APPENDIX C

PHASE 1 SITE INVESTIGATION REPORT (*ENCON ASSOCIATES LTD*)

Phase I Site Investigation



Proposed Chorlton High School Site, Hough End Centre, Mauldeth Road West, Manchester, M21 7SX

April 2018

Encon Associates Limited
10 Chapel Lane
Arnold
Nottingham
NG5 7DR

A3649

Date of Report:	April 2018
Report Reference:	M566
Issued by:	RB
Checked by:	AIL

HOUGH END CENTRE, CHLORTON SCHOOL, MANCHETSER – EXECUTIVE SUMMARY

Issue	Remarks
Grid Reference	383115,393488
Proposed Development	Three and two storey secondary school.
Former Uses	TA Centre and Waverley care home
Present Uses	Playing field and dog training centre for Greater Manchester Police.
Geology	Drift deposits comprising glacial sand and gravel. Solid geology comprises Wilmslow sandstone formation.
Mining & Quarrying	The site is not in an area affected by shallow coal mining. No evidence has been found to suggest that the site is affected by quarrying.
Hydrology	The nearest surface water feature is the Chorlton Brook, 97m north-east of the site. The brook is culverted along the northern site boundary. The site is recorded as being situated within a zone 2 of flooding from rivers and sea.
Hydrogeology	Principal Aquifer. The site does not lie within a source protection zone.
Landfill & other potential gas sources	Areas of made ground along the northern site boundary. There are also areas recorded between 17m and 118m of the site boundary. Potentially infilled land adjacent to the western site boundary, associated with the railway line cuttings and an electricity substation 10 south-west of the site. An unspecified pit is identified 33m and a pond 34m north-east of the site
Ground Investigation Strategy	• Trial pits/ boreholes to enable the made ground and natural soils to be examined • Appropriate sampling to enable chemical and geotechnical testing to be carried out • Installation of monitoring wells to enable subsequent groundwater and gas measurements

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SCOPE OF INVESTIGATION

Dunelm Geotechnical and Environmental Limited (Dunelm) carried out a Preliminary Investigation (Desk Study) of Hough End Centre, Mauldeth Road West, Manchester, M21 7SX on behalf of Encon Associates.

It is proposed to develop the site with a two and three storey secondary school.

The purpose of this preliminary investigation is to evaluate likely ground conditions and significant geoenvironmental issues at the site, and to plan the scope of subsequent phases of investigation.

This report may be regarded as a Preliminary Risk Assessment in accordance with the Environment Agency's guidance document *Model Procedures for the Management of Land Contamination* (CLR 11, 2004).

This preliminary investigation has been undertaken with due regard to current contaminated land guidance issued by the Royal Institution of Chartered Surveyors (RICS) together with BS 10175: 2011, *"Code of Practice for the Investigation of Potentially Contaminated Land"* and relevant sections of BS 5930: 1999, *"Code of Practice for Site Investigations"*.

The objectives of the investigation were as follows:

- To determine the land use history of the site from an inspection of available Ordnance Survey (OS) plans
- To determine the environmental setting of the site from available sources
- To determine whether past mining may have had an influence on the site
- To determine whether the site has previously been used for purposes that may have given rise to significant ground contamination
- To provide recommendations for further investigation.

Information has been obtained from various sources and the full responses received are presented in Appendix C; details relevant to the site are discussed in Sections 3 and 4.

Conditions of offer and notes on limitations relevant to all Dunelm geoenvironmental investigations are described in Appendix D and should be read in conjunction with this report.

SITE RECONNAISSANCE

GENERAL

The centre of the site is located at OS Grid Ref 383115,393488. The site is located 5km south of Manchester city centre. The site location is shown in Drawing Number M566/01 in Appendix A to this report.

The preliminary site inspection was undertaken during March 2018 and site photographs are presented in Appendix B.

TOPOGRAPHY & SITE FEATURES

The site is relatively flat and is used as a police dog training centre by Greater Manchester Police.

The site boundaries currently comprise trees and fencing on all sides.

Towards the western boundary is the metro link railway line. To the north is Mauldeth Road West and to the east is The Greater Manchester Police Sports and Social Club. Broughton Park rugby club is

located south of the site.

EVIDENCE OF PRESENT AND FORMER LAND USE

The site is split by number of fences. The centre of the site is currently used as football pitches and for police dog training.

SITE HISTORY

In order to determine the history of the site, extracts from historical Ordnance Survey (OS) plans have been examined. Copies of these plans are provided in Appendix C.

A summary of the history of the on-site and off-site features is presented below. It is not the intention of this report to describe in detail all the changes that have occurred on or adjacent to the site, only those pertinent to the site.

SUMMARY OF HISTORICAL INFORMATION

OS Map Edition	On-site Features	Off-site Features
1849	A field boundary traverses the south-western boundary of the site.	The surrounding area is illustrated with farmland.
1881	The site is unoccupied.	Adjacent to the western site boundary is Midland Railway line. Houghend Clough is illustrated 20m north-east of the site.
1894	No significant changes.	Manchester Central railway line is illustrated 100m north-east of the site. Houghend Clough is culverted to the north of the site. Manchester southern cemetery is illustrated 500m south of the site.
1933	No significant changes.	Residential development 50m north-west and 120m north of the site. Sports Ground and pavilion is illustrated 100m of the site. A pond is illustrated 50m east of the site.
1950-1954	The site developed with a cluster of buildings (named a TA Centre in mapping dated 1966).	The pond 50m east is no longer illustrated. A refuse heap is illustrated 150m east of the site.
1971-1972	The site is named as a playing field. Waverley (home for the aged) is illustrated towards the north-eastern corner of the site.	Broughton Park football club is recorded 50m north of the site with a stand and terraces. West Didsbury electricity substation is illustrated 37m west of the site. The railway line adjacent to the western boundary is now dismantled.
1978-1983	No significant changes.	Hough End Centre (Police Kennels & Stables) is illustrated to the east of the site.
2014	The site is unoccupied.	No Significant changes.

ENVIRONMENTAL SETTING

INFORMATION SOURCES

The environmental setting of the site was determined through reference to the following:

- British Geological Survey (BGS) 1: 50,000 scale sheet No 85 Manchester
- GroundSure Report (including historical map extracts)
- BRE Publication BR211 *Radon: Guidance on Protective Measures for New Dwellings*
- British Geological Survey (BGS) borehole logs

GEOLOGY

The site is shown to be underlain by drift deposits comprising glacial sand and gravel.

The solid geology underlying the site comprises the Wilmslow sandstone formation.

No faults are located in the vicinity of the site.

Several BGS boreholes are located in the vicinity of the site. A borehole located 91m north-east of the site (Ref: SJ89SW386) encountered made ground to 3.40m bgl, underlain by sandy clay to 7.00m bgl. Another borehole located 93m north-east of the site encountered made ground to 2.80m bgl, underlain by sand and clay to 7.00m bgl.

No significant ground hazards have been identified by the British Geological Survey as reported in the Groundsure Report.

MINING AND QUARRYING

The site is not in an area affected by coal shallow mining.

No evidence has been found to suggest that the site has been affected by quarrying.

HYDROLOGY

The nearest surface water feature is the Chorlton Brook, 97m north-east of the site. The brook is culverted along the northern site boundary.

The Groundsure Report indicates no licensed surface water abstractions within 1000m of the site.

There are eight recorded discharge consents within 500m of the site. The closest is located 30m north-east of the site at a CSO Opposite 426 Mauldeth Road Wes, NGR 383020 393530. The discharge consent is for surface water into the River Cole.

There is one recorded pollution incident located within 500m of the site. This is located 439m north-east of the site, at Mauldeth Road West Service station. NGR 383423 393695. The effluent type was sewage discharges and the receiving water was the Chorlton Brook in 2004.

The site is recorded as being situated within a zone 2 of flooding from rivers and sea; further information should be sought from the Environment Agency since this may represent a significant constraint to development.

The majority of the site is designated as low risk of surface water (pluvial) flooding. Some localised areas along the south western boundary are identified as moderate to high.

HYDROGEOLOGY

Using the Environment Agency's Policy and Practice for the Protection of Groundwater the solid geology beneath the site is classified as a Principal Aquifer. Principal aquifers are highly permeable formations that are able to support large abstractions for public supply and other purposes.

The site does not lie within a source protection zone.

There are no recorded groundwater abstractions within 1000m of the site.

LANDFILLS & OTHER POTENTIAL GAS SOURCES

There is one historical landfill recorded with 500m of the site boundary. This is located 431m south-west of the site, on Nell Lane.

Several waste treatment sites are recorded within 500m of the site boundary. The closest is recorded

421m south-west of the site at NGR 382625 392922 for refuse destructor, dated 1955.

The GroundSure report indicates areas of made ground along the northern site boundary. There are also areas recorded between 17m and 118m of the site boundary. Consequently, there may be made ground at these locations that could represent a potential source of gas.

The Groundsure report indicates potentially infilled land adjacent to the western site boundary, associated with the railway line cuttings and an electricity substation 10 south-west of the site. An unspecified pit is identified 33m and a pond 34m north-east of the site. Consequently, there may be made ground at these locations that could represent a potential source of gas.

RADON GAS

In accordance with the procedure described in BRE Publication BR211 *Radon: Guidance on Protective Measures for New Dwellings*, no radon protection measures are required for new buildings on the site.

CONCEPTUAL SITE MODEL

GENERAL

Based on the information presented in the preceding Sections, and in accordance with the CLR11 guidance noted in Section 1, a Preliminary Conceptual Site Model has been produced. A simplified diagrammatic form of the model showing the most significant features is included as Drawing No M566/02 in Appendix A.

It is understood that the site is to be redeveloped with a two and three storey secondary school.

The main features of the model are discussed in the following sections together with preliminary recommendations where appropriate.

LIKELY GROUND CONDITONS

Based on available information, ground conditions are likely to comprise possible made ground with sand and gravels, underlain by the Wilmslow sandstone formation.

HAZARD IDENTIFICATION – CONTAMINATION SOURCES

The desk study has shown that the site has been occupied previously and it is possible that significant contamination is present associated with the site's previous use a TA Centre and Waverley care home.

Based on the above references, the following potential contaminants have been identified associated with the former use:

- Metals
- Asbestos
- Polycyclic aromatic hydrocarbon (PAHs)
- Total petroleum hydrocarbon (TPHs)

It should be noted that the above potential contaminants are considered to be commonly associated with the specified industrial land use; no evidence exists to indicate that such contaminants are present in the ground at the site. However, an intrusive investigation should take into account the possibility that the above potential contaminants may be encountered. Risk assessment should be undertaken for contamination identified during intrusive investigation.

HAZARD IDENTIFICATION – GAS SOURCES

Potential sources of hazardous gas that could affect the site have been identified as follows:

- Possible made ground on site;
- Potentially infilled land adjacent to the western boundary, a pit 33m and a pond 334m north-east of the site.

A hazardous gas risk assessment is therefore recommended as part of an intrusive investigation at the site. The scope of a gas investigation (including the number of monitoring points and quantity of data required) should be related to the gas generation potential of the source and the sensitivity of the proposed end use.

RISK ASSESSMENT FOR CONTAMINATED LAND

In the CLR11 guidance noted above, risk assessment for contaminated land should be conducted using the following four steps: Hazard Identification, Hazard Assessment, Risk Estimation, and Risk Evaluation.

The results of the Hazard Identification process (identifying potential contamination and gas sources) are shown in the preceding sections.

'Hazard Assessment' involves analysing the potential for unacceptable risks, i.e. identifying what receptors and pathways could be present, what pollutant linkages could result, and what the effects might be. 'Pollution linkages' is a term used to describe a particular combination of contaminant pathway and receptor.

Following the site's redevelopment, significant receptors in terms of human health that could be affected by contamination will include future site end user; pupils, staff, maintenance staff. Ecosystem receptors include the underlying principal aquifer and Chorlton Brook.

Potential pollution linkages considered to be significant at this stage are shown on the Preliminary Conceptual Site Model drawing in Appendix A.

Based on the model, potentially unacceptable risks have been identified and further action is therefore recommended.

This further action should comprise an intrusive ground investigation that would enable additional Hazard Assessment to be carried out, followed by Risk Estimation and Risk Evaluation. The Preliminary Conceptual Site Model should be revised on completion of the ground investigation. An outline of a suitable intrusive ground investigation is included in the following Section of this report.

GROUND INVESTIGATION STRATEGY

An intrusive ground investigation should be undertaken to verify the assumptions made in the Preliminary Conceptual Site Model and to provide data for foundation design.

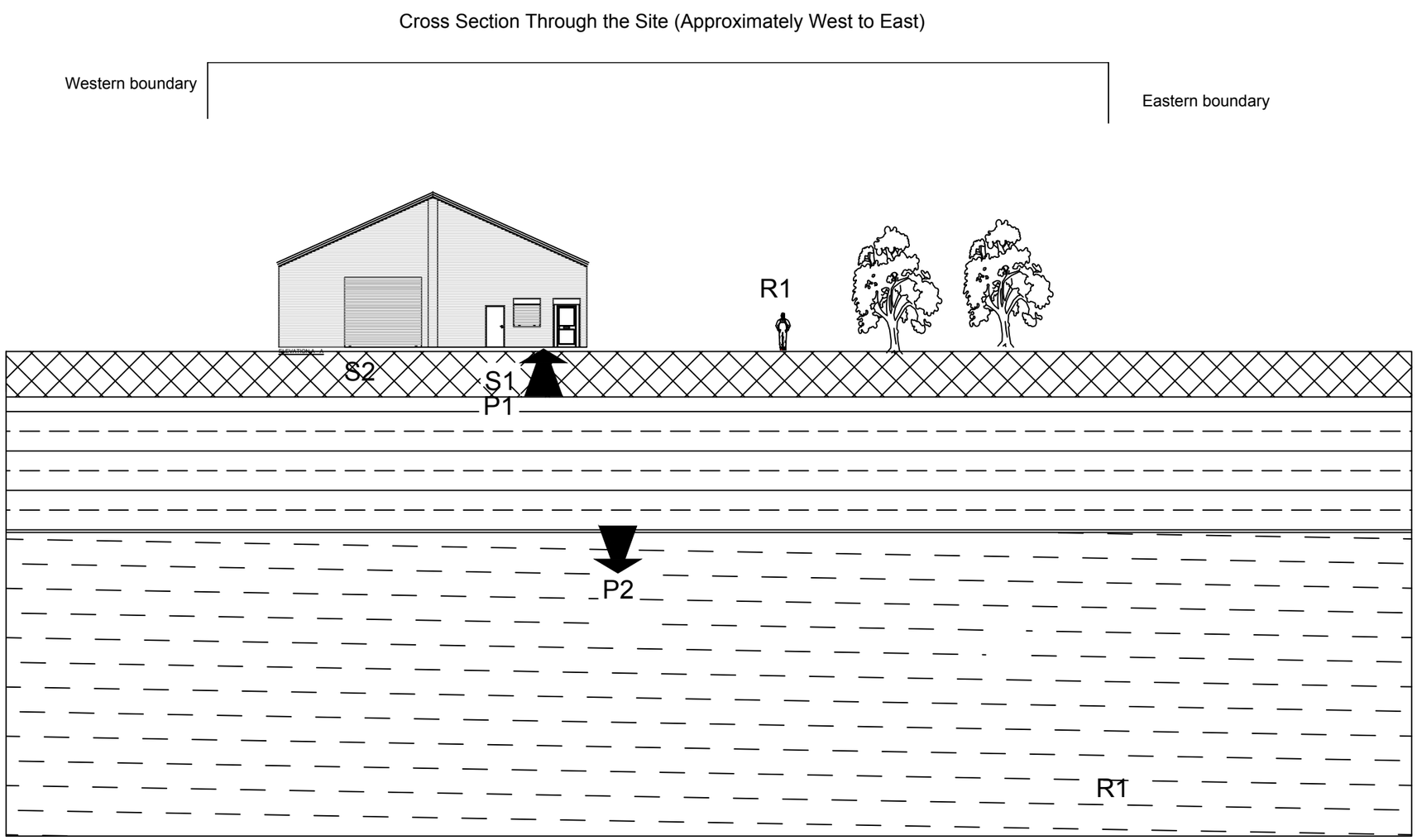
An outline ground investigation strategy is summarised below, based on the preliminary conceptual site model and information obtained during the desk study.

- Trial pits/boreholes to enable the made ground and natural soils to be examined
- Appropriate sampling to enable chemical and geotechnical testing to be carried out
- Installation of monitoring wells to enable subsequent groundwater and gas measurements

APPENDIX A

Drawings

Cross Section Through the Site (Approximately West to East)



Ground Conditions Summary

MADE GROUND

GLACIAL DEPOSITS

SANDSTONE FORMATION

Pollutant Linkages

SOURCE	1. Potential contamination from made ground if encountered. 2. Potential source of gas from infilled land and made ground.
PATHWAY	1. Potential inhalation, dermal contact or ingestion of determinants within made ground. 2. Potential migration of contaminants into underlying natural deposits.
RECEPTOR	1. Human Health 2. Underlying aquifer

NOT TO SCALE: Contractor to check all dimensions on site before commencement of any works. No dimensions to be scaled from this drawing.

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CLIENT:

Encon Associates Limited

PROJECT TITLE:

Hough End Centre, Chorlton

DRAWING TITLE:

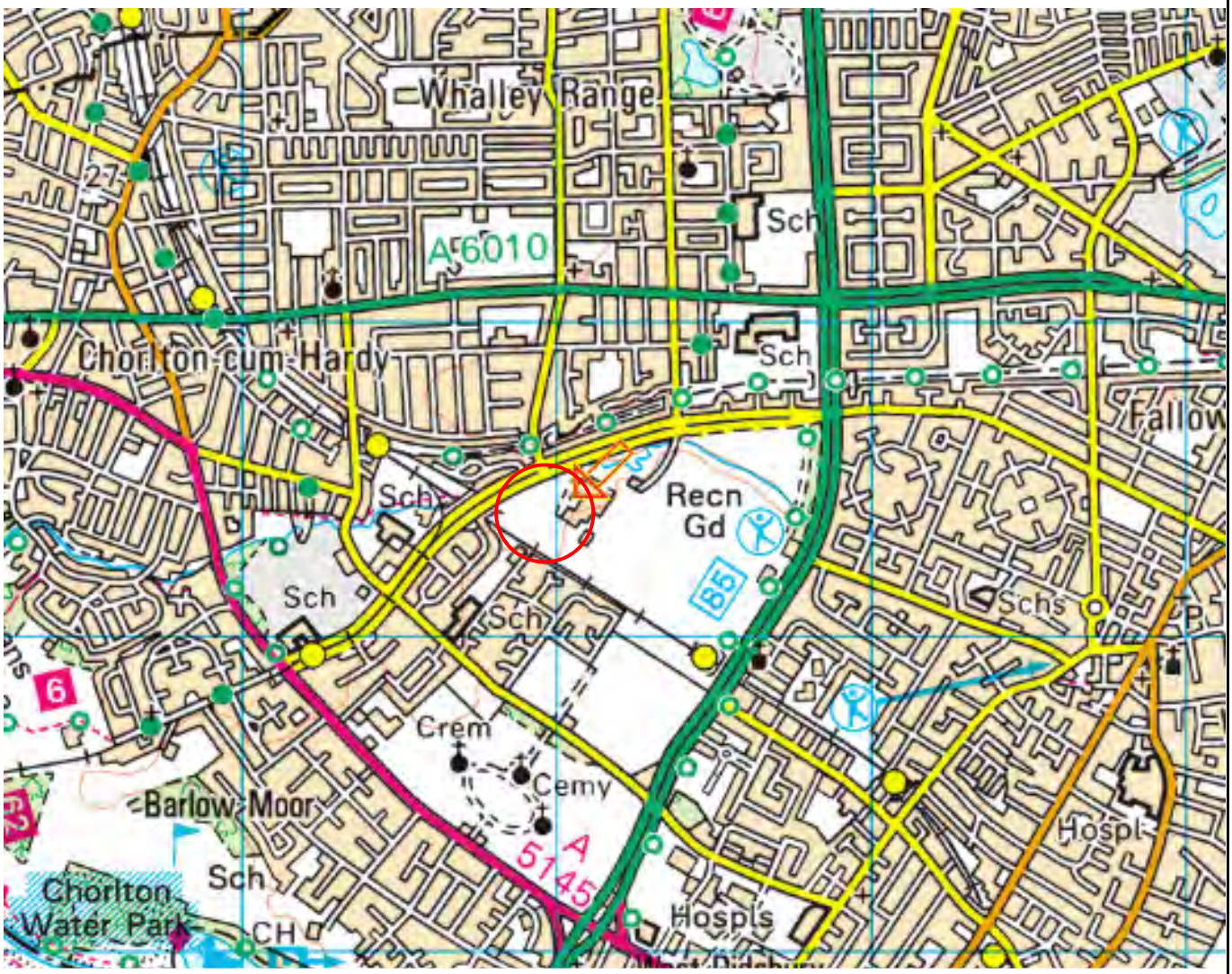
Preliminary Conceptual Site Model

DRAWING NUMBER:

M566/02

DATE:

March 2018



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	Contract: **Hough End Centre - Chorlton School, Manchester**			**Contract No:** **M566**
	Client: **Encon Associates Ltd**			
	Drawing Title: **Site Location Plan**			
Drawing No: **M566/01**	**Date:** **March 2018**	**Scale:** **NTS**	**Status:** **Final**	**Drawn by:** **RB**

APPENDIX B

Photographic Survey

Photographs





	Project	Hough End Centre	Plate
	Project No.	M566	1
	Carried out for	Emcon Associates Ltd	

Photographs





	Project	Hough End Centre	Plate
	Project No.	M566	2
	Carried out for	Emcon Associates Ltd	

Photographs





	Project	Hough End Centre	Plate
	Project No.	M566	3
	Carried out for	Emcon Associates Ltd	

Photographs



	Project	Hough End Centre	Plate
	Project No.	M566	4
	Carried out for	Emcon Associates Ltd	

APPENDIX C

Desk Study Information

Dunelm Geotechnical & Environmental Ltd

FOUNDATION HOUSE, ST. JOHNS ROAD, DURHAM/MEADOWFIELD INDUSTRIAL ESTATE, DH7 8TZ

Groundsure Reference:	GS-4798417
Your Reference:	PONW5446-M566-RB
Report Date	12 Mar 2018
Report Delivery Method:	Email - pdf

Enviro Insight

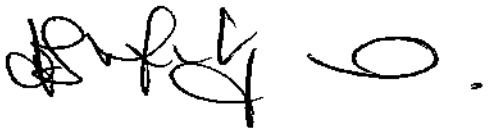
Address: HOUGH END CENTRE, MAULDETH ROAD WEST, MANCHESTER, M21 7SX

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

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

Yours faithfully,



Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**HOUGH END CENTRE, MAULDETH ROAD WEST, MANCHESTER, M21 7SX**
Date:	**12 Mar 2018**
Reference:	**GS-4798417**
Client:	**Dunelm Geotechnical & Environmental Ltd**

NW N NE



W E

SW S SE

Aerial Photograph Capture date:	11-Jun-2015
Grid Reference:	382975,393406
Site Size:	4.76ha

Report Reference: GS-4798417
Client Reference: PONW5446-M566-RB

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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: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	1	3	36	84
1.2 Additional Information – Historical Tank Database	0	0	2	0
1.3 Additional Information – Historical Energy Features Database	0	5	4	22
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	7
1.6 Potentially Infilled Land	1	2	15	49

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	1
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	3	1	4
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	1	0	2
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	12	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	1	5	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	1	1
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	1
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	Yes
6.10 Detailed River Network entries within 500m of the site	1	0	2	2	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Low
7.4 Flood Defences within 250m of the study site	Identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Limited potential
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Low

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	2
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	2

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	Very Low
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Negligible
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Negligible
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Very Low
9.2 Radon	
9.2.1 Radon Affected Area rating	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Radon protection measures requirements	No radon protective measures are necessary.

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	None identified
10.3 Brine affected areas within 75m of the study site	None identified

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. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. 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.

3. 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.

4. 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 gas pipelines and underground electricity transmission lines.

5. Geology

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

6. 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.

7. Flooding

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

8. 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.

9. 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 and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. 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”.

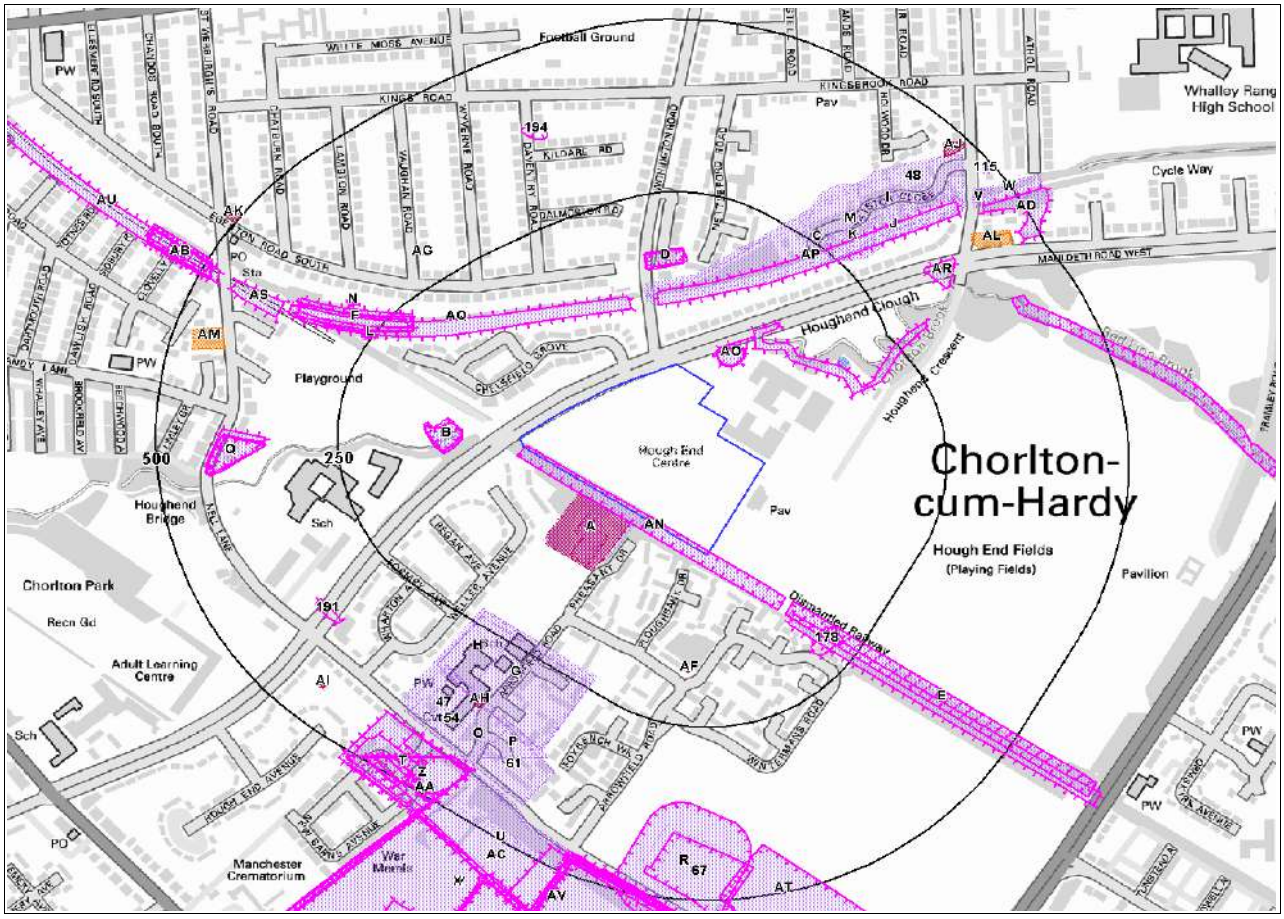
All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use

NW N NE

W E

SW S SE



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Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 124

ID	Distance [m]	Direction	Use	Date
1AN	0	On Site	Cuttings	1966
2A	10	SW	Electricity Substation	1978
3AO	33	NE	Unspecified Pit	1934
4A	34	SW	Electric Substation	1988
5B	80	W	Unspecified Pit	1938
6B	80	W	Unspecified Pit	1955
7AE	81	NE	Unspecified Ground Workings	1955
8AP	89	N	Cuttings	1892
9C	90	N	Railway Sidings	1934
10AQ	97	N	Cuttings	1892
11C	99	N	Railway Sidings	1955
12C	104	N	Railway Sidings	1938
13E	136	SE	Cuttings	1966
14D	142	N	Unspecified Heap	1934
15D	144	N	Unspecified Ground Workings	1938
16D	144	N	Unspecified Ground Workings	1938
17E	148	SE	Cuttings	1892
18F	213	NW	Cuttings	1938
19F	215	NW	Cuttings	1955
20F	216	NW	Cuttings	1934
21G	228	SW	Nursery	1966
22G	228	SW	Nursery	1955
23G	228	SW	Nursery	1938
24H	230	SW	Nursery	1911
25H	237	SW	Nursery	1905
26G	238	SW	Nursery	1938
27G	239	SW	Nursery	1934
28I	241	NE	Unspecified Depot	1966
29I	241	NE	Unspecified Depot	1978
30I	241	NE	Unspecified Depot	1988
31J	241	NE	Goods Yard	1905
32J	241	NE	Goods Yard	1923

33J	244	NE	Railway Sidings	1916
34M	247	NE	Goods Yard	1938
35J	249	NE	Railway Sidings	1905
36J	249	NE	Railway Sidings	1923
37L	249	NW	Unspecified Shafts	1923
38K	250	NE	Goods Yard	1911
39K	250	NE	Railway Sidings	1911
40K	250	NE	Goods Yard	1911
41L	253	NW	Unspecified Shafts	1916
42M	253	NE	Railway Sidings	1938
43J	253	NE	Goods Yard	1916
44L	258	NW	Junction Station	1938
45N	297	NW	Unspecified Shafts	1923
46N	301	NW	Unspecified Shafts	1916
47	321	SW	Nursery	1955
48	332	NE	Engineering Works	1955
49O	332	SW	Nursery	1892
50O	332	SW	Nursery	1905
51AR	334	NE	Unspecified Pit	1905
52O	336	SW	Nursery	1934
53O	336	SW	Nursery	1916
54	337	SW	Nursery	1938
55P	349	SW	Nursery	1938
56Q	349	W	Unspecified Pit	1934
57P	349	SW	Nursery	1911
58Q	350	W	Unspecified Ground Workings	1955
59Q	351	W	Unspecified Pit	1938
60Q	351	W	Unspecified Pit	1938
61	358	SW	Nursery	1923
62R	360	S	Cemetery Nursery	1934
63R	360	S	Cemetery Nursery	1916
64I	369	NE	Railway Buildings	1934
65AS	378	NW	Cuttings	1892
66R	396	S	Nursery	1955
67	404	S	Cemetery Nursery	1923
68R	410	S	Nursery	1938
69S	412	NE	Cuttings	1966
70S	412	NE	Cuttings	1955
71T	424	SW	Refuse Destructor	1905
72T	424	SW	Refuse Destructor	1923
73AT	427	S	Cemetery	1955
74T	429	SW	Refuse Destructor	1916
75T	429	SW	Refuse Destructor	1934
76T	429	SW	Corporation Destructor	1908
77T	431	SW	Refuse Destructor	1911

78T	431	SW	Refuse Destructor	1911
79Z	432	SW	Refuse Destructor	1938
80U	434	SW	Nursery	1911
81U	436	SW	Nursery	1938
82U	440	SW	Nursery	1955
83V	440	NE	Railway Building	1905
84V	440	NE	Railway Building	1892
85U	442	SW	Nursery	1934
86U	442	SW	Nursery	1916
87U	444	SW	Nursery	1892
88V	444	NE	Railway Station	1938
89U	444	SW	Nursery	1938
90V	446	NE	Railway Building	1934
91V	446	NE	Railway Building	1916
92W	447	NE	Railway Station	1966
93AD	449	NE	Unspecified Pit	1955
94W	450	NE	Railway Station	1923
95V	451	NE	Railway Building	1978
96X	468	SW	Cemetery	1955
97X	468	SW	Cemetery	1988
98X	468	SW	Cemetery	1966
99X	468	SW	Cemetery	1978
100X	469	S	Cemetery	1908
101Y	471	S	Cemetery	1911
102X	472	S	Cemetery	1938
103Y	473	SW	Cemetery	1892
104AU	474	NW	Cuttings	1892
105T	475	SW	Refuse Heap	1911
106T	475	SW	Refuse Heap	1911
107T	476	SW	Refuse Heap	1938
108AV	477	SW	Cemetery	1934
109X	478	S	Cemetery	1916
110T	479	SW	Sand Pit	1905
111U	480	SW	Nursery	1908
112Z	481	SW	Unspecified Ground Workings	1923
113X	481	SW	Cemetery	1923
114X	481	SW	Cemetery	1905
115	481	NE	Railway Station	1955
116X	482	SW	Cemetery	1938
117AA	482	SW	Refuse Heap	1911
118AA	482	SW	Refuse Heap	1911
119AB	483	NW	Cuttings	1934
120AB	486	NW	Cuttings	1938
121AC	491	SW	Nursery	1923
122AC	491	SW	Nursery	1905

123AB	494	NW	Cuttings	1955
124AD	500	NE	Railway Station	1892

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 2

ID	Distance (m)	Direction	Use	Date
125AE	171	NE	Unspecified Tank	1994
126AE	171	NE	Unspecified Tank	1993

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 31

ID	Distance (m)	Direction	Use	Date
127A	15	SW	Electricity Substation	1992
128A	15	SW	Electricity Substation	1992
129A	38	SW	Electricity Substation	1978
130A	38	SW	Electricity Substation	1986
131A	38	SW	Electricity Substation	1972
132AF	166	S	Electricity Substation	1992
133AF	166	S	Electricity Substation	1992
134AF	167	S	Electricity Substation	1981
135AF	167	S	Electricity Substation	1983
136AG	293	NW	Electricity Substation	1992
137AG	293	NW	Electricity Transformer	1971
138AH	338	SW	Electricity Substation	1972
139AH	338	SW	Electricity Substation	1986
140AH	338	SW	Electricity Substation	1992
141AH	338	SW	Electricity Substation	1992
142AH	346	SW	Electricity Substation	1978
143AI	438	SW	Electricity Substation	1992
144AI	438	SW	Electricity Substation	1992
145AI	438	SW	Electricity Substation	1972
146AI	438	SW	Electricity Substation	1986

147AI	438	SW	Electricity Substation	1978
148AJ	458	NE	Electricity Substation	1983
149AJ	458	NE	Electricity Substation	1982
150AJ	460	NE	Electricity Substation	1994
151AJ	460	NE	Electricity Substation	1993
152AJ	460	NE	Electricity Substation	1950
153AJ	461	NE	Electricity Substation	1950
154AK	499	NW	Electricity Substation	1954
155AK	499	NW	Electricity Substation	1992
156AK	500	NW	Electricity Substation	1995
157AK	500	NW	Electricity Substation	1992

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 7

ID	Distance (m)	Direction	Use	Date
158AL	411	NE	Garage	1983
159AL	411	NE	Garage	1982
160AL	413	NE	Garage	1993
161AL	413	NE	Garage	1994
162AM	425	W	Garage	1992
163AM	428	W	Garage	1992
164AM	428	W	Garage	1995

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 67

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date

165AN	0	On Site	Cuttings	1966
166AO	33	NE	Unspecified Pit	1934
167AO	34	NE	Pond	1938
168B	80	W	Unspecified Pit	1938
169B	80	W	Unspecified Pit	1955
170AE	81	NE	Unspecified Ground Workings	1955
171AP	89	N	Cuttings	1892
172AQ	97	N	Cuttings	1892
173E	136	SE	Cuttings	1966
174D	142	N	Unspecified Heap	1934
175D	144	N	Unspecified Ground Workings	1938
176D	144	N	Unspecified Ground Workings	1938
177E	148	SE	Cuttings	1892
178	195	SE	Pond	1851
179F	213	NW	Cuttings	1938
180N	215	NW	Cuttings	1955
181L	216	NW	Cuttings	1934
182L	249	NW	Unspecified Shafts	1923
183L	253	NW	Unspecified Shafts	1916
184N	297	NW	Unspecified Shafts	1923
185N	301	NW	Unspecified Shafts	1916
186AR	334	NE	Unspecified Pit	1905
187Q	349	W	Unspecified Pit	1934
188Q	350	W	Unspecified Ground Workings	1955
189Q	351	W	Unspecified Pit	1938
190Q	351	W	Unspecified Pit	1938
191	352	SW	Pond	1851
192R	360	S	Cemetery Nursery	1916
193R	360	S	Cemetery Nursery	1934
194	368	N	Pond	1923
195AS	378	NW	Cuttings	1892
196R	404	S	Cemetery Nursery	1923
197S	412	NE	Cuttings	1955
198S	412	NE	Cuttings	1966
199Z	424	SW	Refuse Destructor	1923
200Z	424	SW	Refuse Destructor	1905
201AT	427	S	Cemetery	1955
202Z	429	SW	Refuse Destructor	1916
203Z	429	SW	Refuse Destructor	1934
204Z	431	SW	Refuse Destructor	1911
205Z	431	SW	Refuse Destructor	1911
206Z	432	SW	Refuse Destructor	1938
207AD	449	NE	Unspecified Pit	1955

208X	468	SW	Cemetery	1955
209X	468	SW	Cemetery	1978
210X	468	SW	Cemetery	1988
211X	468	SW	Cemetery	1966
212X	469	S	Cemetery	1908
213Y	471	S	Cemetery	1911
214X	472	S	Cemetery	1938
215Y	473	SW	Cemetery	1892
216AU	474	NW	Cuttings	1892
217T	475	SW	Refuse Heap	1911
218T	475	SW	Refuse Heap	1911
219T	476	SW	Refuse Heap	1938
220AV	477	SW	Cemetery	1934
221X	478	S	Cemetery	1916
222T	479	SW	Sand Pit	1905
223Z	481	SW	Unspecified Ground Workings	1923
224X	481	SW	Cemetery	1905
225X	481	SW	Cemetery	1923
226X	482	SW	Cemetery	1938
227AA	482	SW	Refuse Heap	1911
228AA	482	SW	Refuse Heap	1911
229AB	483	NW	Cuttings	1934
230AB	486	NW	Cuttings	1938
231AB	494	NW	Cuttings	1955

2. Environmental Permits, Incidents and Registers Map



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

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.1.3 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.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Details	
9	439	NE	383423 393695	Address: Mauldeth Road West Service Station, Mauldeth Road West, Chorlton, M21 7RF Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

8

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

ID	Distance (m)	Direction	NGR	Details	
1A	30	NE	383020 393530	Address: CSO OPPOSITE 426 MAULDETH RD WEST, CHORLTON CUM HARDY, MANCHESTER, M21 7RA Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016993515 Permit Version: 1	Receiving Water: CHORLTON BROOK Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 25/06/2004 Effective Date: 25-Jun-2004 Revocation Date: 15/03/2009
2A	30	NE	383020 393530	Address: CSO OPPOSITE 426 MAULDETH RD WEST, CHORLTON CUM HARDY, MANCHESTER, M21 7RA Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016993515 Permit Version: 2	Receiving Water: CHORLTON BROOK Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 16/03/2009 Effective Date: 16-Mar-2009 Revocation Date: -
3	41	NE	383040 393530	Address: MAULDETH ROAD WEST, MAULDETH ROAD, CHORLTON-CUM-HARDY, MANCHESTER, M21 7TF Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0229 Permit Version: 1	Receiving Water: CHORLTON BROOK Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01-Jan-1995 Revocation Date: 24/06/2004

ID	Distance (m)	Direction	NGR	Details	
4	210	N	382950 393720	Address: WITHINGTON ROAD, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0380 Permit Version: 1	Receiving Water: - Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01-Jan-1995 Revocation Date: -
5B	389	NE	383400 393630	Address: MAULDETH ROAD WEST, MAULDETH ROAD, CHORLTON-CUM-HARDY, MANCHESTER, M21 7TF Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0230 Permit Version: 1	Receiving Water: CHORLTON BROOK Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01-Jan-1995 Revocation Date: 16/05/2004
6B	397	NE	383400 393650	Address: MAULDETH ROAD WEST, MAULDETH ROAD, CHORLTON-CUM-HARDY, MANCHESTER, M21 7TF Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0230 Permit Version: 2	Receiving Water: CHORLTON BROOK Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 17-May-2004 Revocation Date: -
7C	440	W	382340 393340	Address: ST WERBURGHS ROAD, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0232 Permit Version: 1	Receiving Water: CHORLTON BROOK Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01-Jan-1995 Revocation Date: 02/09/2010
8C	440	W	382340 393340	Address: ST WERBURGHS ROAD, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0232 Permit Version: 2	Receiving Water: CHORLTON BROOK Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03-Sep-2010 Revocation Date: -

2.1.9 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.

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

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

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

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.

3. Landfill and Other Waste Sites Map



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Site Outline

250
500
Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

3

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	
13A	431	SW	382600 392900	Site Address: Nell Lane, Manchester Waste Licence: - Site Reference: F042 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1355	SW	381200 392700	Site Address: Hardy Farm, Manchester Waste Licence: Yes Site Reference: F012 Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 01-Jan-1974 Licence Surrendered: Licence Holder Address: - Operator: Manchester Corporation Cleansing Department Licence Holder: - First Recorded: 31-Dec-1967 Last Recorded: 01-Feb-1974
Not shown	1476	W	380800 393400	Site Address: Ivy Green, Ivy Green Road, Stretford, Manchester Waste Licence: Yes Site Reference: F013 Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 01-Jan-1976 Licence Surrendered: Licence Holder Address: - Operator: Manchester Corporation Cleansing Department Licence Holder: Manchester City Council First Recorded: 08-Jan-1963 Last Recorded: 31-Dec-1970

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

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

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

12

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		
1	421	SW	382625 392922	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1955	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
2A	424	SW	382621 392919	Type of Site: Corporation Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1910	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
3A	424	SW	382615 392936	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1905	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
4A	424	SW	382615 392936	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1923	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
5A	426	SW	382615 392933	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1907	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
6A	426	SW	382615 392933	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1933	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
7A	426	SW	382615 392933	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1922	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

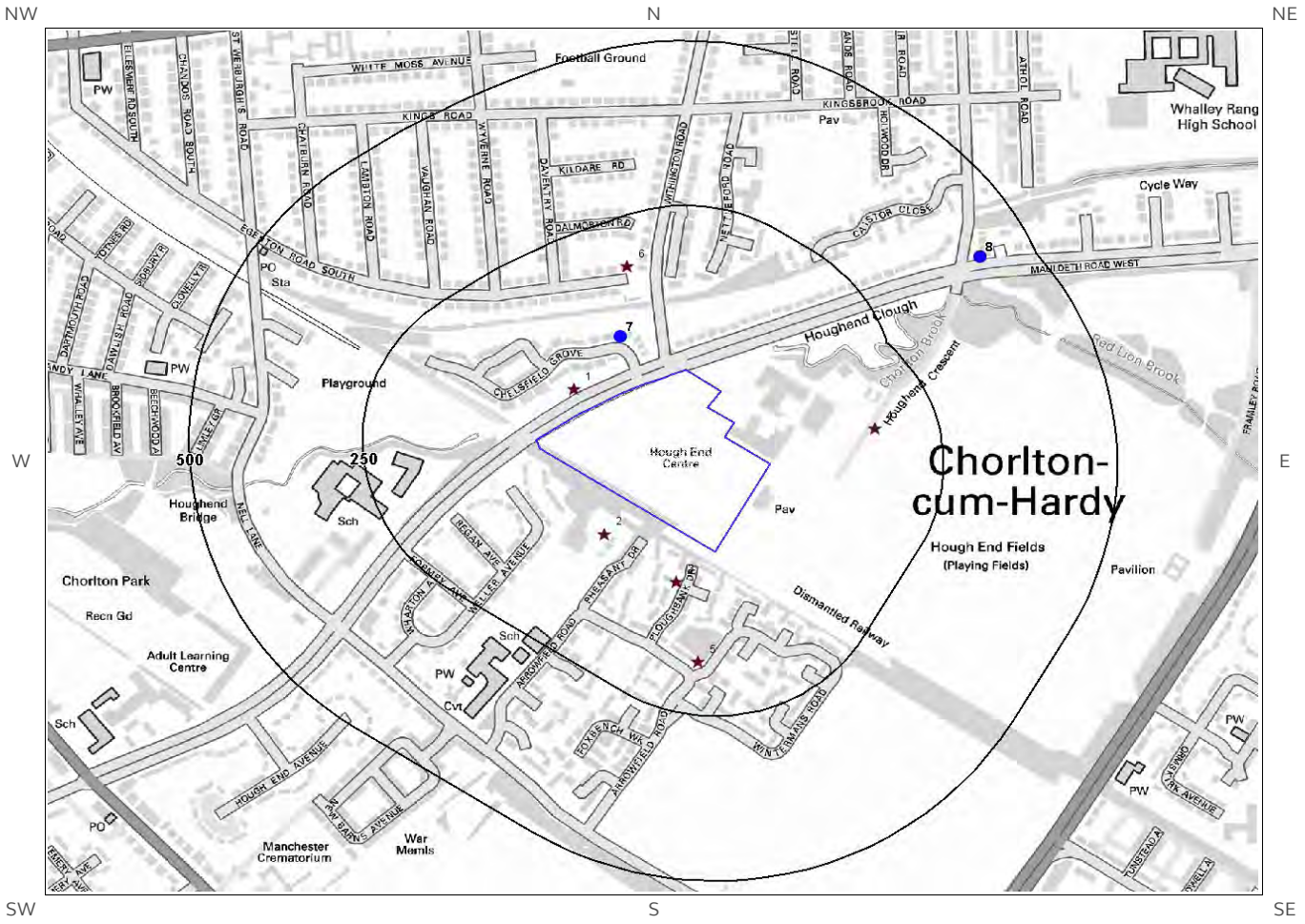
ID	Distance (m)	Direction	NGR	Details		
8A	429	SW	382621 392932	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1934	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
9A	429	SW	382621 392932	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1916	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
10A	431	SW	382622 392906	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1908	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
11A	431	SW	382622 392906	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1908	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
12A	432	SW	382664 392921	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1938	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

0

Database searched and no data found.

4. Current Land Use Map



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Site Outline

Search Buffers (m)

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 6

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	37	NW	Electricity Sub Station	382828 393485	M21	Electrical Features	Infrastructure and Facilities
2	61	SW	Electricity Sub Station	382872 393265	M21	Electrical Features	Infrastructure and Facilities
3	68	SW	K Direct Motors Ltd	382976 393193	1, Ploughbank Drive, Manchester, M21 7UB	Secondhand Vehicles	Motoring
4	160	E	Electricity Sub Station	383261 393426	M21	Electrical Features	Infrastructure and Facilities
5	169	S	Electricity Sub Station	383007 393071	M21	Electrical Features	Infrastructure and Facilities
6	178	N	C M C Machinery	382904 393672	2, Egerton Road South, Manchester, M21 0YP	Packaging	Industrial Products

4.2 Petrol and Fuel Sites

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

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

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
7	81	NW	382895 393565	Obsolete	Brookside Motors, 24A, Egerton Road South, Egerton Road South, Manchester, Greater Manchester, M21 0YN	Not Applicable	Obsolete
8	424	NE	383412 393686	Texaco	Mauldeth Road Service Station, 312, Mauldeth Road West, Mauldeth Road West, Alexandra Road South, Chorlton-Cum-Hardy, Manchester, Greater Manchester, M21 7RF	No	Open

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

---

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
GFSDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL

5.3 Bedrock and Solid Geology

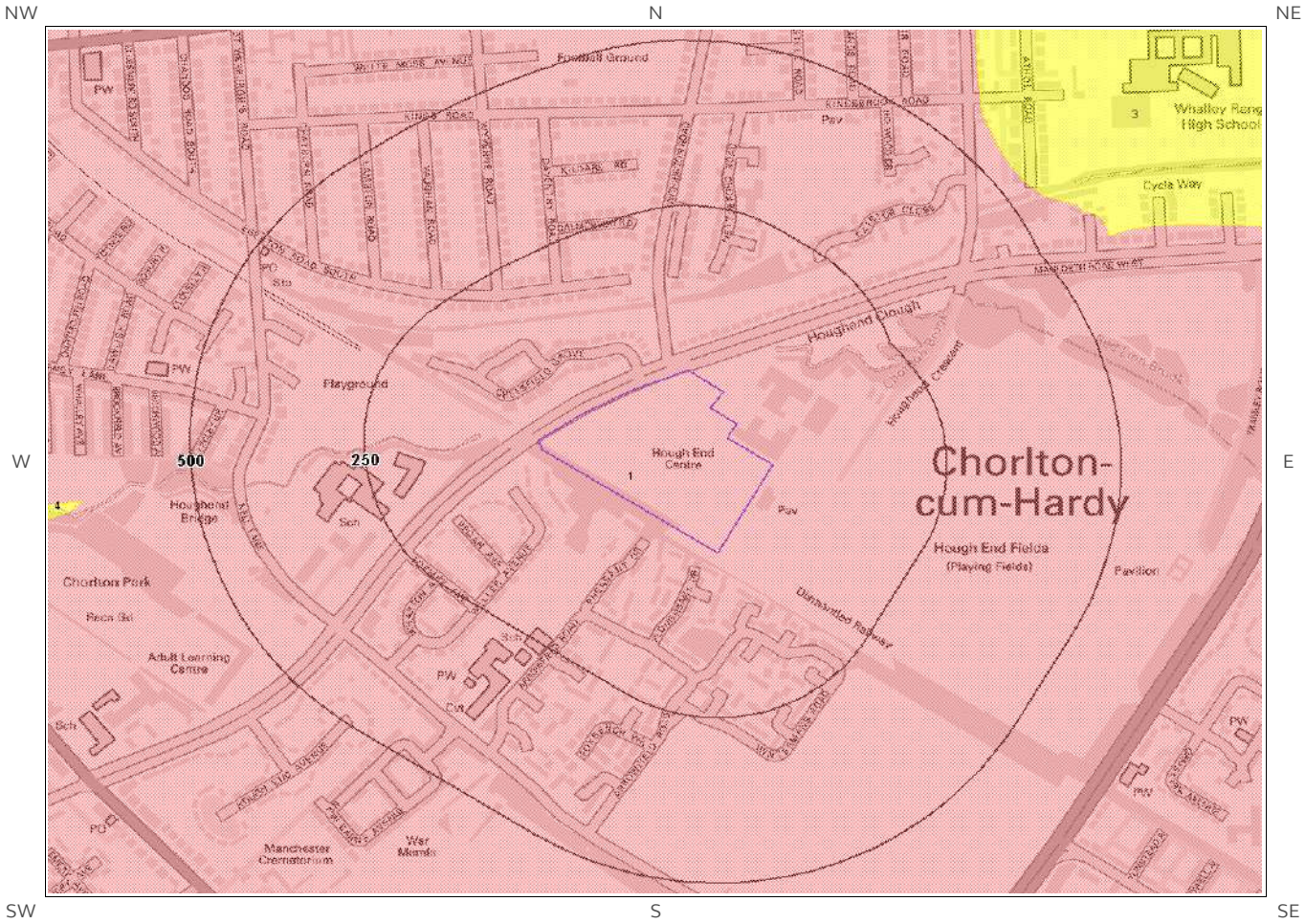
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
WLSF-SDST	WILMSLOW SANDSTONE FORMATION	SANDSTONE

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

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



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Site Outline

250 — 500 — Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

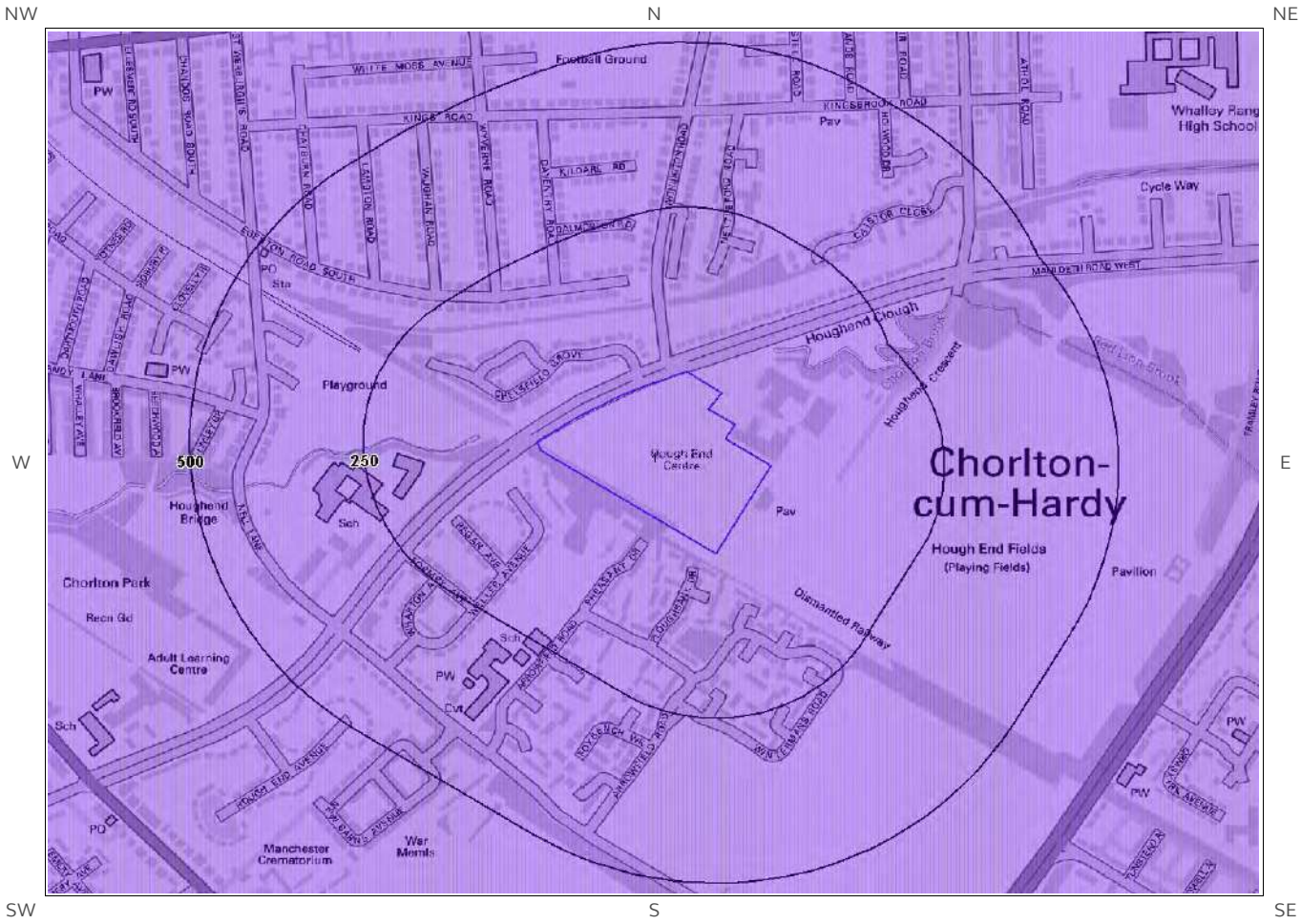
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licenses



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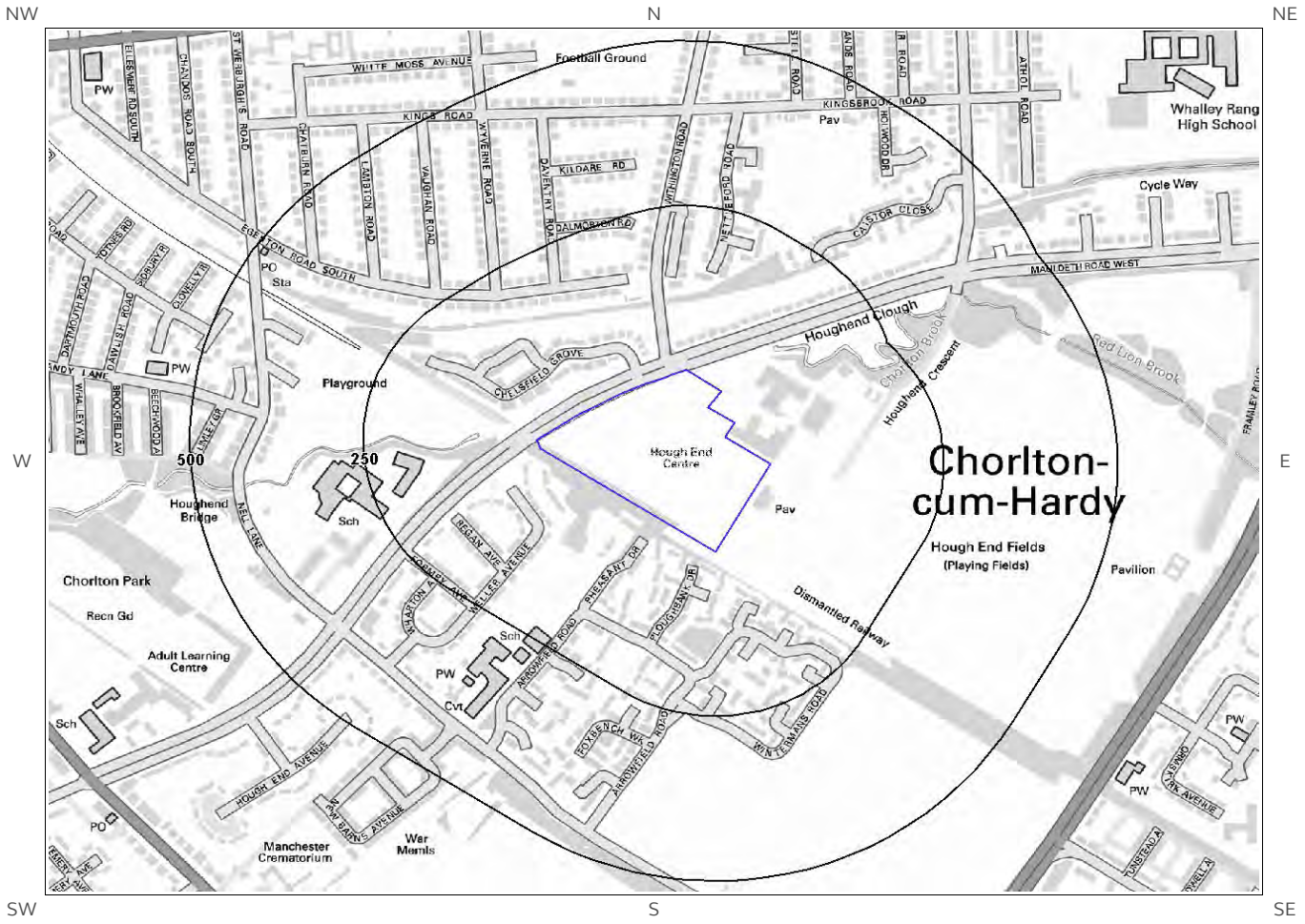
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



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Site Outline

250 — 500 — Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

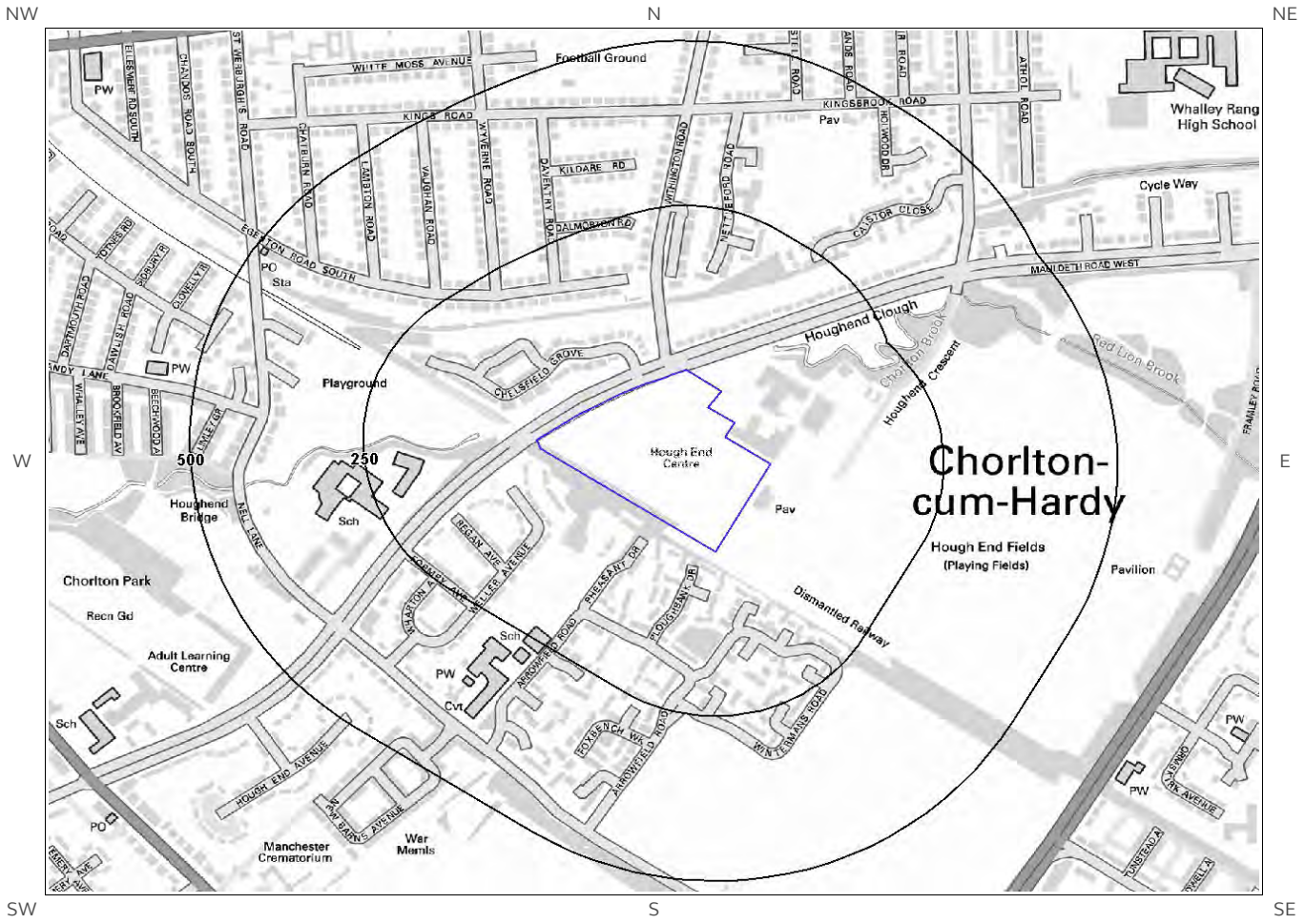
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



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Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

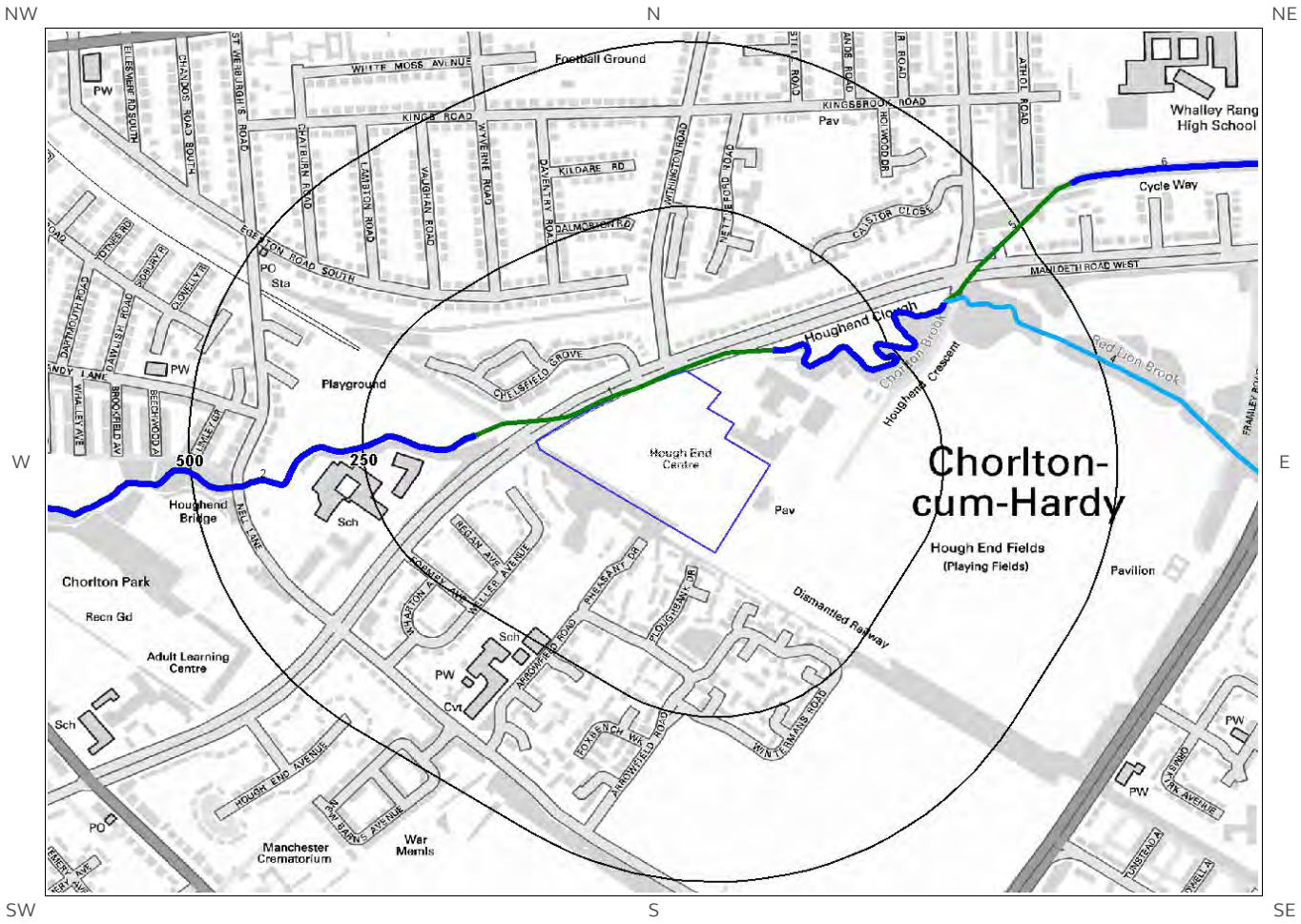
Source Protection Zone 3C - Total Catchment within Confined Aquifer

Site Outline

250 500 Search Buffers (m)

Potable Water Abstraction Licence

6e. Hydrology – Detailed River Network and River Quality



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Site Outline

250 Search Buffers (m)
500

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

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

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales'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 Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	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

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales'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 Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site — Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1390	SW	382230 392100	Status: Active Licence No: 2569015015 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: Borehole At Chorlton-cum-hardy Golf Club Data Type: Point Name: CHORLTON CUM HARDY GOLF CO LTD	Annual Volume (m^3): 8500 Max Daily Volume (m^3): 70 Original Application No: 7427 Original Start Date: 4/9/1998 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2008 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site — None identified

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site — None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site — None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site None identified

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.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Major 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.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site Identified

6.9.1 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 (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	1095	NE	384100 393840	River Name: Cringle Bk Reach: Qsl At Heaton Chapel To Platt Bk. End/Start of Stretch: End of Stretch NGR	E	E	D	D	D
Not shown	1095	NE	384100 393840	River Name: Chorlton Bk Reach: Qsl At Tan Yard Brow To Cringle Bk. End/Start of Stretch: End of Stretch NGR	E	E	E	E	E
Not shown	1095	NE	384100 393840	River Name: Chorlton Bk Reach: Cringle Bk. To Mersey End/Start of Stretch: Start of Stretch NGR	D	D	D	D	D

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Detailed River Network

Detailed River Network entries within 500m of the study site Identified

The following Detailed River Network records are represented on the Hydrology Map (6e):

ID	Distance (m)	Direction	Details	
1	0	NW	River Name: Chorlton Brook Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
2	88	W	River Name: Chorlton Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
3	98	NE	River Name: Chorlton Brook Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
4	349	NE	River Name: Red Lion Brook Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
5	349	NE	River Name: Platt Brook Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined

6.11 Surface Water Features

Surface water features within 250m of the study site | Identified

The following surface water records are not represented on mapping:

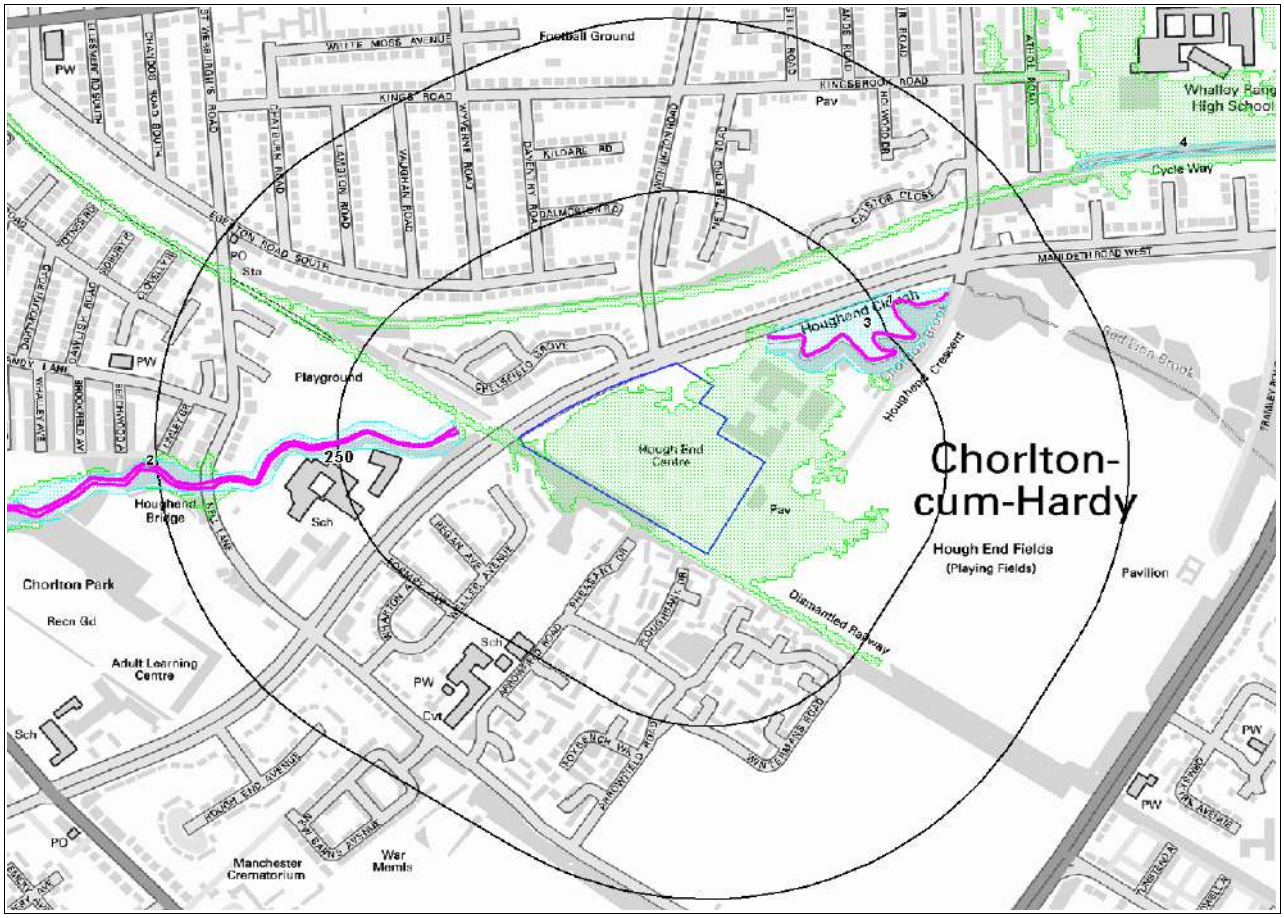
Distance (m)	Direction
97	NE
155	W

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)

NW N NE

W E

SW S SE



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Site Outline

100 / 250 Search Buffers (m)

Zone 2 Floodplain

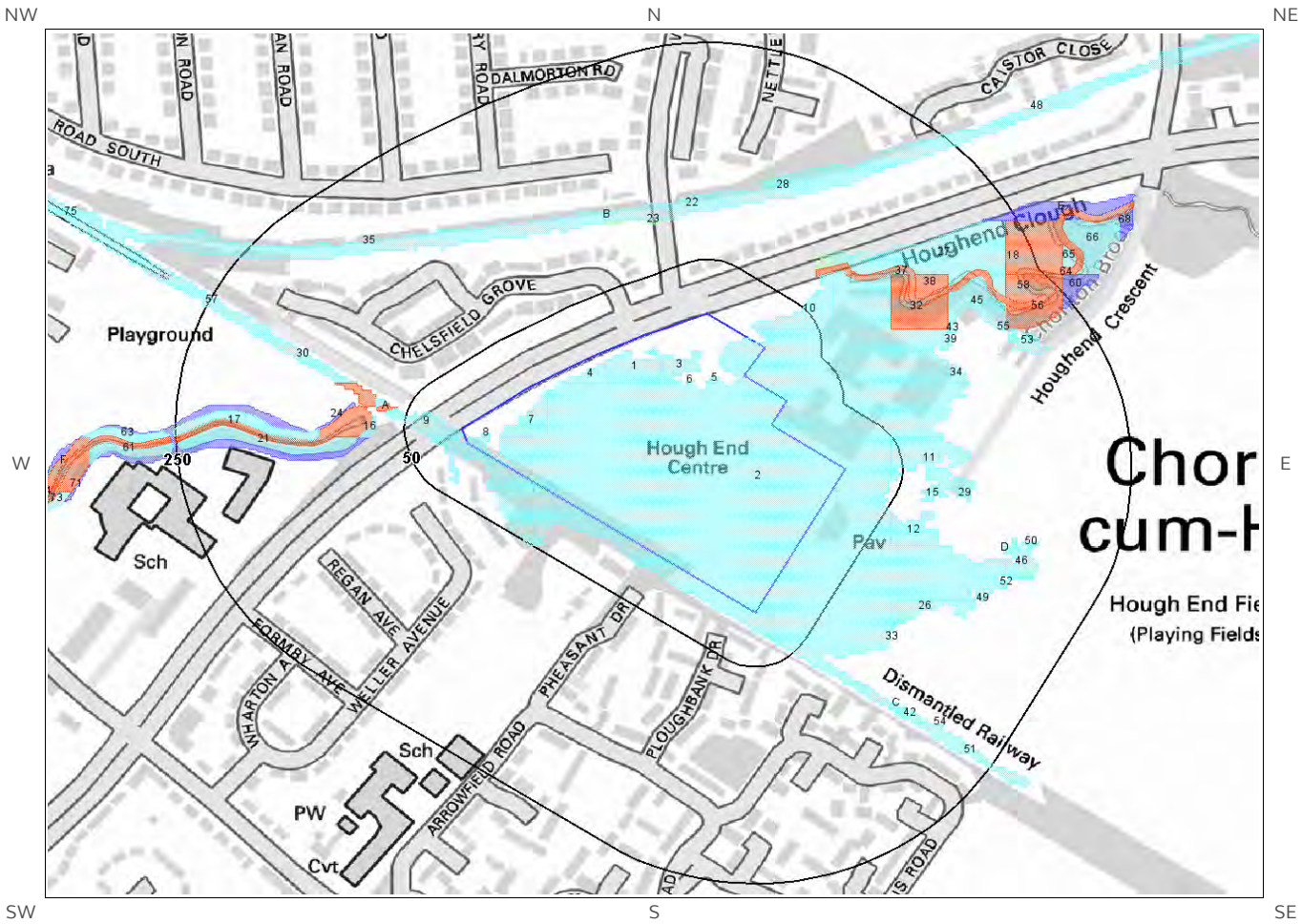
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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Site Outline

100 / 250 Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m — Identified

Environment Agency/Natural Resources Wales 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 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	0	On Site	24-Nov-2017	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m — Identified

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 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1	80	W	24-Nov-2017	Zone 3 - (Fluvial Models)
	86	NE	24-Nov-2017	Zone 3 - (Fluvial Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite — Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Low (greater than 1 in 1000 but less than 1 in 100) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRas flood Risk

1	0.0	On Site	Low
2	0.0	On Site	Low
3	0.0	On Site	Low
4	0.0	On Site	Low
5	0.0	On Site	Low
6	0.0	On Site	Low
7	0.0	On Site	Low
8	0.0	On Site	Low
9	1.0	W	Low
10	10.0	NE	Low
11	39.0	E	Low

7.4 Flood Defences

Flood Defences within 250m of the study site — Identified

The following flood defence records are represented as lines on the Flood Map:

ID	Distance (m)	Direction	Update
5	85	W	29-Nov-2017
6	87	W	29-Nov-2017
7	101	NE	29-Nov-2017

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site — None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site — None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site

Identified

Clearwater Flooding or Superficial Deposits Flooding — Clearwater 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).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Limited potential

Where limited potential for groundwater flooding to occur is indicated, this means that although given the geological conditions there may be a groundwater flooding hazard, unless other relevant information, e.g. records of previous flooding, suggests groundwater flooding has occurred before in this area, you need take no further action in relation to groundwater flooding hazard.

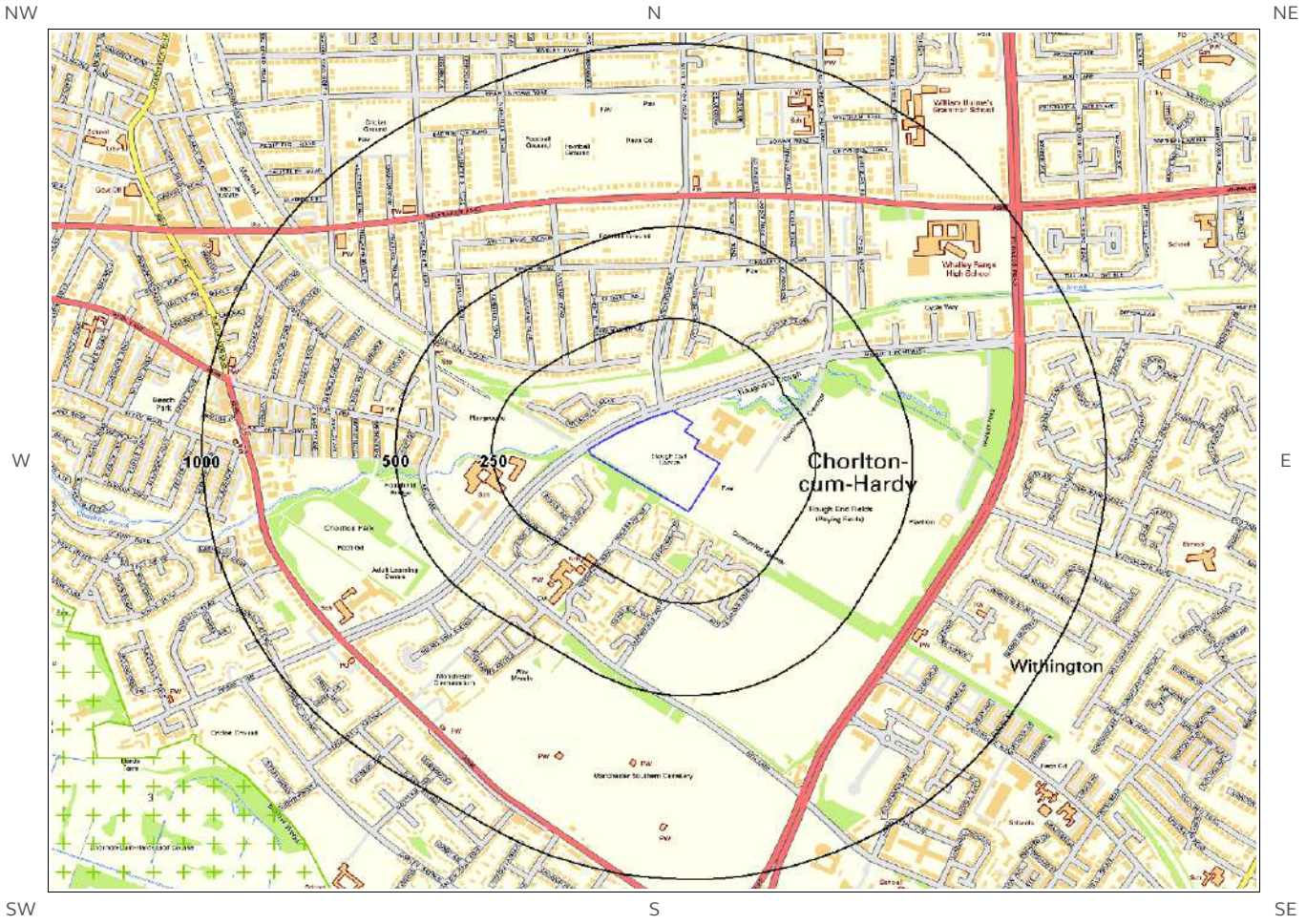
7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result Low

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.

8. Designated Environmentally Sensitive Sites Map



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Site Outline

100
250
Search Buffers (m)

AONB

National Park

SSSI

Special Protection Areas

Nitrate Vulnerable Zones

Green Belt

Environmentally Sensitive Areas

Special Areas of Conservation

World Heritage Sites

Nitrate Sensitive Areas

Ancient Woodland

National Nature Reserve

Local Nature Reserves

Ramsar Sites

8. Designated Environmentally Sensitive Sites

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

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

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

0

Database searched and no data found.

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

2

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
Not shown	1393	SW	Chorlton Water Park	Natural England
Not shown	1450	W	Chorlton Ess & Ivy Green	Natural England

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

2

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name
3	1250	SW	Liverpool, Manchester and West Yorks Greenbelt	Manchester District (B)
Not shown	1815	SW	Liverpool, Manchester and West Yorks Greenbelt	Trafford District (B)

9. Natural Hazards Findings

9.1 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 Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

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.

9.1.2 Landslides

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.

9.1.3 Soluble Rocks

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.

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

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — Negligible

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

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

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site — Very Low

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

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

9.1.6 Running Sand

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.

9.2 Radon

9.2.1 Radon Affected Areas

Radon Affected Area assessment: The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Radon protection measures requirements for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment: No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site — None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary — None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site — None identified
Guidance: No Guidance Required.

Contact Details

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

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

Environment Agency
National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506
Web: **www.environment-agency.gov.uk**
Email: enquiries@environment-agency.gov.uk

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Public information access office
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133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

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Tel: 0345 7626 848
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www.coal.gov.uk

Ordnance Survey
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Tel: 08456 050505

Local Authority
Authority: Manchester City Council
Phone: 0161 234 5000
Web: http://www.manchester.gov.uk/
Address: Town Hall, Albert Square, Manchester, M60 2LA

Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
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Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England who retain the Copyright and Intellectual Property Rights for the data.
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Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:
https://www.groundsure.com/terms-and-conditions-march-2018

Groundsure
LOCATION INTELLIGENCE

Dunelm Geotechnical & Environmental Ltd

FOUNDATION HOUSE, ST. JOHNS ROAD, DURHAM/MEADOWFIELD INDUSTRIAL ESTATE, DH7 8TZ

Groundsure Reference:	GS-4798418
Client Reference:	PONW5446-M566-RB
Report Date	12 Mar 2018
Report Delivery Method:	xml
Client Email:	chuntington@dunelm.co.uk

Flood Insight

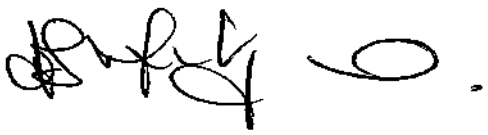
Address: HOUGH END CENTRE, MAULDETH ROAD WEST, MANCHESTER, M21 7SX

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Flood Insight** as requested.

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

Yours faithfully,



Managing Director
Groundsure Limited

Enc.
Groundsure Floodinsight

Flood Insight

Address:	**HOUGH END CENTRE, MAULDETH ROAD WEST, MANCHESTER, M21 7SX**
Date:	**12 Mar 2018**
Reference:	**GS-4798418**
Client:	**Dunelm Geotechnical & Environmental Ltd**

NW N NE



W E

SW S SE

Aerial Photograph Capture date:	11-Jun-2015
Grid Reference:	382975,393406
Site Size:	4.76ha

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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.

Section 1: Environment Agency/Natural Resources Wales Flood Zones	
1.1 Are there any Enviroment Agency Zone 2 floodplains within 250m of the study site?	Yes
1.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Yes
1.3 Are there any Flood Defences within 250m of the study site?	Yes
1.4 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
1.5 Are there any Proposed Flood Defences within 250m of the study site?	No
1.6 Are there any areas used for Flood Storage within 250m of the study site?	No

Section 2: Risk of Flooding from Rivers and the Sea (RoFRaS)	
2.1 What is the Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating for the study site?	Low

Section 3: Historic Flood Events	
3.1 Has the site been subject to past flooding as recorded by the Environment Agency/Natural Resources Wales?	No

Section 4: JBA Surface Water (Pluvial) Flood	
4.1 Is the site or any area within 50m at risk of Surface Water (Pluvial) Flooding?	Yes

Section 5: Surface Water Features	
5.1 Are there any surface water features within 250m of the study site?	Yes

Section 6: Groundwater Flooding	
6.1 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Limited potential
6.2 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Low

Section 7: BGS Geological Indicators of historic flooding	
7.1 Are there any geological indicators of historic flooding within 250m of the study site?	Yes

Section 8: JBA Reservoir and Canal Data	
8.1 Is the property located in an area identified as being at potential risk in the event of a reservoir failure?	No
8.2 Is the property located in an area identified as being at potential risk in the event of a canal break?	No

Additional Matters

Riparian ownership

If your land abuts a river, stream or ditch, you may have responsibility to maintain this watercourse, even if Title Deeds show the property boundary to be adjacent to the watercourse. This includes the responsibility for clearing debris and obstructions which may impede the free passage of water and fish, and also includes the responsibilities to accept flood flows through your land, even if these are caused by inadequate capacity downstream. There is no duty in common law for a landowner to improve the drainage capacity of a watercourse. Please contact Groundsure if you need further advice on riparian ownership issues relating to this property.

Sewerage Flooding

Extreme rainfall events may overwhelm sewerage systems and cause local flooding. The water and sewerage companies within the UK are required to maintain 'DG5 – At Risk Registers' which record properties that have flooded from sewers and/or are considered to be at risk of flooding from sewers in the future. If your property is on the 'At Risk' Register, this may be recorded within a standard CON29 Drainage and Water search.

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.

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).

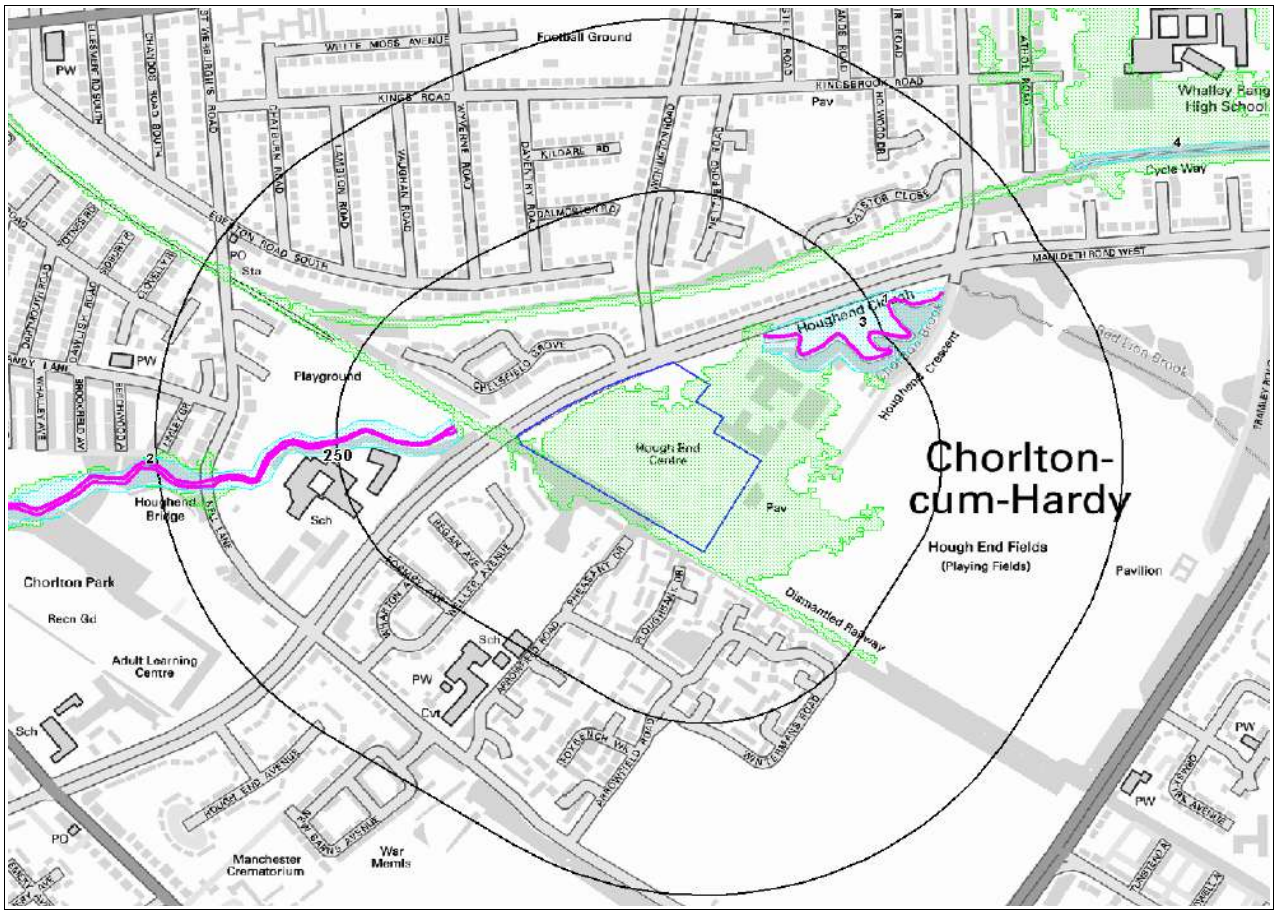
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

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. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)

NW N NE



W E

SW S SE

Environment Agency/Natural Resources Wales Flood Map for Planning Legend

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- Search Centre
- Search Buffers (m) — 1M, 250
- Zone 2 Floodplain
- Zone 3 Floodplain
- Flood Defences
- Area used for Flood Storage
- Proposed Flood Defence Scheme
- Area Benefiting from Flood Defences

Report Reference: GS-4798418
Client Reference: PONW5446-M566-RB

1. Environment Agency/Natural Resources Wales Flood Zones

1.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? Yes

Environment Agency/Natural Resources Wales 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 – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	0.0	On Site	24-Nov-2017	Zone 2 - (Fluvial /Tidal Models)

1.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? Yes

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 – Flood Map for Planning.

The following floodplain records are represented as green shading on the Flood Map (1):

ID	Distance (m)	Direction	Update	Type
2	80.0	W	24-Nov-2017	Zone 3 - (Fluvial Models)
3	86.0	NE	24-Nov-2017	Zone 3 - (Fluvial Models)

1.3 River and Coastal Flood Defences

Are there any Flood Defences within 250m of the study site ? Yes

This search consists only of flood defences present in the dataset provided by the Environment Agency/Natural Resources Wales. Any relevant data is represented on Map 1 – Flood Map for Planning.

The following flood defence records are represented as lines on the Flood Map (1):

ID	Distance (m)	Direction	Update
5	85.0	W	29-Nov-2017
6	87.0	W	29-Nov-2017
7	101.0	NE	29-Nov-2017

1.4 Areas benefiting from Flood Defences

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

Any relevant data is represented on Map 1 – Flood Map for Planning.

1.5 Areas of Proposed Flood Defences

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

* This illustrates the number of households that move from 'very significant' or 'significant' to 'moderate' or 'low' probability of flood risk bands if the proposed flood scheme is to be implemented.

Any relevant data is represented on Map 1 – Flood Map for Planning.

Guidance: This search consists only of proposed flood defences present in the dataset provided by the Environment Agency/Natural Resources Wales. Please note that proposed flood defence schemes will not influence the current RoFRaS ratings for the site.

1.6 Areas used for Flood Storage

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

Flood Storage Areas are considered part of the functional floodplain, and are areas where water has to flow or be stored in times of flood. Technical Guidance to the National Planning Policy Framework states that only water-compatible development and essential infrastructure should be permitted within flood storage areas, and existing development within this area should be relocated to an area with a lower risk of flooding. Any relevant data is represented on Map 1 – Flood Map for Planning.

Notes on Flood Zone Data:

This data relates solely to flooding from rivers or the sea. The Environment Agency/Natural Resources Wales estimate that over 2.5 million properties are at risk of flooding within England and Wales. River flooding occurs when a watercourse cannot cope with the water draining into it from the surrounding land. This can happen, for example, when heavy rain falls on an already waterlogged catchment. Coastal flooding results from a combination of high tides and stormy conditions. If low atmospheric pressure coincides with a high tide, a tidal surge may happen which can cause serious flooding.

The Groundsure Flood Insight Report comments upon whether a property lies in proximity to Environment Agency/Natural Resources Wales Zone 2 and Zone 3 floodplains. The Government's Technical Guidance to the National Planning Policy Framework explains how flood risk should be considered at all stages of the planning and development process in order to reduce future damage to property and potential loss of life. The Government looks to planning authorities to ensure that flood risk is properly taken into account in the planning of developments to reduce the risk of flooding and the damage which floods cause.

Flood Zones enable planning authorities to apply the sequential test (see Technical Guidance to the National Planning Policy Framework) for development proposals and prevent inappropriate development.

Technical Guidance to the National Planning Policy Framework defines the flood zones as: -

Zone 1 – little or no risk with an annual probability of flooding from rivers and the sea of less than 0.1%

Zone 2 – low to medium risk with an annual probability of flooding of 0.1-1.0% from rivers and 0.1-0.5% from the sea.

Zone 3 – high risk with an annual probability of flooding of 1.0% or greater from rivers, and 0.5% or greater from the sea.

Flood Zone 3b/Flood Storage Areas - very high risk with the site being used as part of the functional flood plain or as a Flood Storage Area.

The flood zones are the main constraint map underpinning decisions on development and flood risk.

Existing Flood Defences

Flood defences seek to reduce the risk of flooding and to safeguard life, protect property, sustain economic activity and the natural environment. Flood defences are designed to protect against flood events of a particular magnitude, expressed as risk in any one year. For example, defences in urban areas may be built to provide protection against flood events of a size which might occur on average once in one hundred years or less.

Proposed Flood Defences

This information is taken from the Environment Agency/Natural Resources Wales's database of Areas to Benefit from New and Reconditioned Flood Defences under the Medium Term Plan (MTP). The dataset contains funding allocation for the first financial year (from April). Funding for the following four financial years is not guaranteed, being only indicative, and will be reviewed annually. Projects within the Medium Term Plan qualify for inclusion in this dataset if:

- the investment leads to a change in the current standard of protection (change projects);
- the investment is a replacement or refurbishment in order to sustain the current standard of protection (sustain projects);
- the project has an initial construction budget of £100,000 or more; and
- the project is included within the first five years of the MTP

The data includes all the Environment Agency/Natural Resources Wales's projects over £100K that will change or sustain the standards of flood defence in England and Wales over the next 5 years. It also includes the equivalent schemes for all Local Authority and Internal Drainage Boards. The number of households and areas of land contributing to DEFRA's Outcome Measures (OM) are also attributed i.e. could benefit from major work on flood defences.

These data also contain Intermittence Flood Maintenance Programme that show the annual maintenance programme of work scheduled to be carried by the Environment Agency/Natural Resources Wales, Local Authority or Internal Drainage Board on flood defences. Data details routine maintenance as well as intermittent work that has been funded for the coming year. The data contains a start and end coordinate defining the relevant river section where work is planned.

Information Warning

Please note that the maps show the areas where investment is being made to reduce the flood and coastal erosion risk and are not detailed enough to account for individual addresses. Individual properties may not always face the same risk of flooding as the areas that surround them. Also, note that funding figures are indicative and any use or interpretation should account for future updates where annual values may change.

Every possible care is taken to ensure that the maps reflect all the data possessed by the Environment Agency/Natural Resources Wales and that they have applied their expert knowledge to create conclusions that are as reliable as possible. The Environment Agency/Natural Resources Wales consider that they have created the maps as well as they can and so should not be liable if the maps by their nature are not as accurate as might be desired or are misused or misunderstood, despite their warnings. For this reason, they are not able to promise that the maps will always be accurate or completely up to date.

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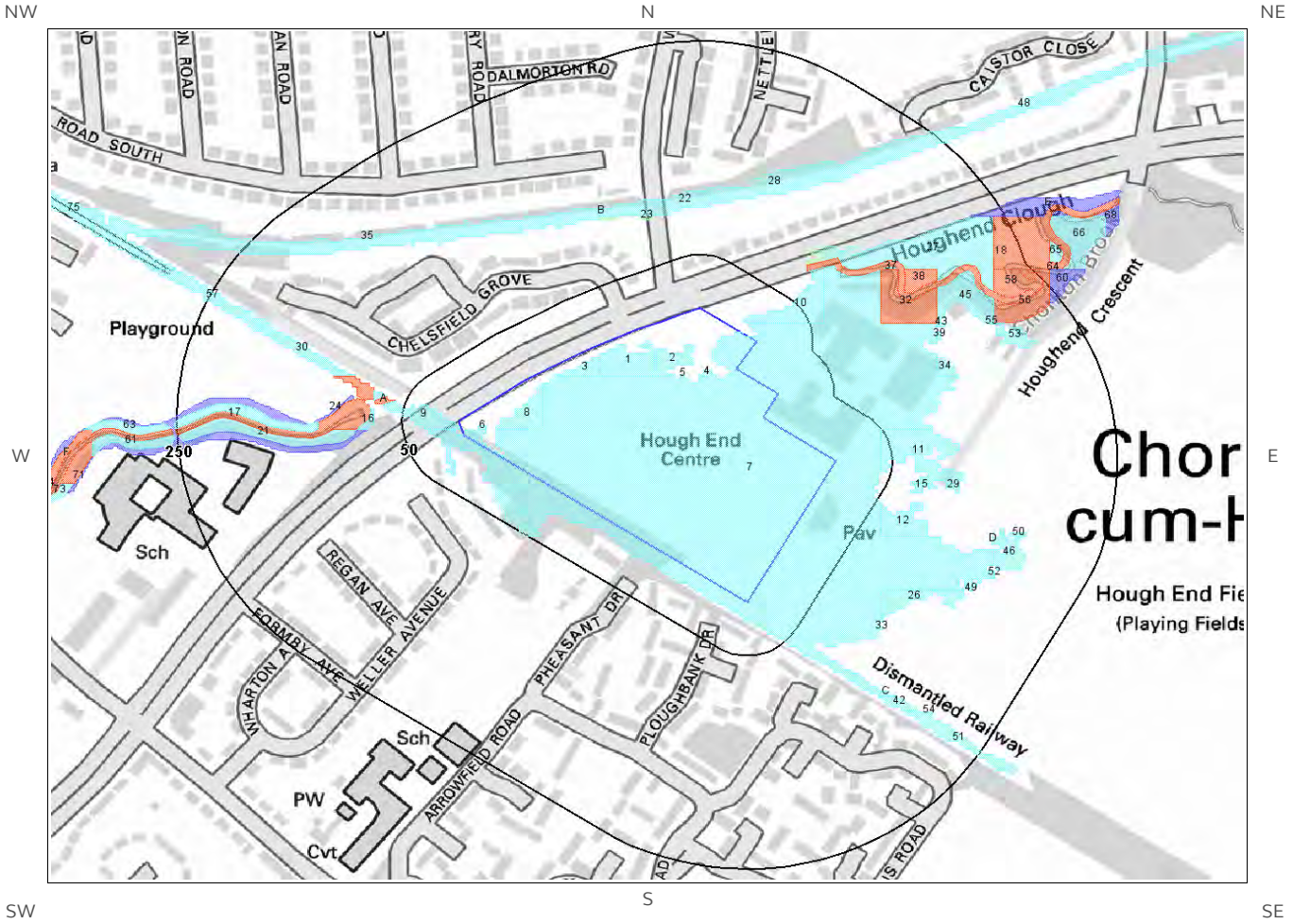
Flood Storage Areas

Flood Storage Areas may also act as flood defences. A flood storage area may also be referred to as a balancing reservoir, storage basin or balancing pond. Its purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer time interval.

A flood storage area may take the form of a wet or dry reservoir. A wet reservoir is a water storage facility in which storage can be effected by allowing water levels to rise during flood times. A dry reservoir is typically adjacent to a river and comprises an enclosed area that accepts water only at peak times. These areas are also referred to as Zone 3b or 'the functional floodplain' and has a 5% or greater chance of flooding in any given year, or is designed to flood in the event of an extreme (0.1%) flood or another probability which may be agreed between the Local Planning Authority and the Environment Agency/Natural Resources Wales, including water conveyance routes. Development within Flood Storage Areas is severely restricted.

2. Environment Agency/Natural Resources Wales RoFRaS Flooding Map



Environment Agency/Natural Resources Wales RoFRaS Flooding legend

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Site Outline

Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

2. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS)

2.1 Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating (River and Coastal)

What is the highest risk of flooding onsite? Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Low (greater than 1 in 1000 but less than 1 in 100) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRaS Flood Risk
1	0.0	On Site	Low
2	0.0	On Site	Low
3	0.0	On Site	Low
4	0.0	On Site	Low
5	0.0	On Site	Low
6	0.0	On Site	Low
7	0.0	On Site	Low
8	0.0	On Site	Low
9	1.0	W	Low
10	10.0	NE	Low
11	39.0	E	Low

Notes on RoFRaS data:

This information is based on the very latest Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) data. This data has been created by dividing the flood plain into 50m squares, or smaller areas where a square if intersected by a river or coastline. These are called impact cells. The method then calculates the likelihood that the centre of each impact cell will start to flood using a number of different flood scenarios.

A number of insurance companies providing cover for flood risk use this data as the basis of their risk model, although they may also utilise additional information such as claims histories, which may further influence their decision. Where a high risk of flooding is identified flood risk insurance may be difficult to obtain without further work being undertaken. Property owners of sites within Low and Medium risk areas are still considered to be at risk of flooding and insurance premiums may be increased as a result. Owners of properties within Low, Medium and High risk areas are advised to sign up to the Environment Agency/Natural Resources Wales's Flood Warning scheme. The probability estimates for RoFRaS risk bands are as follows:

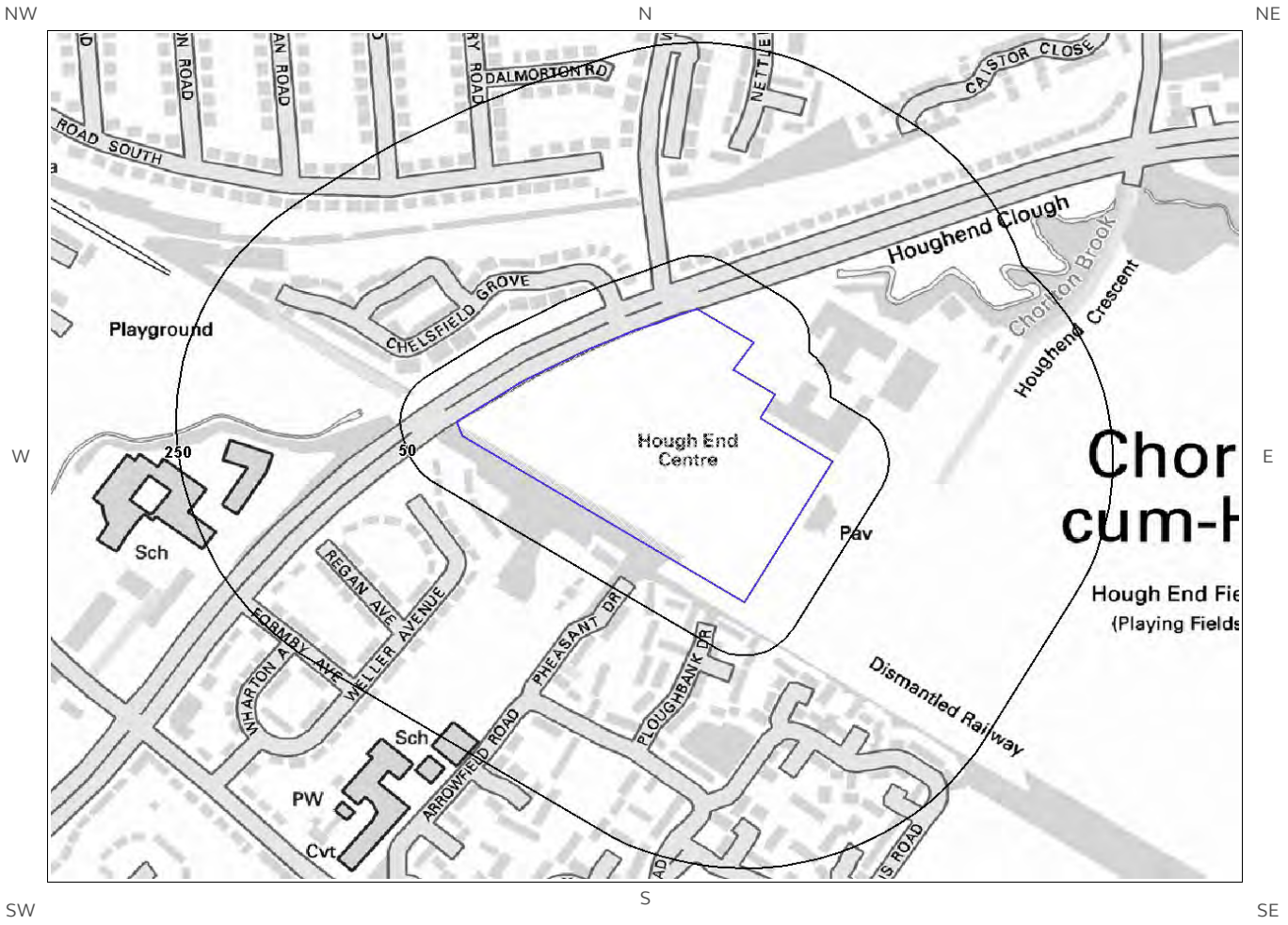
Very Low – the chance of flooding from rivers or the sea is considered to be less than 1 in 1000 (0.1%) in any given year.

Low – the chance of flooding from rivers or the sea is considered to be less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) in any given year.

Medium – the chance of flooding from rivers or the sea is considered to be less than 1 in 30 (3.3%) but greater than 1 in 100 (1%) in any given year.

High – the chance of flooding from rivers or the sea is considered to be greater than or equal to 1 in 30 (3.3%) in any given year.

3. Environment Agency/Natural Resources Wales Historic Flooding Events Map



Environment Agency/Natural Resources Wales Historic Flooding Events legend

Site Outline

125
250
Search Buffers (m)

Historic Flood Events

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3. Environment Agency/Natural Resources Wales Historic Flooding Events

3.1 Historic Flood Outlines

Has the site or any area within 250m been subject to historic flooding as recorded by the Environment Agency/Natural Resources Wales? No

This database shows the individual footprint of every flood event recorded by the Environment Agency/Natural Resources Wales and previous bodies.

Any records found within the search radius are displayed on Map 3 – Historic Flooding Events.

Notes on Historic Flooding data:

Over 21,000 separate events are recorded within this database, dating back to 1947. This data is used to understand where flooding has occurred in the past and provides details as available. Absence of a historic flood event for an area does not mean that the area has never flooded, but only that the Environment Agency/Natural Resources Wales do not currently have records of flooding within the area. Equally, a record of a flood footprint in previous years does not mean that an area will flood again, and this information does not take account of flood management schemes and improved flood defences.

---

4. JBA Surface Water (Pluvial) Flood Map

NW N NE

W E

SW S SE



JBA Surface Water (Pluvial) Flood Legend

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4. JBA Surface Water (Pluvial) Flooding

Surface Water (pluvial) flooding is defined as flooding caused by rainfall-generated overland flow before the runoff enters a watercourse or sewer. In such events, sewerage and drainage systems and surface watercourses may be entirely overwhelmed.

Surface Water (pluvial) flooding will usually be a result of extreme rainfall events, though may also occur when lesser amounts of rain falls on land which has low permeability and/or is already saturated, frozen or developed. In such cases overland flow and 'ponding' in topographical depressions may occur.

What is the risk of pluvial flooding at the study site? Significant

Guidance: The site or an area in close proximity has been assessed to be at Significant Risk of surface water (pluvial) flooding. This indicates that this area would be expected to be affected by surface water flooding in a 1 in 75 year rainfall event to a depth of between 0.3m to 1m.

Flood data provided by JBA RISK MANAGEMENT LIMITED Copyright © JBA RISK MANAGEMENT LIMITED 2008-2018

The following pluvial (surface water) flood risk records within 50m of the study site are shown on the JBA Surface Water Flooding Map:

Distance	Direction	Risk
0.0	On Site	High
0.0	On Site	High
0.0	On Site	High
0.0	On Site	High
0.0	On Site	High
0.0	On Site	High
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low

Distance	Direction	Risk
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	On Site	Low
0.0	SW	Low
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate

Distance	Direction	Risk
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Low to Moderate
0.0	On Site	Moderate
0.0	SW	Moderate
0.0	On Site	Significant
1.0	SW	High
1.0	SW	High
1.0	SW	High
1.0	SE	Low
1.0	SW	Moderate
2.0	SW	High
2.0	SE	Low
2.0	SW	Moderate
3.0	SW	Low
3.0	NE	Low
3.0	SE	Low
4.0	SW	Low to Moderate
4.0	NE	Low to Moderate
4.0	SW	Low to Moderate
4.0	SW	Significant
4.0	SW	Significant
4.0	SW	Significant
5.0	SW	Low
5.0	SW	Low to Moderate
5.0	SW	Low to Moderate
5.0	SW	Significant
6.0	SW	Low
6.0	SW	Low to Moderate
6.0	SW	Low to Moderate
6.0	SW	Low to Moderate
7.0	SW	High
7.0	NE	Low
7.0	NE	Low
8.0	SE	Low
8.0	SW	Low

Distance	Direction	Risk
8.0	SW	Low to Moderate
8.0	SW	Low to Moderate
8.0	SW	Moderate
9.0	NE	Low
9.0	SE	Low
10.0	SW	High
10.0	E	Low
10.0	E	Low
11.0	NE	Low
16.0	SW	Low
16.0	NE	Low
18.0	SE	Low
19.0	SW	Low
19.0	NE	Low
20.0	E	Low
20.0	SE	Low
20.0	SW	Low
23.0	NE	Low
24.0	SE	Low
25.0	SW	Low
27.0	SE	Low
27.0	SE	Low to Moderate
27.0	NE	Low to Moderate
28.0	SE	Low
28.0	SW	Low
28.0	SE	Low
28.0	SW	Low to Moderate
29.0	S	Low
29.0	SW	Low to Moderate
29.0	SW	Moderate
30.0	E	Low
30.0	NE	Low
31.0	SW	Low
32.0	SW	High
32.0	W	Low
33.0	SW	Low
33.0	SE	Low
33.0	SW	Low to Moderate
34.0	SE	Low

Distance	Direction	Risk
34.0	SW	Significant
35.0	SW	Low
35.0	SE	Low
35.0	S	Low
35.0	SW	Low to Moderate
35.0	SW	Low to Moderate
36.0	NW	Low
37.0	SE	Low
37.0	SE	Low to Moderate
37.0	SW	Low to Moderate
38.0	NW	High
38.0	SW	Low
38.0	NW	Low
38.0	NE	Low to Moderate
38.0	NW	Low to Moderate
38.0	SW	Low to Moderate
39.0	SE	Low
39.0	SE	Low
39.0	SW	Low
39.0	NE	Low to Moderate
41.0	SW	Low to Moderate
42.0	SW	Low
42.0	SE	Low to Moderate
42.0	SW	Low to Moderate
43.0	SE	Low to Moderate
44.0	SE	Low
44.0	SW	Low to Moderate
45.0	SW	High
45.0	SE	Low
45.0	SE	Low
45.0	NW	Low to Moderate
45.0	SW	Moderate
46.0	NE	Low
47.0	SE	Low
47.0	SW	Low
47.0	NW	Low to Moderate
49.0	SE	Low
49.0	SW	Low to Moderate
49.0	SW	Low to Moderate

Distance	Direction	Risk
50.0	SW	Low
50.0	SE	Low

Notes on Surface water (Pluvial) Flooding data:

JBA Consulting surface water flood map identifies areas likely to flood following extreme rainfall events, i.e. land naturally vulnerable to surface water or "pluvial" flooding. This data set was produced by simulating 1 in 75 year, 1 in 200 year and 1 in 1000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though older ones may even flood in a 1 in 5 year rainstorm event.

The model provides the maximum depth of flooding in each 5m "cell" of topographical mapping coverage. The maps include 7 bands indicating areas of increasing natural vulnerability to surface water flooding. These are:-

- **Less than 0.1m in a 1 in 1000 year rainfall event** - Negligible
- **Greater than 0.1m in a 1 in 1000 year rainfall event** - Low
- **Between 0.1m and 0.3m in a 1 in 200 year rainfall event** – Low to Moderate
- **Between 0.3m and 1m in a 1 in 200 year rainfall event –** Moderate
- **Greater than 1m in a 1 in 200 year rainfall event** – Moderate to High
- **Between 0.1m and 0.3m in a 1 in 75 year rainfall event** – High
- **Between 0.3m to 1m in a 1 in 75 year rainfall event** - Significant
- **Greater than 1m in a 1 in 75 year rainfall event** – Highly Significant