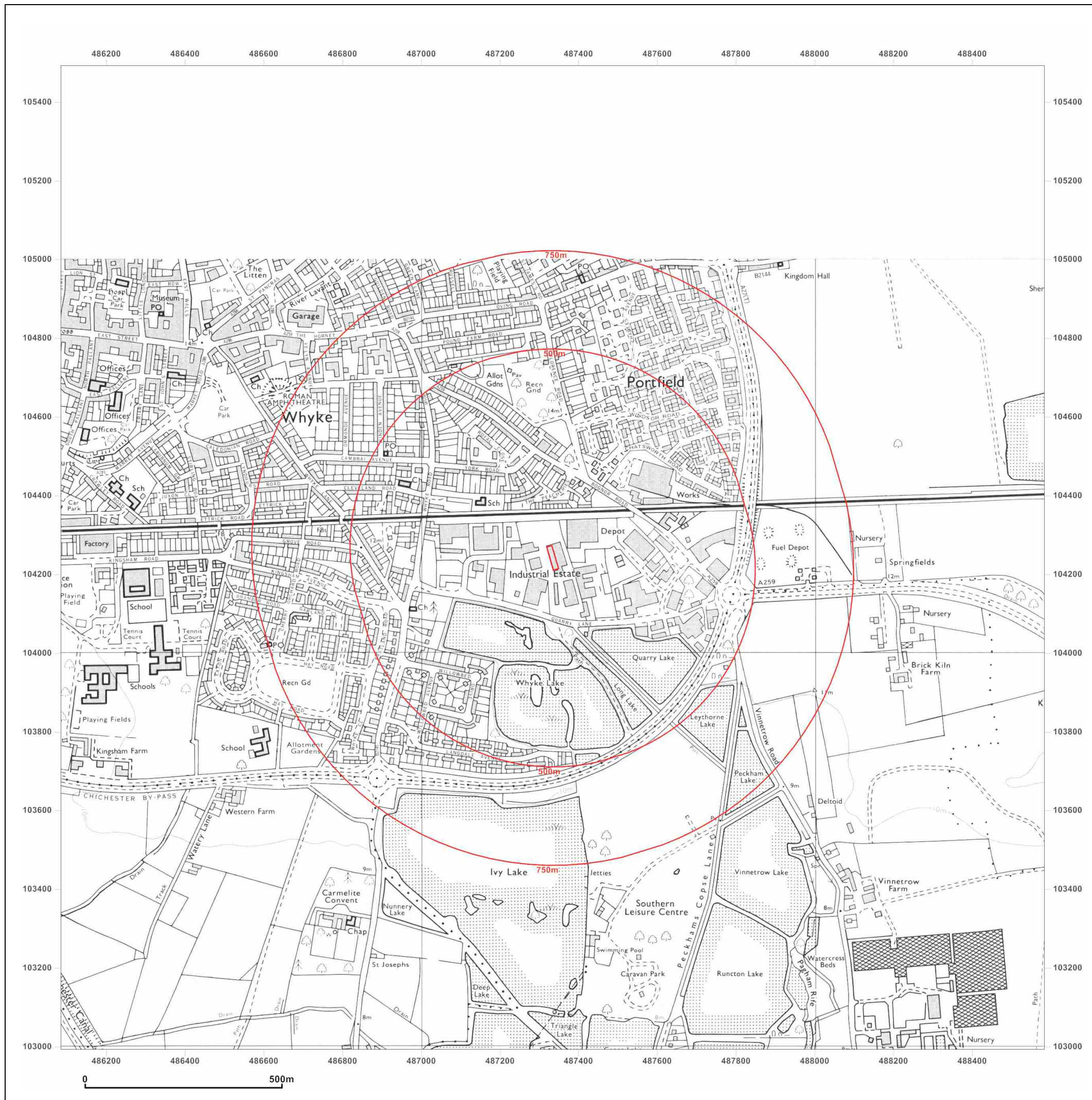


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Report Ref: CMAPS-CM-382999-26342-031214HIS  
Grid Ref: 487333, 104242

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000



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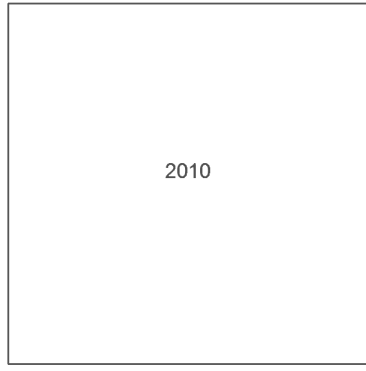
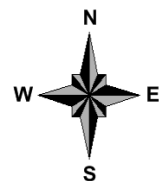
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Grid Ref: 487333, 104242

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



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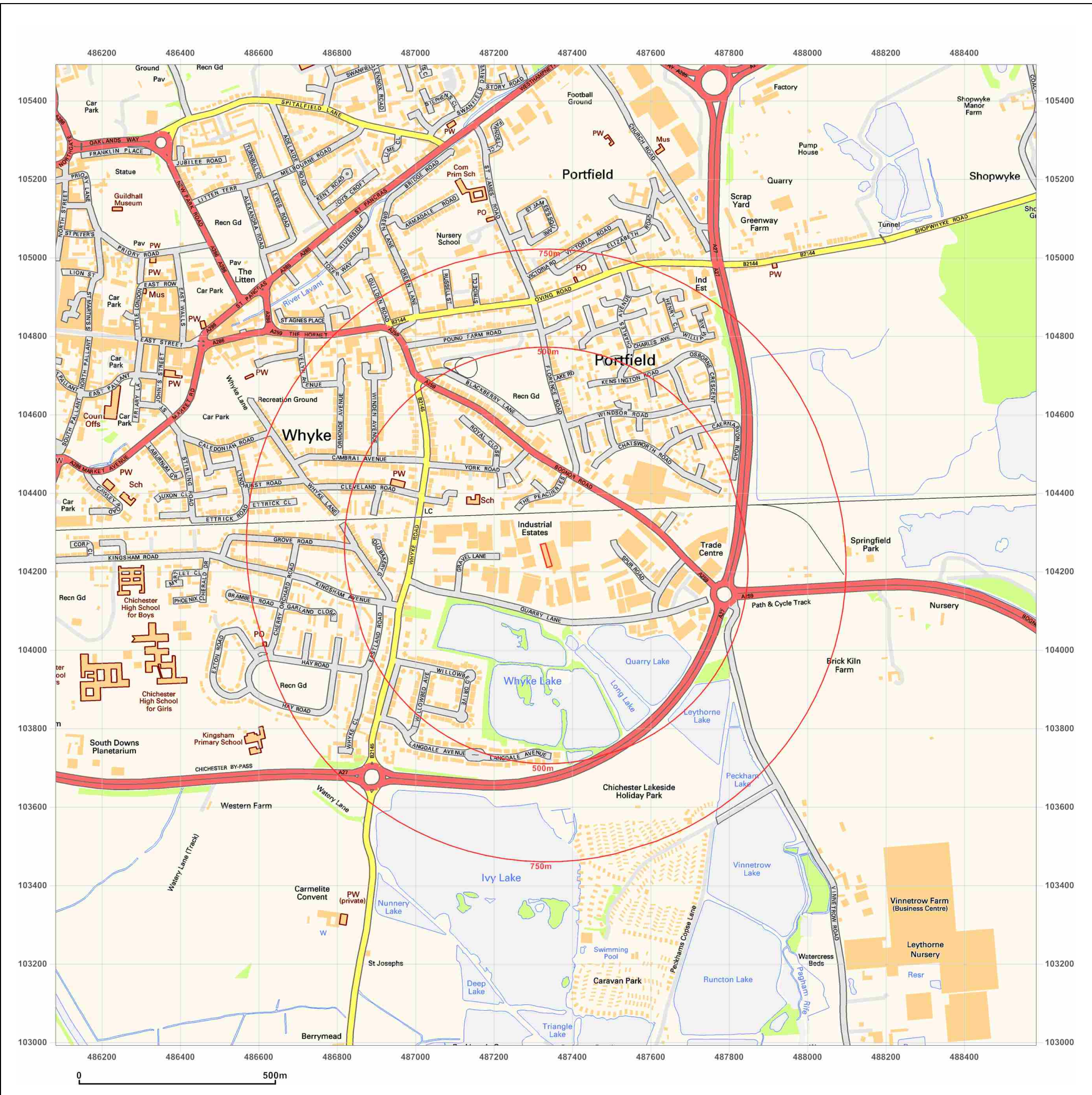


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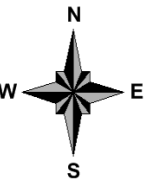
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Grid Ref: 487333, 104242

Map Name: National Grid

Map date: 2014

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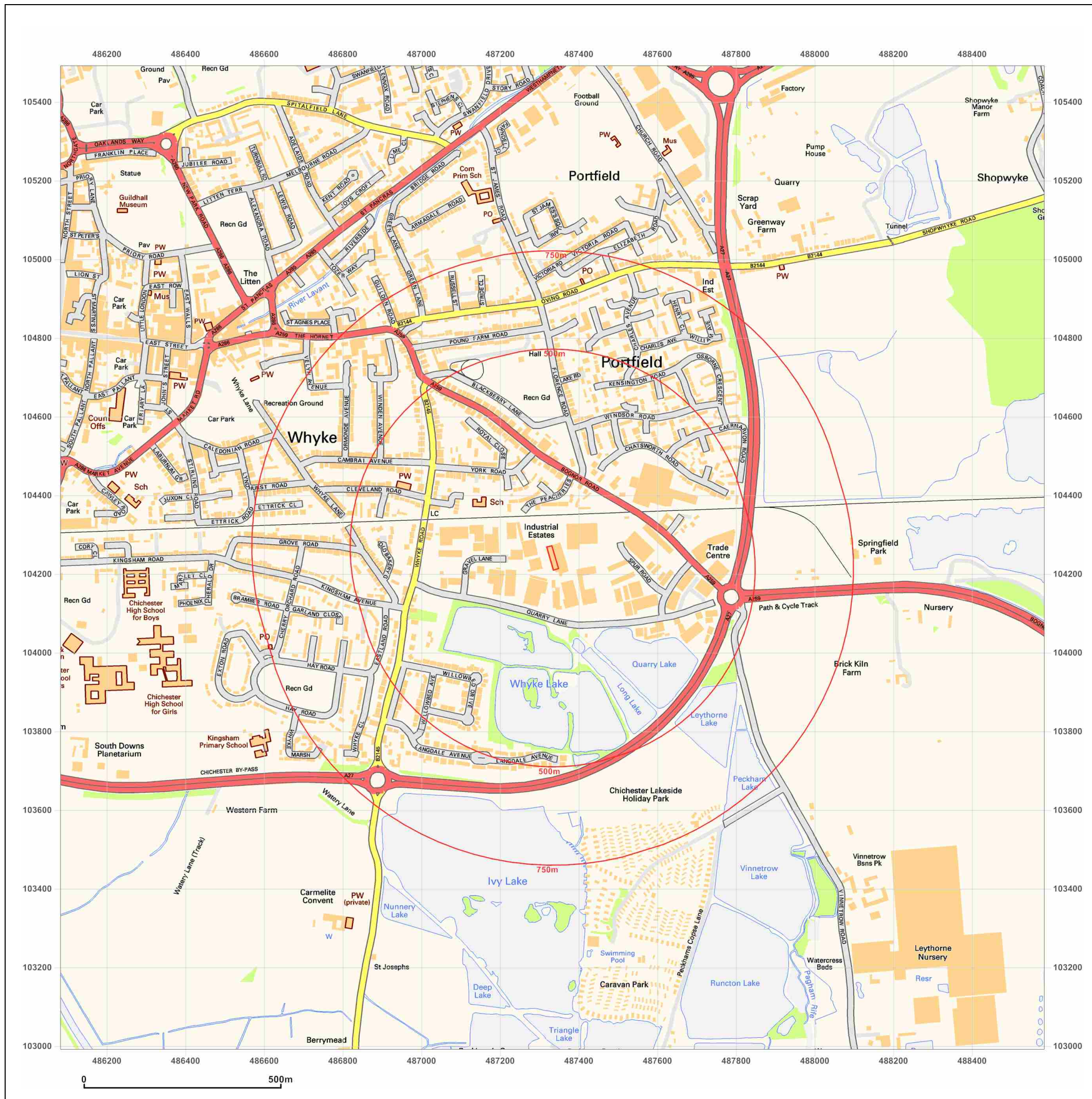


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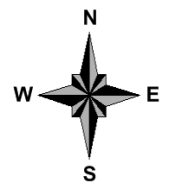
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Map Name: County Series

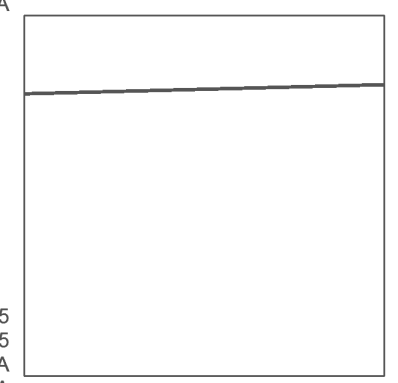
Map date: 1875-1877

Scale: 1:2,500

Printed at: 1:2,500



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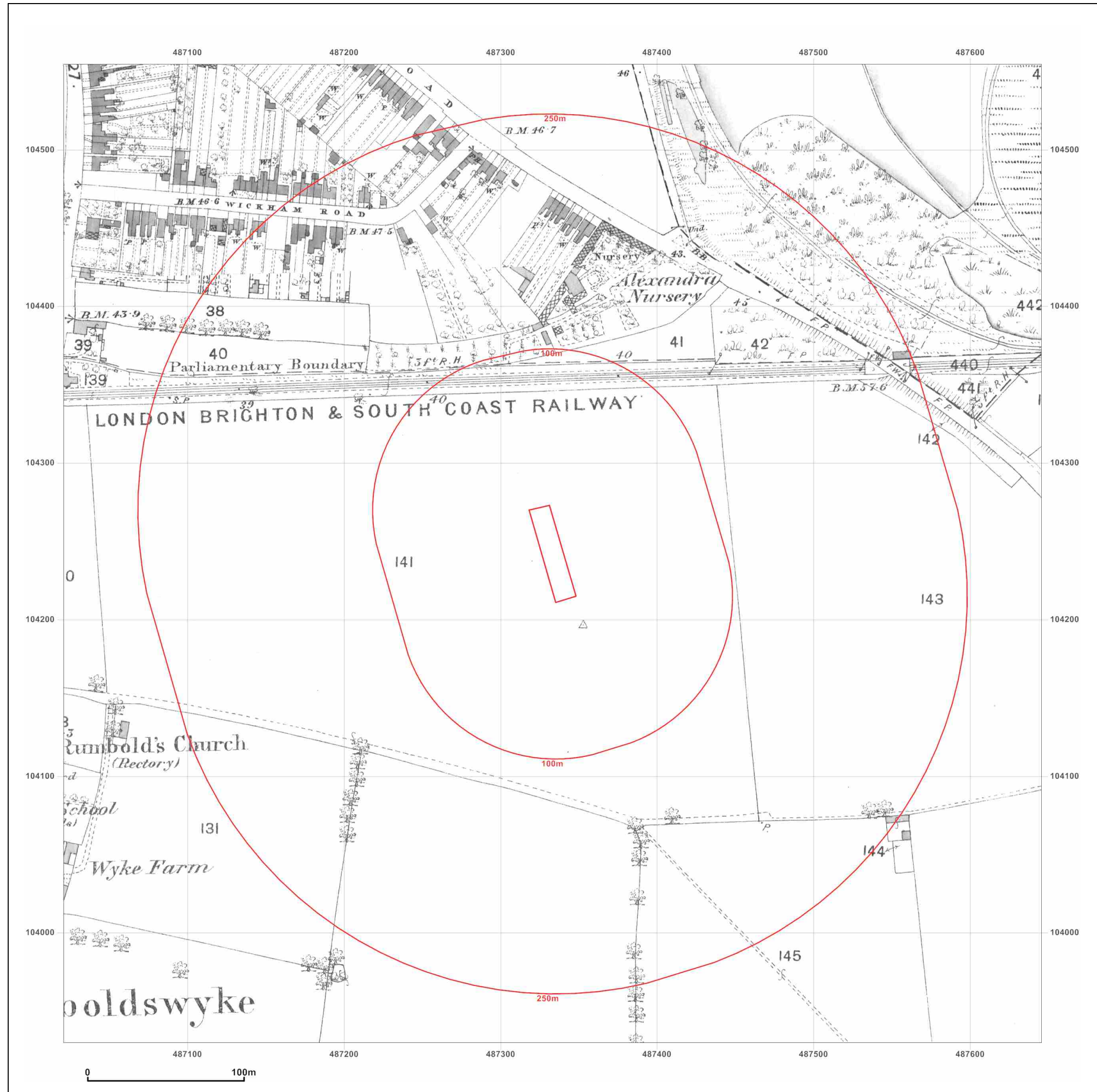


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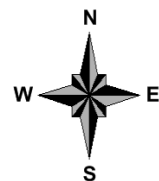
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Map Name: County Series

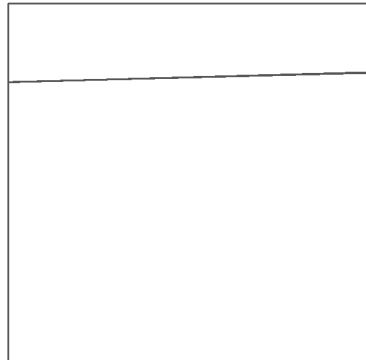
Map date: 1898

Scale: 1:2,500

Printed at: 1:2,500



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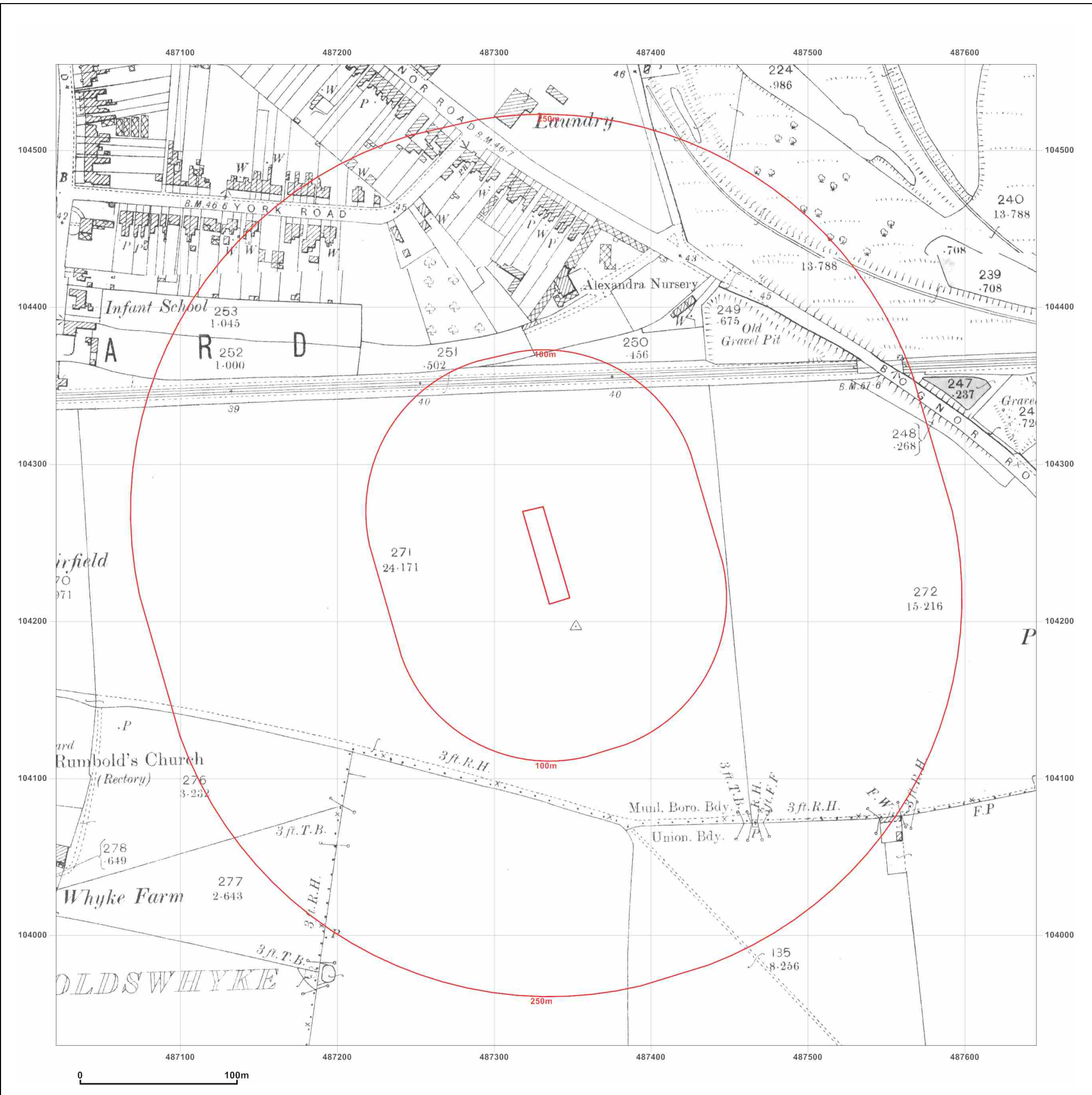


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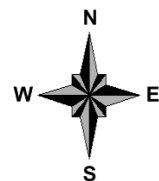
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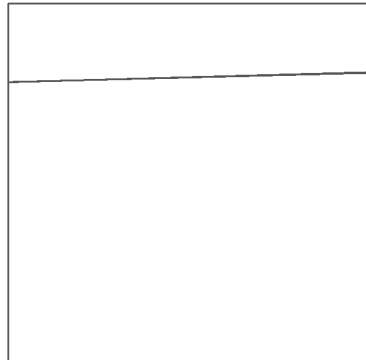
Map date: 1912

Scale: 1:2,500

Printed at: 1:2,500



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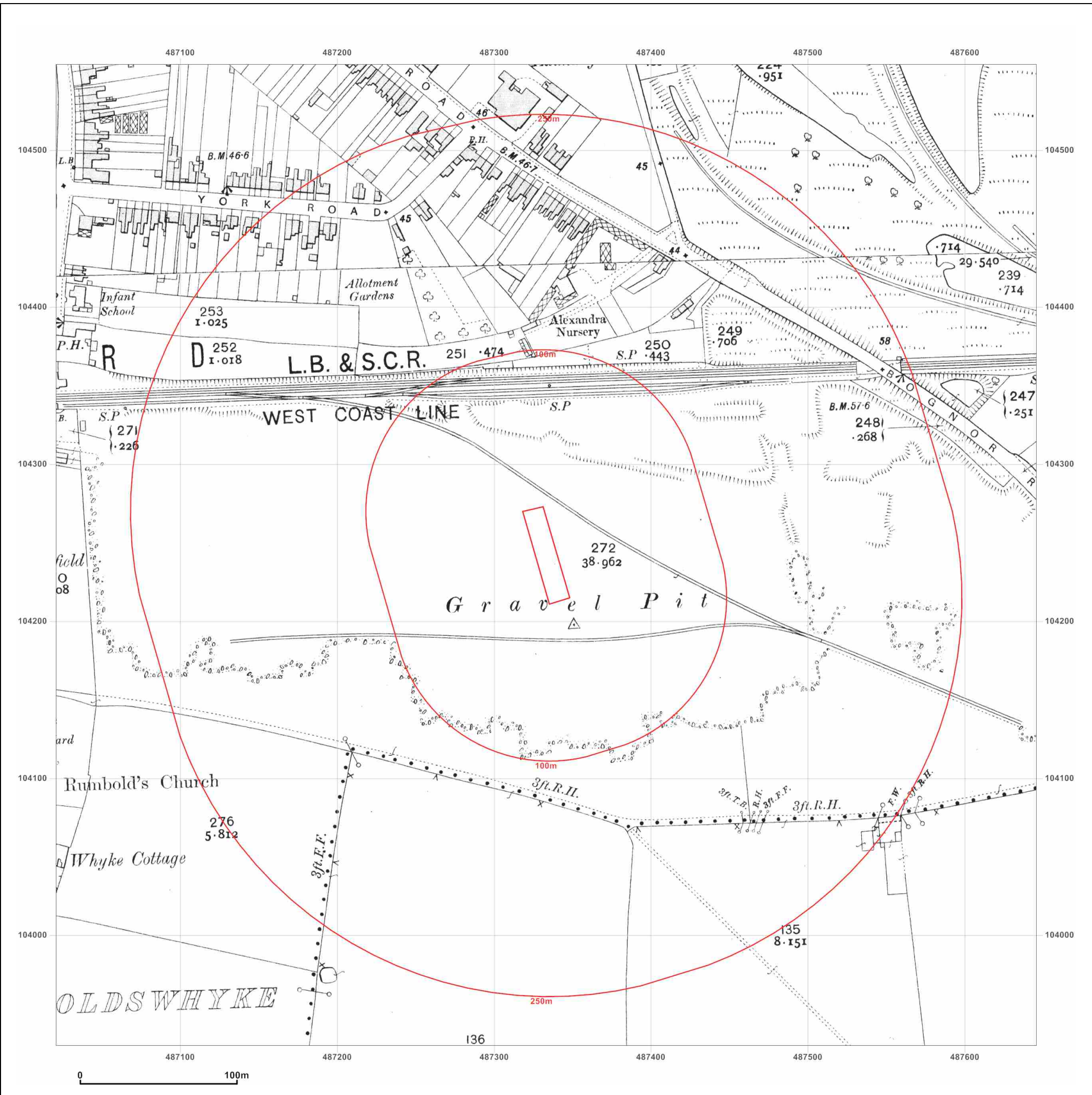


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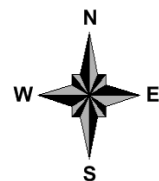
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Map Name: County Series

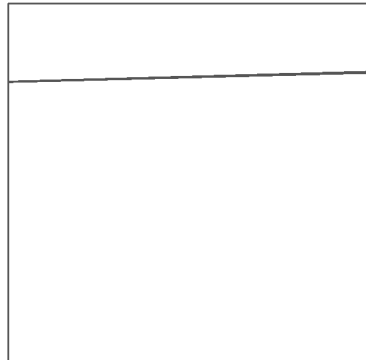
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Scale: 1:2,500

Printed at: 1:2,500



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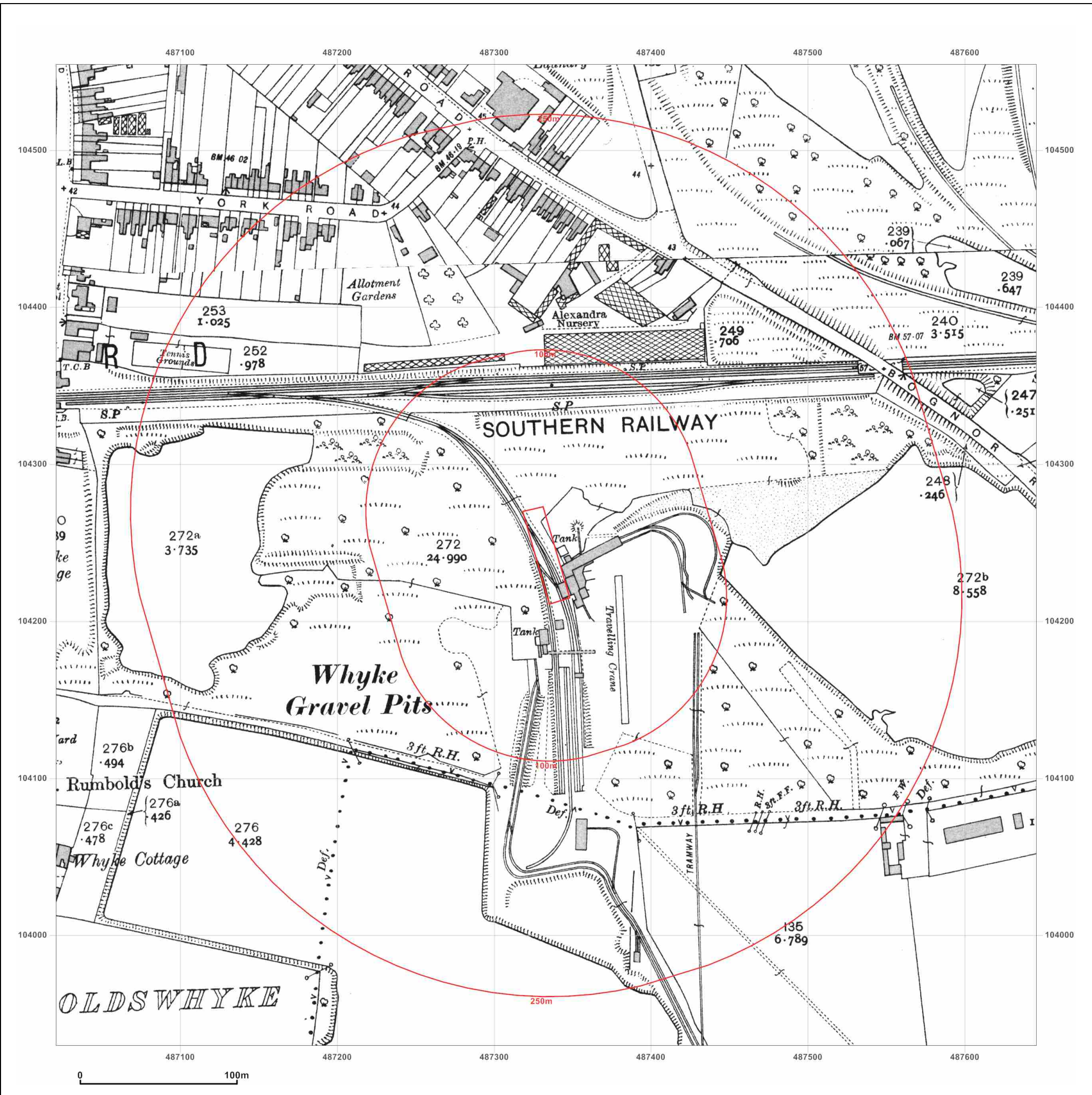


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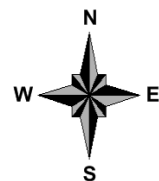
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Grid Ref: 487333, 104242

Map Name: National Grid

Map date: 1962

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed 1962 Revised 1962 Edition N/A Copyright 1962 Levelled 1950	



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Grid Ref: 487333, 104242

Map Name: National Grid

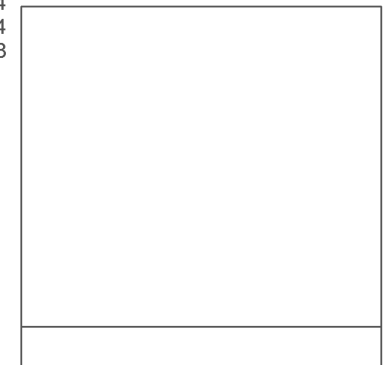
Map date: 1962

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1962  
Revised 1962  
Edition 1964  
Copyright 1964  
Levelled 1958



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Site Details:

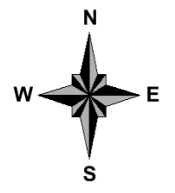
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Map date: 1969-1971

Scale: 1:1,250

Printed at: 1:2,000



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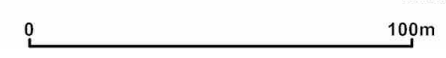
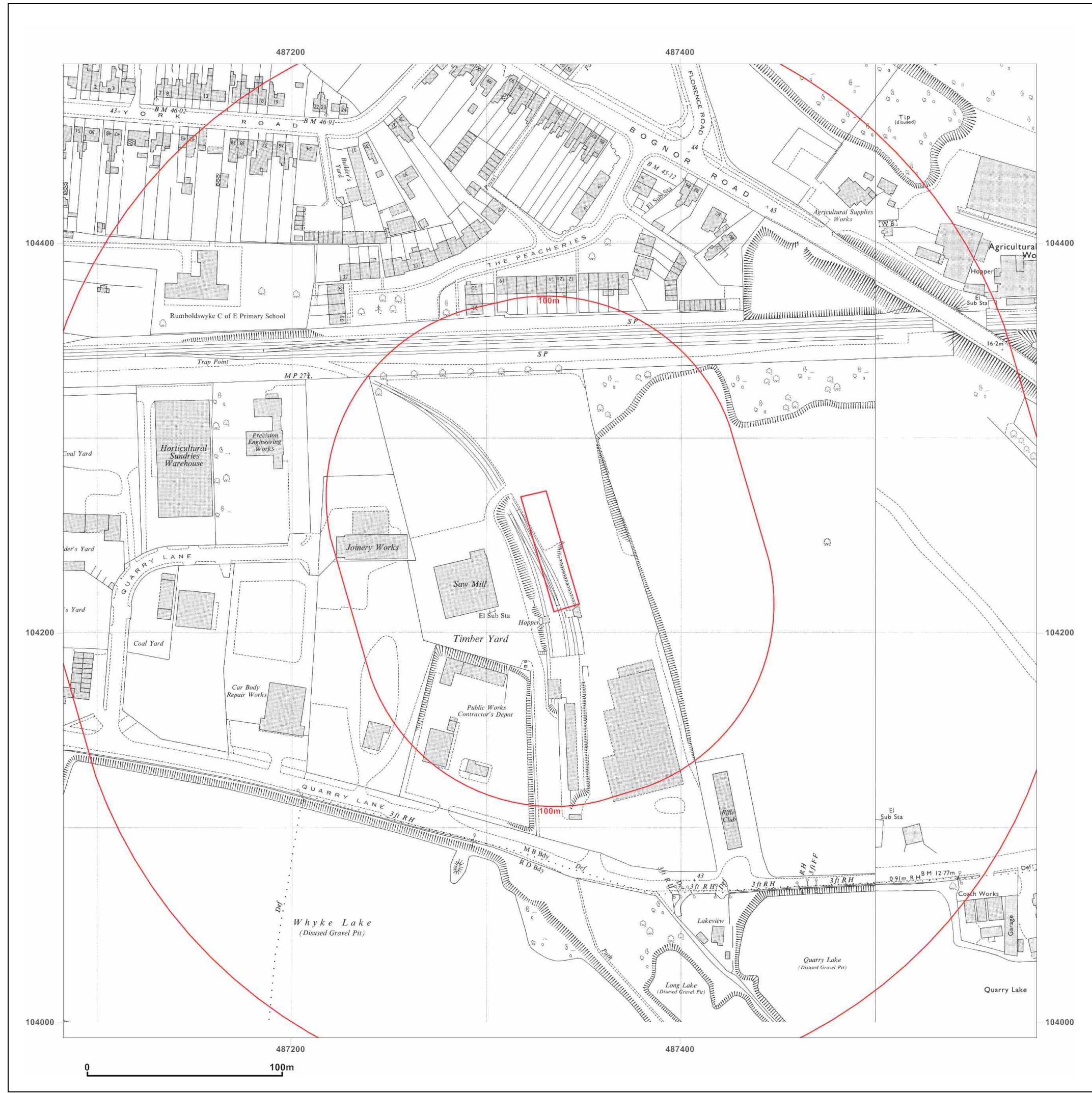


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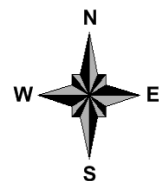
# Ordnance Survey® Historical Mapping Extract

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**Grid Ref:** 487333, 104242

**Map Name:** National Grid  
**Map date:** 1975-1980  
**Scale:** 1:1,250  
**Printed at:** 1:2,000



Surveyed 1961 Revised 1974 Edition N/A Copyright 1975 Levelled 1950	Surveyed N/A Revised N/A Edition N/A Copyright 1980 Levelled 1974
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	

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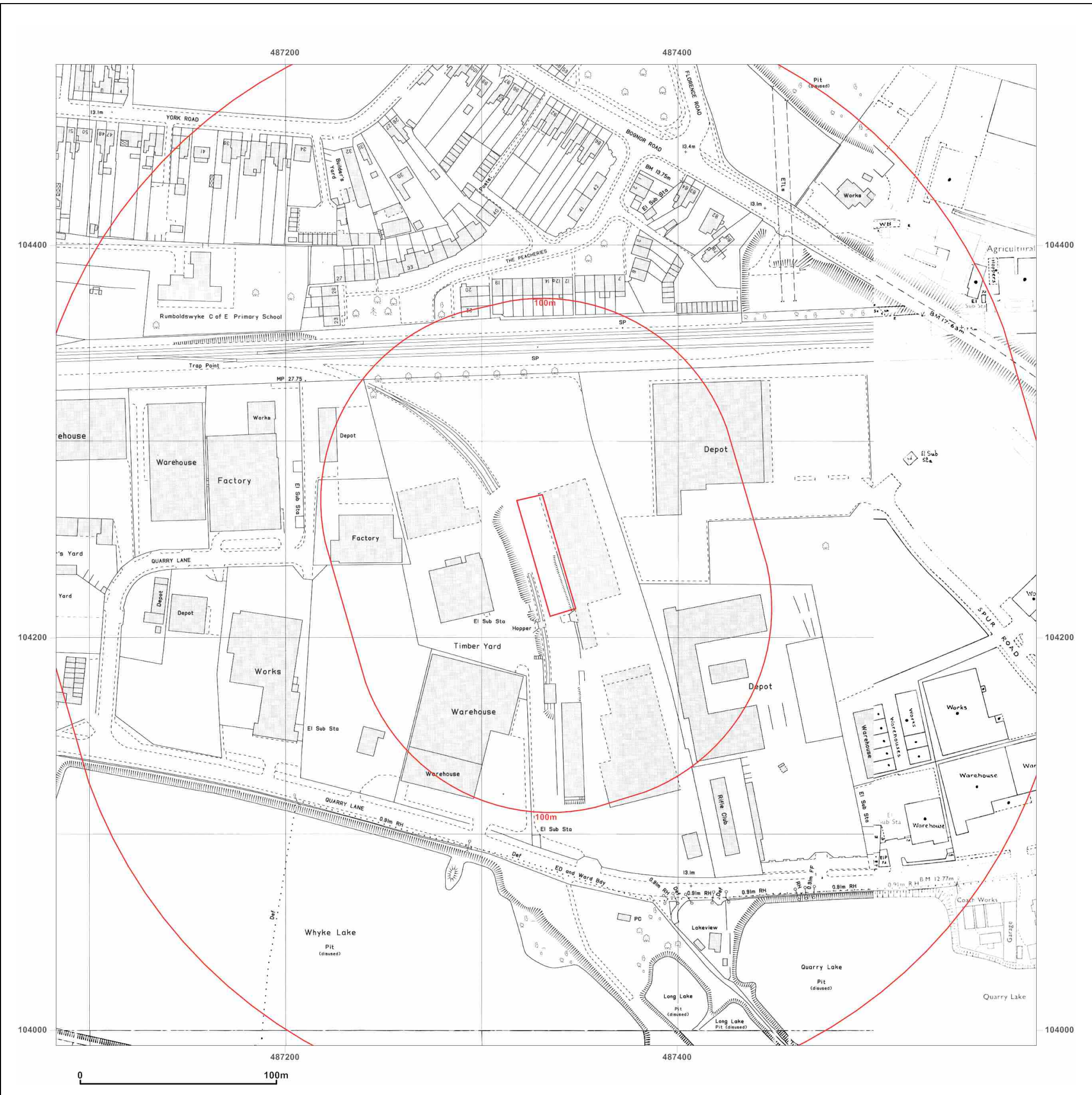


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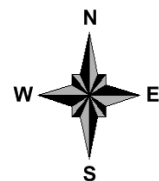
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Grid Ref: 487333, 104242

Map Name: National Grid

Map date: 1981-1984

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed 1974 Revised 1984 Edition N/A Copyright 1984 Levelled 1974	

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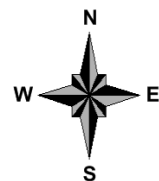
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Grid Ref: 487333, 104242

Map Name: National Grid

Map date: 1986-1990

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed 1974 Revised 1990 Edition N/A Copyright 1990 Levelled 1974	



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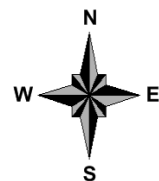
Ordnance Survey®  
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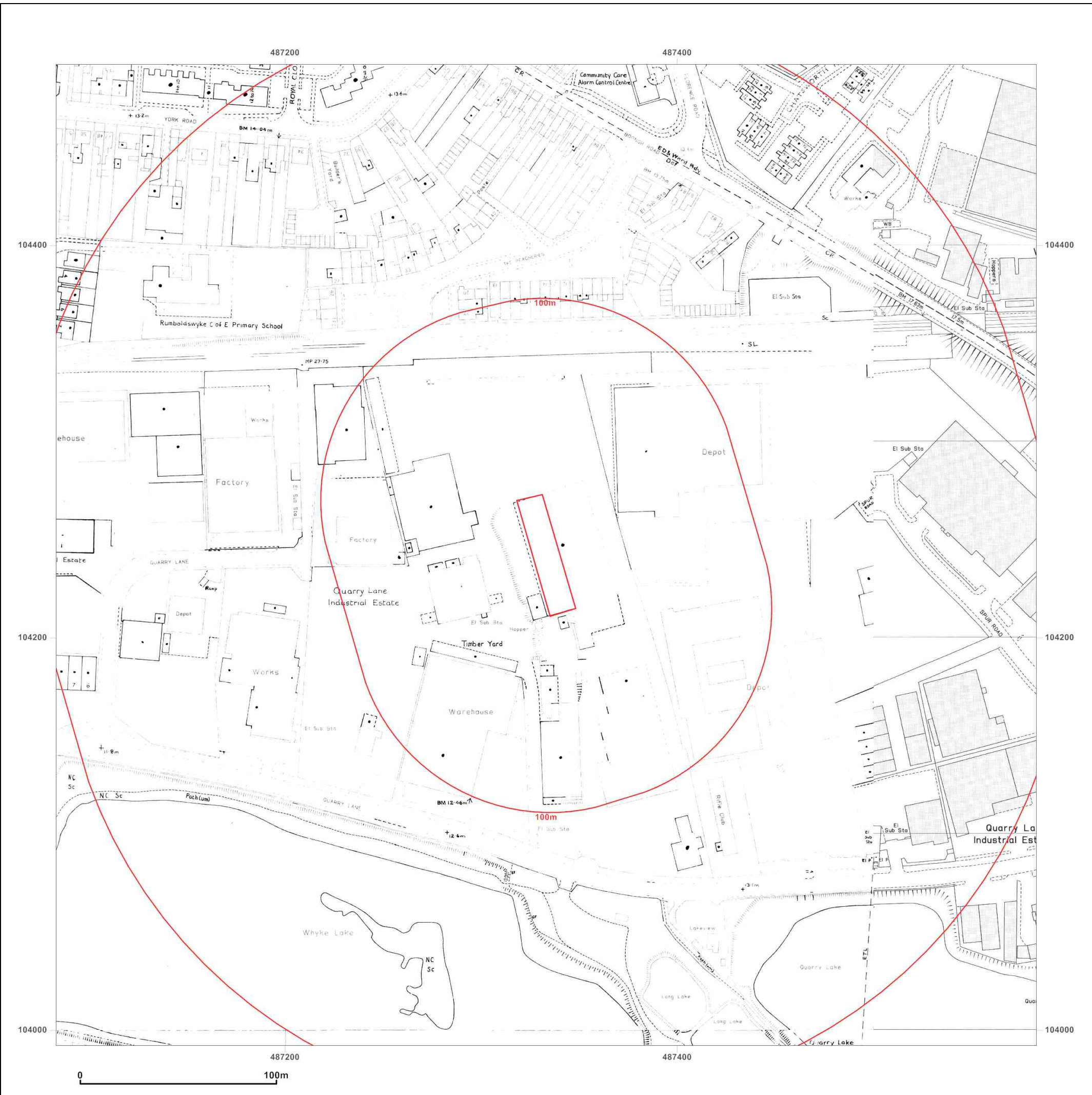
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Report Ref: CMAPS-CM-382999-26342-031214HIS  
Grid Ref: 487333, 104242

Map Name: National Grid  
Map date: 1989-1991  
Scale: 1:1,250  
Printed at: 1:2,000



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<p>Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A</p>	



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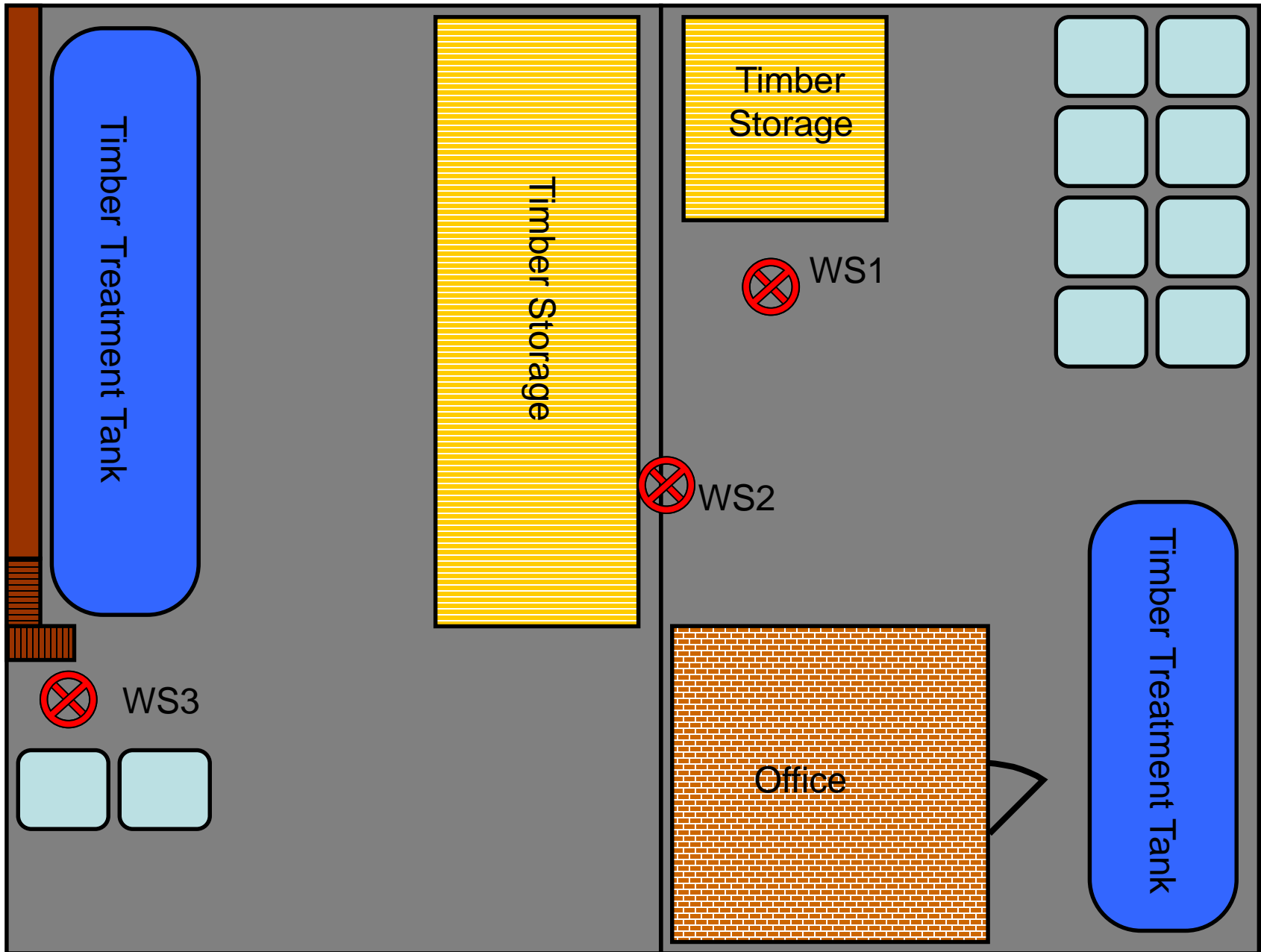
Production date: 03 December 2014

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# APPENDIX D

## Site Plan





Storage Tanks

Timber Treatment Tank

Timber Storage

Timber Storage

WS1

WS2

WS3

Office

Timber Treatment Tank

# APPENDIX E

## Stratigraphic Logs

Project Name  
 Sussex House Quarry lane,

 Project No.  
 14.8385

Co-ords: -

 Hole Type  
 WS

 Location: west sussex  
 Plant: Window Sampling Rig

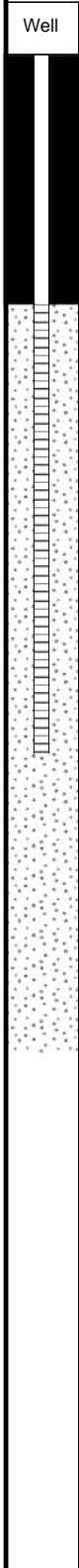
Level: -

 Scale  
 1:30

 Client: Covers  
 Drilled By: CE

Dates: 15/01/2015

 Logged By  
 AT

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.15		Concrete	
		0.40	ES				(Reworked) Loose brown slightly clayey sandy Gravel. Sand is fine to medium grained. Gravel is fine to coarse grained and is sub-rounded to sub-angular flint.	
		0.90	ES		0.85		Loose light brown clayey silty sandy GRAVEL. sand is medium grained. Gravel is sub-rounded to sub-angular fine to medium flint.	
		1.30	ES				Higher clay content	
		1.80	ES		1.90		Soft dark brown CLAY (Organic odour)	
					2.00		Light brown slightly Sandy GRAVEL. Gravel is sub-angular to sub-rounded, fine to medium flint.	
					2.30		Soft dark brown CLAY, occaional sub-rounded to sub-angular and fine to medium flint.	
		2.60	ES		2.60		Light brown slightly sandy GRAVEL. Gravel sub-angular to sub-rounded fine to medium flint.	
		3.30	ES					
		3.90	ES		3.80		Light brown fine SAND	
				4.00		End of Borehole at 4.00 m		

Remarks: Groundwater encountered at 1.40mbgl. Hole collapsed at 4.00mbgl.

Project Name Sussex House Quarry lane,	Project No. 14.8385	Co-ords: -	Hole Type WS
Location: west sussex Plant: Window Sampling Rig		Level: -	Scale 1:30
Client: Covers Drilled By: CE		Dates: 15/01/2015	Logged By AT

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
							CONCRETE	
		0.20	ES		0.15		(Reworked) Brown clayey sandy Gravel. Sand is medium grained. Gravel is sub-rounded and sub-angular fine to medium brick, glass and flint. (hydrocarbon odour).	
		0.60	ES		0.50		Brown clayey sandy GRAVEL. Sand is medium. Gravel is sub-rounded to sub-angular fine to coarse flint.	
		1.40	ES					
		1.90	ES		1.85		Dark brown grey CLAY with occasional flint gravel	
		2.50	ES		2.20		Brown sandy GRAVEL. Sand is fine to medium. Gravel is sub-rounded to sub-angular fine to coarse flint. Black staining with visible shine, strong hydrocarbon odour.	
		2.85	ES		2.60 2.70		Light brown silty sandy GRAVEL Sand is medium. Gravel is sub-rounded to sub-angular fine to coarse flint. Light brown slightly sandy GRAVEL. Sand is medium. Gravel is sub-angular and sub-rounded and fine to medium flint.	
		3.50	ES					
		3.85	ES		3.75		Light brown fine SAND	
					4.00		End of Borehole at 4.00 m	

Remarks: Groundwater encountered at 2.2mbgl. Collapsed at 4.0mbgl.

Project Name  
 Sussex House Quarry lane,

 Project No.  
 14.8385

Co-ords: -

 Hole Type  
 WS

 Location: west sussex  
 Plant: Window Sampling Rig

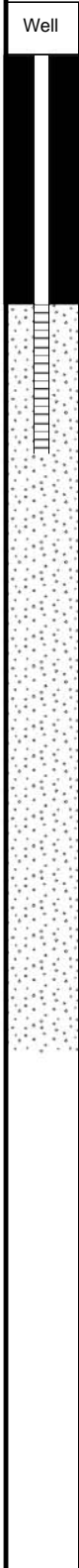
Level: -

 Scale  
 1:30

 Client: Covers  
 Drilled By: CE

Dates: 15/01/2015

 Logged By  
 AT

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
							CONCRETE	
				0.10			Sand Fill.	
			0.30	ES			(Reworked) Brown clayey sandy GRAVEL. Sand is medium. Gravel is subangular to subrounded fine to medium brick, glass and flint. hydrocarbon odour	
			0.70	ES	0.60		Brown very clayey sandy GRAVEL. Sand is medium. Gravel is sub-rounded to sub-angular and fine to course flint.	
			1.40	ES				
			1.95	ES	1.90		Dark brown gravelly CLAY. Gravel is fine to medium sub-rounded to sub-angular flint. Black staining, visible sheen and hydrocarbon odour.	
			2.50	ES	2.60			
			2.75	ES			Sandy GRAVEL. sand is fine to medium. Gravel is sub-rounded to sub-angular fine to course flint. Black staining, visible sheen and hydrocarbon odour.	
			3.20	ES				
			3.75	ES	3.50		Light brown fine Sand.	
				4.00		End of Borehole at 4.00 m		

Remarks: Groundwater encountered at 1.1mbgl. Collapsed at 4.0mbgl.

# APPENDIX F

## Soil Contamination Testing



Alan Taylor  
Constructive Evaluation Ltd  
Unit 5 (Top Floor)  
Vinnetrow Business Park  
Vinnetrow Road  
Runcton  
Chichester  
PO20 1QH

**QTS Environmental Ltd**  
Unit 1  
Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Kent  
ME17 2JN  
t: 01622 850410  
[russell.jarvis@qtsenvironmental.com](mailto:russell.jarvis@qtsenvironmental.com)

## **QTS Environmental Report No: 15-27961**

**Site Reference:** Sussex House, Quarry Lane

**Project / Job Ref:** 14.8385

**Order No:** 14.8385/AT

**Sample Receipt Date:** 16/01/2015

**Sample Scheduled Date:** 16/01/2015

**Report Issue Number:** 1

**Reporting Date:** 22/01/2015

**Authorised by:**

Russell Jarvis  
Director

**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old  
Director

**On behalf of QTS Environmental Ltd**



**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
**Rose Lane**  
**Lenham Heath**  
**Maidstone**  
**Kent ME17 2JN**  
**Tel : 01622 850410**



<b>Soil Analysis Certificate</b>						
<b>QTS Environmental Report No: 15-27961</b>	<b>Date Sampled</b>	15/01/15	15/01/15	15/01/15	15/01/15	15/01/15
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS1	WS1	WS2	WS2
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Order No: 14.8385/AT</b>	<b>Depth (m)</b>	0.40	1.80	2.60	0.20	2.50
<b>Reporting Date: 22/01/2015</b>	<b>QTSE Sample No</b>	132160	132161	132162	132163	132164

<b>Determinand</b>	<b>Unit</b>	<b>RL</b>	<b>Accreditation</b>						
Asbestos Screen	N/a	N/a	<b>ISO17025</b>	Not Detected				Not Detected	
pH	pH Units	N/a	<b>MCERTS</b>	8.5	8.2	7.7		7.9	8.3
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2		< 2	< 2
W/S Sulphate as SO4 (2:1)	g/l	< 0.01	<b>MCERTS</b>	0.05	0.03	0.04		0.03	0.04
Organic Matter	%	< 0.1	<b>MCERTS</b>	1.1	0.6	1.6		2.6	0.4
Arsenic (As)	mg/kg	< 2	<b>MCERTS</b>	5	4	4		7	2
Cadmium (Cd)	mg/kg	< 0.2	<b>MCERTS</b>	0.4	0.3	0.2		0.8	< 0.2
Chromium (Cr)	mg/kg	< 2	<b>MCERTS</b>	11	18	12		20	12
Copper (Cu)	mg/kg	< 4	<b>MCERTS</b>	15	11	11		34	6
Lead (Pb)	mg/kg	< 3	<b>MCERTS</b>	40	20	118		61	6
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1		< 1	< 1
Nickel (Ni)	mg/kg	< 3	<b>MCERTS</b>	10	15	10		19	11
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3		< 3	< 3
Zinc (Zn)	mg/kg	< 3	<b>MCERTS</b>	44	42	45		85	15
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2		< 2	< 2

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C

Analysis carried out on the dried sample is corrected for the stone content

The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)

This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.

The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.

Asbestos Analyst: Graham Revell

RL: Reporting Limit

Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).

Subcontracted analysis <sup>(5)</sup>





**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
**Rose Lane**  
**Lenham Heath**  
**Maidstone**  
**Kent ME17 2JN**  
**Tel : 01622 850410**



<b>Soil Analysis Certificate</b>						
<b>QTS Environmental Report No: 15-27961</b>	<b>Date Sampled</b>	15/01/15	15/01/15	15/01/15	15/01/15	15/01/15
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS2	WS3	WS3	WS3	WS3
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Order No: 14.8385/AT</b>	<b>Depth (m)</b>	2.85	0.30	1.95	2.75	3.20
<b>Reporting Date: 22/01/2015</b>	<b>QTSE Sample No</b>	132165	132166	132167	132168	132169

<b>Determinand</b>	<b>Unit</b>	<b>RL</b>	<b>Accreditation</b>					
Asbestos Screen	N/a	N/a	ISO17025		Not Detected			
pH	pH Units	N/a	MCERTS	8.8	8.3	8.1	8.1	8.4
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
W/S Sulphate as SO4 (2:1)	g/l	< 0.01	MCERTS	0.02	0.01	0.02	0.01	< 0.01
Organic Matter	%	< 0.1	MCERTS	0.1	1.4	0.5	0.2	0.3
Arsenic (As)	mg/kg	< 2	MCERTS	2	6	< 2	< 2	< 2
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	0.4	0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	11	24	11	8	8
Copper (Cu)	mg/kg	< 4	MCERTS	6	21	5	5	4
Lead (Pb)	mg/kg	< 3	MCERTS	7	39	8	4	5
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	11	22	10	8	7
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	17	67	23	12	12
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C

Analysis carried out on the dried sample is corrected for the stone content

The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)

This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.

The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.

Asbestos Analyst: Graham Revell

RL: Reporting Limit

Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).

Subcontracted analysis <sup>(S)</sup>



**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
**Rose Lane**  
**Lenham Heath**  
**Maidstone**  
**Kent ME17 2JN**  
**Tel : 01622 850410**



<b>Soil Analysis Certificate - Speciated PAHs</b>						
<b>QTS Environmental Report No: 15-27961</b>	<b>Date Sampled</b>	15/01/15	15/01/15	15/01/15	15/01/15	15/01/15
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS1	WS1	WS2	WS2
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Order No: 14.8385/AT</b>	<b>Depth (m)</b>	0.40	1.80	2.60	0.20	2.50
<b>Reporting Date: 22/01/2015</b>	<b>QTSE Sample No</b>	132160	132161	132162	132163	132164

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.77	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.18	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.16	< 0.1	< 0.1	0.28	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	0.15	< 0.1	< 0.1	0.23	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	0.13	< 0.1	< 0.1	0.15	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.15	< 0.1	< 0.1	0.17	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	1.8	< 1.6

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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<b>Soil Analysis Certificate - Speciated PAHs</b>						
<b>QTS Environmental Report No: 15-27961</b>	<b>Date Sampled</b>	15/01/15	15/01/15	15/01/15	15/01/15	15/01/15
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS2	WS3	WS3	WS3	WS3
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Order No: 14.8385/AT</b>	<b>Depth (m)</b>	2.85	0.30	1.95	2.75	3.20
<b>Reporting Date: 22/01/2015</b>	<b>QTSE Sample No</b>	132165	132166	132167	132168	132169

<b>Determinand</b>	<b>Unit</b>	<b>RL</b>	<b>Accreditation</b>					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
<b>Total EPA-16 PAHs</b>	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

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<b>Soil Analysis Certificate - TPH CWG Banded</b>						
<b>QTS Environmental Report No: 15-27961</b>	<b>Date Sampled</b>	15/01/15	15/01/15	15/01/15	15/01/15	15/01/15
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS1	WS1	WS2	WS2
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Order No: 14.8385/AT</b>	<b>Depth (m)</b>	0.40	1.80	2.60	0.20	2.50
<b>Reporting Date: 22/01/2015</b>	<b>QTSE Sample No</b>	132160	132161	132162	132163	132164

<b>Determinand</b>	<b>Unit</b>	<b>RL</b>	<b>Accreditation</b>					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	57	76
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	112	116
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	92	84
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	261	275
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	0.06	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	47	6
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	34	29
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	36	30
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	117	66
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	378	341

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<b>Soil Analysis Certificate - TPH CWG Banded</b>						
<b>QTS Environmental Report No: 15-27961</b>	<b>Date Sampled</b>	15/01/15	15/01/15	15/01/15	15/01/15	15/01/15
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS2	WS3	WS3	WS3	WS3
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Order No: 14.8385/AT</b>	<b>Depth (m)</b>	2.85	0.30	1.95	2.75	3.20
<b>Reporting Date: 22/01/2015</b>	<b>QTSE Sample No</b>	132165	132166	132167	132168	132169

<b>Determinand</b>	<b>Unit</b>	<b>RL</b>	<b>Accreditation</b>					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	0.41	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	22	54	9
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	46	100	20
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	23	38	12
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	91	192	41
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	6	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	5	27	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	7	20	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	54	< 21
<b>Total &gt;C5 - C35</b>	<b>mg/kg</b>	<b>&lt; 42</b>	<b>NONE</b>	<b>&lt; 42</b>	<b>&lt; 42</b>	<b>103</b>	<b>245</b>	<b>&lt; 42</b>

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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<b>Soil Analysis Certificate - BTEX / MTBE</b>						
<b>QTS Environmental Report No: 15-27961</b>	<b>Date Sampled</b>	15/01/15	15/01/15	15/01/15	15/01/15	15/01/15
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS1	WS1	WS2	WS2
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Order No: 14.8385/AT</b>	<b>Depth (m)</b>	0.40	1.80	2.60	0.20	2.50
<b>Reporting Date: 22/01/2015</b>	<b>QTSE Sample No</b>	132160	132161	132162	132163	132164

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	58	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	47	< 5	< 5	20	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	24	< 2
p & m-xylene	ug/kg	< 2	MCERTS	32	< 2	< 2	262	< 2
o-xylene	ug/kg	< 2	MCERTS	7	< 2	< 2	315	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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<b>Soil Analysis Certificate - BTEX / MTBE</b>						
<b>QTS Environmental Report No: 15-27961</b>	<b>Date Sampled</b>	15/01/15	15/01/15	15/01/15	15/01/15	15/01/15
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS2	WS3	WS3	WS3	WS3
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
<b>Order No: 14.8385/AT</b>	<b>Depth (m)</b>	2.85	0.30	1.95	2.75	3.20
<b>Reporting Date: 22/01/2015</b>	<b>QTSE Sample No</b>	132165	132166	132167	132168	132169

<b>Determinand</b>	<b>Unit</b>	<b>RL</b>	<b>Accreditation</b>					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	98	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



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<b>Soil Analysis Certificate - Sample Descriptions</b>	
<b>QTS Environmental Report No: 15-27961</b>	
<b>Constructive Evaluation Ltd</b>	
<b>Site Reference: Sussex House, Quarry Lane</b>	
<b>Project / Job Ref: 14.8385</b>	
<b>Order No: 14.8385/AT</b>	
<b>Reporting Date: 22/01/2015</b>	

<b>QTSE Sample No</b>	<b>TP / BH No</b>	<b>Additional Refs</b>	<b>Depth (m)</b>	<b>Moisture Content (%)</b>	<b>Sample Matrix Description</b>
132160	WS1	None Supplied	0.40	8.5	Black sandy clay with stones
132161	WS1	None Supplied	1.80	13.3	Brown clay with stones
132162	WS1	None Supplied	2.60	16.5	Black clay with stones
132163	WS2	None Supplied	0.20	12.8	Black clay with stones
132164	WS2	None Supplied	2.50	6.6	Black clayey sand with stones
132165	WS2	None Supplied	2.85	10.2	Orange clayey sand with stones
132166	WS3	None Supplied	0.30	11.7	Black clay with stones
132167	WS3	None Supplied	1.95	11.3	Brown clayey sand with stones
132168	WS3	None Supplied	2.75	8.1	Brown clayey sand with stones
132169	WS3	None Supplied	3.20	9.5	Light brown clayey sand with stones

*Moisture content is part of procedure E003 & is not an accredited test*

Insufficient Sample <sup>1/S</sup>

Unsuitable Sample <sup>U/S</sup>





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<b>Soil Analysis Certificate - Methodology &amp; Miscellaneous Information</b>
<b>QTS Environmental Report No: 15-27961</b>
<b>Constructive Evaluation Ltd</b>
<b>Site Reference: Sussex House, Quarry Lane</b>
<b>Project / Job Ref: 14.8385</b>
<b>Order No: 14.8385/AT</b>
<b>Reporting Date: 22/01/2015</b>

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	TPH LQM	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6 - C10)	Determination of hydrocarbons C6-C10 by headspace GC-MS	E001

**D Dried**  
**AR As Received**

# **APPENDIX G**

## **Groundwater Contamination Testing**



Lydia Coote  
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Unit 5 (Top Floor)  
Vinnetrow Business Park  
Vinnetrow Road  
Runcton  
Chichester  
PO20 1QH

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## **QTS Environmental Report No: 15-28659**

**Site Reference:** Sussex House, Quarry Lane

**Project / Job Ref:** 14.8385

**Order No:** 14.8385/LC

**Sample Receipt Date:** 11/02/2015

**Sample Scheduled Date:** 11/02/2015

**Report Issue Number:** 1

**Reporting Date:** 17/02/2015

**Authorised by:**

Russell Jarvis  
Director

**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old  
Director

**On behalf of QTS Environmental Ltd**



**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
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<b>Water Analysis Certificate</b>					
<b>QTS Environmental Report No: 15-28659</b>	<b>Date Sampled</b>	05/02/15	05/02/15		
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied		
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS2		
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied		
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.59	1.43		
<b>Reporting Date: 17/02/2015</b>	<b>QTSE Sample No</b>	135659	135660		

<b>Determinand</b>	<b>Unit</b>	<b>RL</b>	<b>Accreditation</b>				
pH	pH Units	N/a	ISO17025	7.0	6.9		
Electrical Conductivity	uS/cm	< 5	NONE	856	849		
Total Cyanide	ug/l	< 5	NONE	< 5	< 5		
Sulphate as SO <sub>4</sub>	mg/l	< 1	ISO17025	31	34		
Total Organic Carbon (TOC)	mg/l	< 0.1	NONE	5	8.9		
Hardness - Total	mgCaCO <sub>3</sub> /l	< 1	NONE	372	388		
Arsenic (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Barium (dissolved)	ug/l	< 5	ISO17025	49	60		
Beryllium (dissolved)	ug/l	< 3	ISO17025	< 3	< 3		
Boron (dissolved)	ug/l	< 5	ISO17025	251	186		
Cadmium (dissolved)	ug/l	< 0.4	ISO17025	5	0.6		
Chromium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Copper (dissolved)	ug/l	< 5	ISO17025	58	11		
Lead (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Mercury (dissolved)	ug/l	< 0.05	ISO17025	< 0.05	< 0.05		
Nickel (dissolved)	ug/l	< 5	ISO17025	27	12		
Selenium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Vanadium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Zinc (dissolved)	ug/l	< 2	ISO17025	23	14		
Total Phenols (monohydric)	ug/l	< 0.5	NONE	< 0.5	8.6		

Subcontracted analysis <sup>(S)</sup>  
 Insufficient sample <sup>I/S</sup>  
 Unsuitable Sample <sup>U/S</sup>



**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
**Rose Lane**  
**Lenham Heath**  
**Maidstone**  
**Kent ME17 2JN**  
**Tel : 01622 850410**

Water Analysis Certificate - Speciated PAH					
<b>QTS Environmental Report No: 15-28659</b>	<b>Date Sampled</b>	05/02/15	05/02/15		
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied		
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS2		
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied		
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.59	1.43		
<b>Reporting Date: 17/02/2015</b>	<b>QTSE Sample No</b>	135659	135660		

Determinand	Unit	RL	Accreditation				
Naphthalene	ug/l	< 0.01	NONE	< 0.01	0.21		
Acenaphthylene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Acenaphthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Fluorene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Phenanthrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(a)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Chrysene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(ghi)perylene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Total EPA-16 PAHs	ug/l	< 0.01	NONE	< 0.01	0.21		



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Water Analysis Certificate - TPH CWG Banded					
QTS Environmental Report No: 15-28659	Date Sampled	05/02/15	05/02/15		
Constructive Evaluation Ltd	Time Sampled	None Supplied	None Supplied		
Site Reference: Sussex House, Quarry Lane	TP / BH No	WS1	WS2		
Project / Job Ref: 14.8385	Additional Refs	None Supplied	None Supplied		
Order No: 14.8385/LC	Depth (m)	1.59	1.43		
Reporting Date: 17/02/2015	QTSE Sample No	135659	135660		

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6	ug/l	< 10	NONE	< 10	62		
Aliphatic >C6 - C8	ug/l	< 10	NONE	< 10	258		
Aliphatic >C8 - C10	ug/l	< 10	NONE	< 10	176		
Aliphatic >C10 - C12	ug/l	< 10	NONE	< 10	499		
Aliphatic >C12 - C16	ug/l	< 10	NONE	< 10	565		
Aliphatic >C16 - C21	ug/l	< 10	NONE	< 10	23		
Aliphatic >C21 - C34	ug/l	< 10	NONE	< 10	< 10		
Aliphatic (C5 - C34)	ug/l	< 70	NONE	< 70	1583		
Aromatic >C5 - C7	ug/l	< 10	NONE	< 10	< 10		
Aromatic >C7 - C8	ug/l	< 10	NONE	< 10	< 10		
Aromatic >C8 - C10	ug/l	< 10	NONE	< 10	194		
Aromatic >C10 - C12	ug/l	< 10	NONE	< 10	637		
Aromatic >C12 - C16	ug/l	< 10	NONE	< 10	585		
Aromatic >C16 - C21	ug/l	< 10	NONE	< 10	43		
Aromatic >C21 - C35	ug/l	< 10	NONE	< 10	12		
Aromatic (C5 - C35)	ug/l	< 70	NONE	< 70	1471		
Total >C5 - C35	ug/l	< 140	NONE	< 140	3054		



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Water Analysis Certificate - BTEX / MTBE					
<b>QTS Environmental Report No: 15-28659</b>	<b>Date Sampled</b>	05/02/15	05/02/15		
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied		
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS2		
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied		
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.59	1.43		
<b>Reporting Date: 17/02/2015</b>	<b>QTSE Sample No</b>	135659	135660		

Determinand	Unit	RL	Accreditation				
Benzene	ug/l	< 1	ISO17025	< 1	< 1		
Toluene	ug/l	< 5	ISO17025	< 5	< 5		
Ethylbenzene	ug/l	< 5	ISO17025	< 5	< 5		
p & m-xylene	ug/l	< 10	ISO17025	< 10	< 10		
o-xylene	ug/l	< 5	ISO17025	< 5	< 5		
MTBE	ug/l	< 10	ISO17025	< 10	< 10		



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<b>Soil Analysis Certificate - Methodology &amp; Miscellaneous Information</b>
<b>QTS Environmental Report No: 15-28659</b>
<b>Constructive Evaluation Ltd</b>
<b>Site Reference: Sussex House, Quarry Lane</b>
<b>Project / Job Ref: 14.8385</b>
<b>Order No: 14.8385/LC</b>
<b>Reporting Date: 17/02/2015</b>

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR detection	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

**Key**

**F Filtered**  
**UF Unfiltered**





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## **QTS Environmental Report No: 15-28407**

**Site Reference:** Sussex House, Quarry Lane

**Project / Job Ref:** 14.8385

**Order No:** 14.8385/LC

**Sample Receipt Date:** 02/02/2015

**Sample Scheduled Date:** 02/02/2015

**Report Issue Number:** 1

**Reporting Date:** 10/02/2015

**Authorised by:**

Russell Jarvis  
Director

**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old  
Director

**On behalf of QTS Environmental Ltd**



**QTS Environmental Ltd**  
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<b>Water Analysis Certificate</b>					
<b>QTS Environmental Report No: 15-28407</b>	<b>Date Sampled</b>	29/01/15	29/01/15		
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied		
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS2		
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied		
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.42	1.32		
<b>Reporting Date: 10/02/2015</b>	<b>QTSE Sample No</b>	134304	134305		

<b>Determinand</b>	<b>Unit</b>	<b>RL</b>	<b>Accreditation</b>				
pH	pH Units	N/a	ISO17025	7.1	7.1		
Electrical Conductivity	uS/cm	< 5	NONE	905	870		
Total Cyanide	ug/l	< 5	NONE	< 5	< 5		
Sulphate as SO <sub>4</sub>	mg/l	< 1	ISO17025	29	37		
Total Organic Carbon (TOC)	mg/l	< 0.1	NONE	6.9	4.3		
Hardness - Total	mgCaCO <sub>3</sub> /l	< 1	NONE	366	434		
Arsenic (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Barium (dissolved)	ug/l	< 5	ISO17025	63	159		
Beryllium (dissolved)	ug/l	< 3	ISO17025	< 3	< 3		
Boron (dissolved)	ug/l	< 5	ISO17025	197	177		
Cadmium (dissolved)	ug/l	< 0.4	ISO17025	3.9	0.4		
Chromium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Copper (dissolved)	ug/l	< 5	ISO17025	62	7		
Lead (dissolved)	ug/l	< 5	ISO17025	6	9		
Mercury (dissolved)	ug/l	< 0.05	ISO17025	< 0.05	< 0.05		
Nickel (dissolved)	ug/l	< 5	ISO17025	38	12		
Selenium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Vanadium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Zinc (dissolved)	ug/l	< 2	ISO17025	23	30		
Total Phenols (monohydric)	ug/l	< 0.5	NONE	< 0.5	6.9		

Subcontracted analysis <sup>(S)</sup>

Insufficient sample <sup>I/S</sup>

Unsuitable Sample <sup>U/S</sup>



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Water Analysis Certificate - Speciated PAH					
<b>QTS Environmental Report No: 15-28407</b>	<b>Date Sampled</b>	29/01/15	29/01/15		
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied		
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS2		
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied		
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.42	1.32		
<b>Reporting Date: 10/02/2015</b>	<b>QTSE Sample No</b>	134304	134305		

Determinand	Unit	RL	Accreditation				
Naphthalene	ug/l	< 0.01	NONE	< 0.01	0.19		
Acenaphthylene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Acenaphthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Fluorene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Phenanthrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(a)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Chrysene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(ghi)perylene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Total EPA-16 PAHs	ug/l	< 0.01	NONE	< 0.01	0.19		



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Water Analysis Certificate - TPH CWG Banded					
<b>QTS Environmental Report No: 15-28407</b>	<b>Date Sampled</b>	29/01/15	29/01/15		
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied		
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS2		
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied		
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.42	1.32		
<b>Reporting Date: 10/02/2015</b>	<b>QTSE Sample No</b>	134304	134305		

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6	ug/l	< 10	NONE	< 10	< 10		
Aliphatic >C6 - C8	ug/l	< 10	NONE	< 10	15		
Aliphatic >C8 - C10	ug/l	< 10	NONE	< 10	83		
Aliphatic >C10 - C12	ug/l	< 10	NONE	< 10	143		
Aliphatic >C12 - C16	ug/l	< 10	NONE	< 10	253		
Aliphatic >C16 - C21	ug/l	< 10	NONE	< 10	248		
Aliphatic >C21 - C34	ug/l	< 10	NONE	< 10	75		
Aliphatic (C5 - C34)	ug/l	< 70	NONE	< 70	816		
Aromatic >C5 - C7	ug/l	< 10	NONE	< 10	< 10		
Aromatic >C7 - C8	ug/l	< 10	NONE	< 10	< 10		
Aromatic >C8 - C10	ug/l	< 10	NONE	< 10	45		
Aromatic >C10 - C12	ug/l	< 10	NONE	< 10	141		
Aromatic >C12 - C16	ug/l	< 10	NONE	< 10	133		
Aromatic >C16 - C21	ug/l	< 10	NONE	< 10	119		
Aromatic >C21 - C35	ug/l	< 10	NONE	< 10	30		
Aromatic (C5 - C35)	ug/l	< 70	NONE	< 70	468		
Total >C5 - C35	ug/l	< 140	NONE	< 140	1284		



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Water Analysis Certificate - BTEX / MTBE					
<b>QTS Environmental Report No: 15-28407</b>	<b>Date Sampled</b>	29/01/15	29/01/15		
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied		
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS2		
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied		
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.42	1.32		
<b>Reporting Date: 10/02/2015</b>	<b>QTSE Sample No</b>	134304	134305		

Determinand	Unit	RL	Accreditation				
Benzene	ug/l	< 1	ISO17025	< 1	< 1		
Toluene	ug/l	< 5	ISO17025	< 5	< 5		
Ethylbenzene	ug/l	< 5	ISO17025	< 5	< 5		
p & m-xylene	ug/l	< 10	ISO17025	< 10	< 10		
o-xylene	ug/l	< 5	ISO17025	< 5	< 5		
MTBE	ug/l	< 10	ISO17025	< 10	< 10		



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**Water Analysis Certificate - Semi Volatile Organic Compounds (SVOC)**

<b>QTS Environmental Report No: 15-28407</b>	<b>Date Sampled</b>	29/01/15			
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied			
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS2			
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied			
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.32			
<b>Reporting Date: 10/02/2015</b>	<b>QTSE Sample No</b>	134305			

Determinand	Unit	RL	Accreditation				
Phenol	ug/l	< 0.1	NONE	4.2			
1,2,4-Trichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
2-Nitrophenol	ug/l	< 0.1	NONE	< 0.1			
Nitrobenzene	ug/l	< 0.1	NONE	< 0.1			
0-Cresol	ug/l	< 0.1	NONE	1.1			
bis(2-chloroethoxy)methane	ug/l	< 0.1	NONE	< 0.1			
bis(2-chloroethyl)ether	ug/l	< 0.1	NONE	< 0.1			
2,4-Dichlorophenol	ug/l	< 0.1	NONE	0.5			
2-Chlorophenol	ug/l	< 0.1	NONE	< 0.1			
1,3-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
1,4-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
1,2-Dichlorobenzene	ug/l	< 0.1	NONE	< 0.1			
2,4-Dimethylphenol	ug/l	< 0.1	NONE	< 0.1			
Isophorone	ug/l	< 0.1	NONE	< 0.1			
Hexachloroethane	ug/l	< 0.1	NONE	< 0.1			
p-Cresol	ug/l	< 0.1	NONE	0.8			
2,4,6-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1			
2,4,5-Trichlorophenol	ug/l	< 0.1	NONE	< 0.1			
2-Nitroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Chloro-3-methylphenol	ug/l	< 0.1	NONE	< 0.1			
2-Methylnaphthalene	ug/l	< 0.1	NONE	0.6			
Hexachlorocyclopentadiene	ug/l	< 0.1	NONE	< 0.1			
Hexachlorobutadiene	ug/l	< 0.1	NONE	< 0.1			
2,6-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1			
Dimethyl phthalate	ug/l	< 0.1	NONE	< 0.1			
2-Chloronaphthalene	ug/l	< 0.1	NONE	< 0.1			
4-Chloroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Nitrophenol	ug/l	< 0.1	NONE	< 0.1			
4-Chlorophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1			
3-Nitroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Nitroaniline	ug/l	< 0.1	NONE	< 0.1			
4-Bromophenyl phenyl ether	ug/l	< 0.1	NONE	< 0.1			
Hexachlorobenzene	ug/l	< 0.1	NONE	< 0.1			
2,4-Dinitrotoluene	ug/l	< 0.1	NONE	< 0.1			
Diethyl phthalate	ug/l	< 0.1	NONE	< 0.1			
Dibenzofuran	ug/l	< 0.1	NONE	< 0.1			
Azobenzene	ug/l	< 0.1	NONE	< 0.1			
Dibutyl phthalate	ug/l	< 0.1	NONE	< 0.1			
Carbazole	ug/l	< 0.1	NONE	< 0.1			
bis(2-ethylhexyl)phthalate	ug/l	< 0.1	NONE	< 0.1			
Benzyl butyl phthalate	ug/l	< 0.1	NONE	< 0.1			
Di-n-octyl phthalate	ug/l	< 0.1	NONE	< 0.1			



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<b>Soil Analysis Certificate - Methodology &amp; Miscellaneous Information</b>
<b>QTS Environmental Report No: 15-28407</b>
<b>Constructive Evaluation Ltd</b>
<b>Site Reference: Sussex House, Quarry Lane</b>
<b>Project / Job Ref: 14.8385</b>
<b>Order No: 14.8385/LC</b>
<b>Reporting Date: 10/02/2015</b>

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR detection	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	EPH TEXAS	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Fluoride	Determination of fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID	E104
Water	F	TPH LQM	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6 - C10)	Determination of hydrocarbons C6-C10 by headspace GC-MS	E101

Key

**F Filtered**  
**UF Unfiltered**



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## **QTS Environmental Report No: 15-28155**

**Site Reference:** Sussex House, Quarry Lane

**Project / Job Ref:** 14.8385

**Order No:** 14.8385/LC

**Sample Receipt Date:** 23/01/2015

**Sample Scheduled Date:** 23/01/2015

**Report Issue Number:** 1

**Reporting Date:** 29/01/2015

**Authorised by:**

Russell Jarvis  
Director

**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old  
Director

**On behalf of QTS Environmental Ltd**





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<b>Water Analysis Certificate</b>						
<b>QTS Environmental Report No: 15-28155</b>	<b>Date Sampled</b>	22/01/15	22/01/15			
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied			
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS2			
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied			
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.42	1.32			
<b>Reporting Date: 29/01/2015</b>	<b>QTSE Sample No</b>	133149	133150			

<b>Determinand</b>	<b>Unit</b>	<b>RL</b>	<b>Accreditation</b>				
pH	pH Units	N/a	ISO17025	7.2	7.1		
Electrical Conductivity	uS/cm	< 5	NONE	970	879		
Total Cyanide	ug/l	< 5	NONE	< 5	< 5		
Sulphate as SO <sub>4</sub>	mg/l	< 1	ISO17025	42	38		
Total Organic Carbon (TOC)	mg/l	< 0.1	NONE	76.3	76.2		
Hardness - Total	mgCaCO <sub>3</sub> /l	< 1	NONE	356	368		
Arsenic (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Barium (dissolved)	ug/l	< 5	ISO17025	44	60		
Beryllium (dissolved)	ug/l	< 3	ISO17025	< 3	< 3		
Boron (dissolved)	ug/l	< 5	ISO17025	197	169		
Cadmium (dissolved)	ug/l	< 0.4	ISO17025	< 0.4	< 0.4		
Chromium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Copper (dissolved)	ug/l	< 5	ISO17025	36	< 5		
Lead (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Mercury (dissolved)	ug/l	< 0.05	ISO17025	< 0.05	< 0.05		
Nickel (dissolved)	ug/l	< 5	ISO17025	17	7		
Selenium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Vanadium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5		
Zinc (dissolved)	ug/l	< 2	ISO17025	11	6		
Total Phenols (monohydric)	ug/l	< 0.5	NONE	< 0.5	8.9		

Subcontracted analysis <sup>(S)</sup>  
 Insufficient sample <sup>I/S</sup>  
 Unsuitable Sample <sup>U/S</sup>



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Water Analysis Certificate - Speciated PAH					
<b>QTS Environmental Report No: 15-2</b>	<b>Date Sampled</b>	22/01/15	22/01/15		
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied		
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS2		
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied		
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.42	1.32		
<b>Reporting Date: 29/01/2015</b>	<b>QTSE Sample No</b>	133149	133150		

Determinand	Unit	RL	Accreditation				
Naphthalene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Acenaphthylene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Acenaphthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Fluorene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Phenanthrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(a)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Chrysene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Benzo(ghi)perylene	ug/l	< 0.01	NONE	< 0.01	< 0.01		
Total EPA-16 PAHs	ug/l	< 0.01	NONE	< 0.01	< 0.01		



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Water Analysis Certificate - TPH CWG Banded					
QTS Environmental Report No: 15-28155	Date Sampled	22/01/15	22/01/15		
Constructive Evaluation Ltd	Time Sampled	None Supplied	None Supplied		
Site Reference: Sussex House, Quarry Lane	TP / BH No	WS1	WS2		
Project / Job Ref: 14.8385	Additional Refs	None Supplied	None Supplied		
Order No: 14.8385/LC	Depth (m)	1.42	1.32		
Reporting Date: 29/01/2015	QTSE Sample No	133149	133150		

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6	ug/l	< 10	NONE	< 10	< 10		
Aliphatic >C6 - C8	ug/l	< 10	NONE	< 10	< 10		
Aliphatic >C8 - C10	ug/l	< 10	NONE	< 10	180		
Aliphatic >C10 - C12	ug/l	< 10	NONE	< 10	305		
Aliphatic >C12 - C16	ug/l	< 10	NONE	< 10	278		
Aliphatic >C16 - C21	ug/l	< 10	NONE	< 10	22		
Aliphatic >C21 - C34	ug/l	< 10	NONE	< 10	< 10		
Aliphatic (C5 - C34)	ug/l	< 70	NONE	< 70	785		
Aromatic >C5 - C7	ug/l	< 10	NONE	< 10	< 10		
Aromatic >C7 - C8	ug/l	< 10	NONE	< 10	< 10		
Aromatic >C8 - C10	ug/l	< 10	NONE	< 10	194		
Aromatic >C10 - C12	ug/l	< 10	NONE	< 10	592		
Aromatic >C12 - C16	ug/l	< 10	NONE	< 10	246		
Aromatic >C16 - C21	ug/l	< 10	NONE	< 10	18		
Aromatic >C21 - C35	ug/l	< 10	NONE	< 10	< 10		
Aromatic (C5 - C35)	ug/l	< 70	NONE	< 70	1050		
Total >C5 - C35	ug/l	< 140	NONE	< 140	1835		



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Water Analysis Certificate - BTEX / MTBE					
<b>QTS Environmental Report No: 15-28155</b>	<b>Date Sampled</b>	22/01/15	22/01/15		
<b>Constructive Evaluation Ltd</b>	<b>Time Sampled</b>	None Supplied	None Supplied		
<b>Site Reference: Sussex House, Quarry Lane</b>	<b>TP / BH No</b>	WS1	WS2		
<b>Project / Job Ref: 14.8385</b>	<b>Additional Refs</b>	None Supplied	None Supplied		
<b>Order No: 14.8385/LC</b>	<b>Depth (m)</b>	1.42	1.32		
<b>Reporting Date: 29/01/2015</b>	<b>QTSE Sample No</b>	133149	133150		

Determinand	Unit	RL	Accreditation				
Benzene	ug/l	< 1	ISO17025	< 1	< 1		
Toluene	ug/l	< 5	ISO17025	< 5	< 5		
Ethylbenzene	ug/l	< 5	ISO17025	< 5	< 5		
p & m-xylene	ug/l	< 10	ISO17025	< 10	< 10		
o-xylene	ug/l	< 5	ISO17025	< 5	< 5		
MTBE	ug/l	< 10	ISO17025	< 10	< 10		



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<b>Soil Analysis Certificate - Methodology &amp; Miscellaneous Information</b>
<b>QTS Environmental Report No: 15-28155</b>
<b>Constructive Evaluation Ltd</b>
<b>Site Reference: Sussex House, Quarry Lane</b>
<b>Project / Job Ref: 14.8385</b>
<b>Order No: 14.8385/LC</b>
<b>Reporting Date: 29/01/2015</b>

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR detection	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	EPH TEXAS	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID	E104
Water	F	TPH LQM	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6 - C10)	Determination of hydrocarbons C6-C10 by headspace GC-MS	E101

Key

**F Filtered**  
**UF Unfiltered**

# APPENDIX H

## Monitoring Sheets

<b>Project No:</b>	14.8385	<b>Project Name:</b>	Sussex House, Quarry Lane
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<b>Date:</b>	05-02-2015	<b>Personnel:</b>	LC
<b>Weather:</b>	Clear and dry	<b>Ground Conditions:</b>	Dry, undercover
<b>Temp (°C):</b>	2°C	<b>Humidity (%):</b>	82
<b>Atmospheric Pressure:</b>	Steady	<b>Monitoring Round:</b>	MR3

### Well Information

Well No.	WS1	WS2	WS3	
<b>Borehole Diameter (mm):</b>	50.0mm	50.0mm	50.0mm	
<b>Time Monitored</b>	12.50	13.10	13.30	

### Gas Monitoring

<b>ATM P (mb)</b>		1023	1023	1022	
<b>Downhole Pressure (mb)</b>		-0.03	-0.10	-0.21	
<b>Flow Rate (l/hr)</b>		-1.1	-0.8	-0.5	
<b>Methane (%)</b>	<b>Peak</b>	0.1	0.1	0.1	
	<b>Steady</b>	0.1	0.1	0.1	
<b>LEL (%)</b>	<b>Peak</b>	1	2	2	
	<b>Steady</b>	1	2	2	
<b>Carbon Dioxide (%)</b>	<b>Peak</b>	0.5	0.1	0.1	
	<b>Steady</b>	0.4	0	0	
<b>Oxygen (%)</b>	<b>Peak</b>	20.3	21.4	21.7	
	<b>Steady</b>	20.3	21.5	21.7	
<b>VOC's (ppm)</b>		3.5 (background 1.7)	0.0	1.8 (background 2.7)	
<b>H<sub>2</sub>S (ppm)</b>		0	0	0	
<b>H<sub>2</sub></b>		Low	Low	Low	
<b>CO (ppm)</b>		0	0	0	

<b>Project No:</b>	14.8385	<b>Project Name:</b>	Sussex House, Quarry Lane
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### **Groundwater Monitoring**

Well No.		WS1	WS2	WS3	
Water Level (m)		1.59	1.43	-	
Depth of Borehole (m)		2.77	2.22	1.53	
Volume Purged (l)		6	6		
Recharge Rate	Level after purging (m)				
	Final level (m)	1.72	1.40		
	Time taken (min)	10	10		
Sampled (Yes/No)		Yes	Yes	No	
Water Appearance		Brown silty	Brown silty		
Hydrocarbon Sheen		No	No		
Odour		No	No		
Groundwater Level (mAOD)					
Product Thickness (cm)					
Headspace Reading (ppm)					

Diameter (mm)	35mm	50mm	75mm	100mm
Volume to be purged (L/m)	3	6	14	24

**Remarks:**

Gas monitoring conducted over an approximate 3 minute period.

Gas Analyser (GA2000+) – Calibration/service certificates can be provided on request.

**PID:**

**Photoionisation Detector (PID – Minirae 2000 lamp 10.6eV) / Photoionisation Detector (PID – PhotoVAC 2020 PRO lamp 10.6eV) - Calibration/service certificates can be provided on request.**

**Key:**

↓ Decreasing ↑ Increasing - Fluctuating

N/A – Not applicable

**Recharge rate:**

<0.1m/min = Poor

0.1-0.5m/min = Moderate

>0.5m/min = Good



<b>Project No:</b>	14.8385	<b>Project Name:</b>	Sussex House, Quarry Lane
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<b>Project No:</b>	14.8385	<b>Project Name:</b>	Sussex House, Quarry Lane
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<b>Date:</b>	22-01-2015	<b>Personnel:</b>	LC & AT
<b>Weather:</b>	Clear and dry to start then heavy rain by WS3	<b>Ground Conditions:</b>	Dry, undercover
<b>Temp (°C):</b>	3°C	<b>Humidity (%):</b>	84
<b>Atmospheric Pressure:</b>	Decreasing	<b>Monitoring Round:</b>	MR2

### Well Information

Well No.	WS1	WS2	WS3	
<b>Borehole Diameter (mm):</b>	50.0mm	50.0mm	50.0mm	
<b>Time Monitored</b>	14.25	14.45	15.10	

### Gas Monitoring

<b>ATM P (mb)</b>		979	978	977	
<b>Downhole Pressure (mb)</b>		-0.30	-0.36	-0.47	
<b>Flow Rate (l/hr)</b>		-0.5	-0.4	-0.1	
<b>Methane (%)</b>	<b>Peak</b>	0.2	0.1	0.1	
	<b>Steady</b>	0.1	0.1	0.1	
<b>LEL (%)</b>	<b>Peak</b>	1	2	2	
	<b>Steady</b>	1	2	2	
<b>Carbon Dioxide (%)</b>	<b>Peak</b>	4.6	0.1	0.6	
	<b>Steady</b>	4.5	0.0	0.5	
<b>Oxygen (%)</b>	<b>Peak</b>	13.5	20.8	18.8	
	<b>Steady</b>	13.4	21.2	18.8	
<b>VOC's (ppm)</b>		0.0	0.8 (background 0.4)	3.8 (background 4.2)	
<b>H<sub>2</sub>S (ppm)</b>		0	0	0	
<b>H<sub>2</sub></b>		Low	Low	Low	
<b>CO (ppm)</b>		0	0	0	

<b>Project No:</b>	14.8385	<b>Project Name:</b>	Sussex House, Quarry Lane
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### Groundwater Monitoring

Well No.		WS1	WS2	WS3	
Water Level (m)		1.47	1.25	-	
Depth of Borehole (m)		2.77	2.22	1.53	
Volume Purged (l)		6	6		
Recharge Rate	Level after purging (m)				
	Final level (m)	1.47	1.34		
	Time taken (min)	15	15		
Sampled (Yes/No)		Yes	Yes	No	
Water Appearance		Brown silty	Brown silty		
Hydrocarbon Sheen		No	No		
Odour		No	Strong odour		
Groundwater Level (mAOD)					
Product Thickness (cm)					
Headspace Reading (ppm)					

Diameter (mm)	35mm	50mm	75mm	100mm
Volume to be purged (L/m)	3	6	14	24

#### Remarks:

Gas monitoring conducted over an approximate 3 minute period.  
Gas Analyser (GA2000+) – Calibration/service certificates can be provided on request.

#### PID:

**Photoionisation Detector (PID – Minirae 2000 lamp 10.6eV) / Photoionisation Detector (PID – PhotoVAC 2020 PRO lamp 10.6eV) - Calibration/service certificates can be provided on request.**

#### Key:

↓ Decreasing ↑ Increasing - Fluctuating  
N/A – Not applicable

#### Recharge rate:

<0.1m/min = Poor  
0.1-0.5m/min = Moderate  
>0.5m/min = Good

<b>Project No:</b>	14.8385	<b>Project Name:</b>	Sussex House, Quarry Lane
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<b>Date:</b>	22-01-2015	<b>Personnel:</b>	LC & AT
<b>Weather:</b>	Clear	<b>Ground Conditions:</b>	Dry, undercover
<b>Temp (°C):</b>	4°C	<b>Humidity (%):</b>	75
<b>Atmospheric Pressure:</b>	Increasing	<b>Monitoring Round:</b>	MR1

### Well Information

Well No.	WS1	WS2	WS3	
<b>Borehole Diameter (mm):</b>	50mm	50mm	50mm	
<b>Time Monitored</b>	11.00	11.20	11.40	

### Gas Monitoring

<b>ATM P (mb)</b>		1019	1018	1018	
<b>Downhole Pressure (mb)</b>		-0.13	-0.23	-0.31	
<b>Flow Rate (l/hr)</b>		-0.91	-0.61	-0.41	
<b>Methane (%)</b>	<b>Peak</b>	0.1	0.1	0.2	
	<b>Steady</b>	0.1	0.1	0.2	
<b>LEL (%)</b>	<b>Peak</b>	1	1	3	
	<b>Steady</b>	1	1	3	
<b>Carbon Dioxide (%)</b>	<b>Peak</b>	0.1	0.1	0.2	
	<b>Steady</b>	0.1	0.0	0.3	
<b>Oxygen (%)</b>	<b>Peak</b>	20.6	21.2	21.4	
	<b>Steady</b>	20.6	21.2	21.3	
<b>VOC's (ppm)</b>		0.0	13.9	102	
<b>H<sub>2</sub>S (ppm)</b>		0	0	0	
<b>H<sub>2</sub></b>		Low	Low	Low	
<b>CO (ppm)</b>		0	0	0	

<b>Project No:</b>	14.8385	<b>Project Name:</b>	Sussex House, Quarry Lane
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### Groundwater Monitoring

Well No.		WS1	WS2	WS3	
Water Level (m)		1.42	1.32	-	
Depth of Borehole (m)		2.77	2.22	1.53	
Volume Purged (l)		6	6		
Recharge Rate	Level after purging (m)				
	Final level (m)	1.45	1.3		
	Time taken (min)	15	15		
Sampled (Yes/No)		Yes	Yes	No	
Water Appearance		Brown silty	Brown silty		
Hydrocarbon Sheen		No	No		
Odour		No	Strong odour		
Groundwater Level (mAOD)					
Product Thickness (cm)					
Headspace Reading (ppm)					

Diameter (mm)	35mm	50mm	75mm	100mm
Volume to be purged (L/m)	3	6	14	24

#### Remarks:

Gas monitoring conducted over an approximate 3 minute period.  
Gas Analyser (GA2000+) – Calibration/service certificates can be provided on request.

#### PID:

**Photoionisation Detector (PID – Minirae 2000 lamp 10.6eV) / Photoionisation Detector (PID – PhotoVAC 2020 PRO lamp 10.6eV) - Calibration/service certificates can be provided on request.**

#### Key:

↓ Decreasing ↑ Increasing - Fluctuating  
N/A – Not applicable

#### Recharge rate:

<0.1m/min = Poor  
0.1-0.5m/min = Moderate  
>0.5m/min = Good

# APPENDIX I

## Limitations

The Environment Agency has recently undertaken revision of the Soil Guideline Values (SGVs) which are partially complete. Where standards are available using the “new” approach, these have been utilised for correlative purposes. Where standards have not yet been revised, guidance following the “old” approach has been utilised. Please note that upon release of the remaining guidelines, the standards contained within this report may be subject to change. In addition, the second edition of the LQM CIEH guidance has now been released and will be utilised in favour of previously published guideline values.

The Client is advised that the conditions observed on site by Constructive Evaluation Limited at the time of the walkover survey are subject to change. Certain indicators of the presence of hazardous substances may have been latent at the time of the most recent site reconnaissance and they may subsequently have become noticeable.

The Client is advised that although every effort is made to identify suspect areas CE cannot be held responsible if buildings on site contain Asbestos. Additionally Engineers sent to site are not specially trained in this aspect of work: if further determination is required the expertise of a BHOS trainer surveyor should be sought.

Comments made relating to soil or groundwater conditions are obtained from the sources described within the text and observations made at the time of the walkover survey unless otherwise stated. Soil or groundwater conditions may vary as a result of seasonal fluctuations or other effects.

The accuracy of the map extracts can not be guaranteed and it should be noted that different conditions may have existed between the subsequent to the various map surveys. Therefore, there can be no certainty that all areas of contamination have been identified during the Phase 1 investigation.

Every effort is undertaken to provide information regarding the potential risks associated with flooding, however CE may not be party to information which the local Authority and Environment Agency may hold in relation to historical or flash flood events.

This assessment is to be regarded preliminary in nature and may be subject to amendment in light of additional information becoming available or statutory consultee review, including the Environment Agency, Local council and NHBC etc. The statutory consultees have not been contacted at this time:

The findings and opinions conveyed in this report are based on information obtained from a variety of sources, including that from previous Site investigations and chemical testing laboratories. Constructive Evaluation Limited has assumed that such information is correct. Constructive Evaluation Limited cannot and does not guarantee the authenticity or reliability of the information it has relied upon and can accept no responsibility for inaccuracies with the data supplied by other parties.

This report is written in the context of an agreed scope of work between Constructive Evaluation Limited and the Client and should not be used in a different context. In light of additional information becoming available, improved practices and changes in legislation amendment or re-interpretation of the assessment or report in whole or part may be necessary after its original submission.

This report is provided for sole use by the Client and is confidential to them. No responsibility whatsoever for the contents of the report will be accepted to anyone other than the Client.

Constructive Evaluation Limited believes that providing information about limitations is essential to help the Client identify and thereby assess and manage risks.

The copyright of written materials supplied shall remain the property of Constructive Evaluation Limited but with a royalty-free perpetual licence, granted to the Client on payment in full of any outstanding monies.

Constructive Evaluation Limited does not provide legal advice and the advice of the Client’s legal advisors may also be required.

An ecological, topographical, archaeological, asbestos survey or service search was outside the scope of this report.