

001SUMMB110

PHASE 1 SITE INVESTIGATION

45, Harrop Street, Gorton

For

B & A Susca

May 2017

Project No 001SUMMB110

Prepared by

Wesson Environmental

Telephone 0117 369 0156

PLANNING AND
BUILDING CONTROL
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PHASE 1 SITE INVESTIGATION

45, Harrop Street, Gorton

For

B & A Susca

The material and data in this report were prepared under the supervision and direction of the undersigned

Wesson Environmental

**Prepared by: Dr. Richard Wesson
Environmental Consultant**

Date

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1 0 Introduction

1 1 General

Wesson Environmental were commissioned to carry out a Phase 1 Site Investigation of the site located at 45, Harrop Street, Gorton

The report uses documentary data (refs 1, 2, 3)

The purpose of this report is to assess the potential risks to human, controlled water receptors and to the wider environment arising from past and present land use, and naturally occurring features present at or near the site

1 2 Scope of report

This report aims to identify and address the following issues related to the use of the site for residential development

- 1 The potential presence of any contaminants
- 2 Pathways which may feasibly exist between contaminant sources and receptors
- 3 Potential impact on human, controlled waters and the wider environment

The report will conclude with a preliminary risk assessment which will address issues associated with potential contaminants on the site based on the collation of documentary data

2.0 Site Location and Description

The site is located at National Grid Reference 389620, 396650 and covers an area of approximately 0.04ha

Current Site Use

The site consists of a former metal working shop

Site Boundaries

The site is mainly bordered by roads to the north and east. A residential property borders the west and an alleyway borders the north of the site.

Surrounding Site Use

The surrounding area is predominantly residential.

Storage Tanks

No storage tanks were observed on the site.

2.1 Site History

Historical maps have been procured from the Ordnance Survey, which show development of the site and its surrounding area from 1883 to 2016.

These maps are contained in Appendix B. Please note that maps showing no significant change to the site or surrounding area are not referred to in this section.

Site Area	Date of Map	Surrounding Area
The site appears to be located on agricultural land	1848	What appears to be a pond is present immediately to the south west of the site.
	1892-1894	The feature to the south west is shown as an old sand pit. A railway is shown 100m to the south east and 150m to the west. Some housing development is shown to the east.
A building covers the site which appears to be non-residential.	1908-1909	Housing is now present to the west and north. A brickworks is shown 80m to the south including excavations for clay.
	1938	The brickworks is no longer present, although there are remnant excavation features. Housing is present to the south.
A bakery is shown on the site.	1950	

2.2 Areas of Disturbed Ground

There is no evidence of disturbed ground on the site itself.

2.3 Intended Site Use

A residential development is planned on the site.

3 0 Geological Setting

3 1 Geology

Current geological maps of the region (ref 2) have been consulted to provide information on geological conditions associated with the site

Artificial/Made Ground

There are no records within 500m of the study site

Superficial Geology

Devensian Till consisting of Diamicton underlies the study site

Bedrock/solid geology

Bedrock is shown as Mudstone of the Manchester Marls Formation

3 2 Natural Hazards

Hazard	Risk
Collapsible deposits	Very Low
Compressible deposits	No Hazard
Ground Dissolution	No Hazard
Landslides	Very Low
Running Sand	Very Low
Shrinking/Swelling clay	Very Low
Radon	The property is in an Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level) No radon protective measures are necessary in the construction of new dwellings or extensions

3 1 Man Made/ Induced Hazards

Hazard	Risk
BGS Recorded Mineral Sites	5 records found Nearest 169m SW Common Clay and Shale Opencast
Brine Compensation areas	No data found
Coal mining affected areas	The site is in an area which may be affected by coal mining activity It is recommended that a coal mining report is obtained from the Coal Authority
Mining instability	No data found
Man-made mining cavities	No data found
Natural Cavities	No data found
Non-Coal Mining Areas	No data found

4.0 Environmental Setting

4.1 Hydrology and Hydrogeology

Groundwater

Superficial deposits are classified as a Secondary Aquifer Undifferentiated. This is assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

The bedrock underlying the majority of the site is classified as a Secondary B Aquifer. These are predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

Surface water

The nearest surface water feature is Gorton Upper Reservoir located 396m south west of the study site.

Source Protection Zones

No Source Protection Zones are shown within 1000m of the study site.

Surface and Groundwater Abstraction Points

1 abstraction point is recorded within 1000m.

884m NE Golf Courses Spray Irrigation ~~Indirect~~ Direct Surface water

Flood Risk

No flood plains are shown within 250m of the study site.

BGS Groundwater Flooding Data indicates that the site has potential for groundwater flooding of property situated below ground level.

4.2 Sensitive Land Uses

Uses within 1km

Designation	Details
Areas of Green Belt	No records found
Areas of Outstanding Natural Beauty (AONB)	No records found
Environmentally Sensitive Areas	No records found
Local Nature Reserves (LNR)	No records found
Marine Nature Reserves (MNR)	No records found
National Nature Reserves (NNR)	No records found
National Parks (NP)	No records found
National Scenic Areas	No records found
Nitrate Sensitive Areas	No records found
Nitrate Vulnerable Zones	No records found
Ramsar sites	No records found
Sites of Special Scientific Interest (SSSI)	No records found
Special Areas of Conservation (SAC)	No records found
Special Protection Areas (SPA)	No records found
World Heritage Sites	No records found
Ancient Woodland	No records found

4.3 Landfill and Other Waste Sites

Uses within 1km

Records Searched.	Details
BGS Recorded Landfill Sites	No data found
Historical Landfill Sites	8 records found Nearest 74m SE Waste type N/A
Integrated Pollution Control Registered Waste Sites	No data found
Licensed Waste Management Facilities	4 records found Nearest 113m E Category Landfills Taking Non-biodegradable Wastes (Not Construction) License date March 1996
Local Authority Recorded Landfill Sites	No data found
Potentially infilled land (non-water)	5 records found Nearest 70m SE Unknown Filled Ground (Pit, quarry etc) Date of mapping 1993
Potentially infilled land (water)	73 records found Nearest 7m SW Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of mapping 1848
Registered Landfill Sites	2 records found 163m E Authorised Waste Gmwd Group 1 - Non/V Slow Decomp Wast 949m NE Authorised waste Asbestos, Construction and Demolition Wastes, and Non-Haz Waste,
Registered Waste Transfer Sites	No data found
Registered Waste Treatment or Disposal Sites	2 records found 751m NW Category Recycling drums 922m NW Category Scrapyard

4.4 Current Land Use

There are 6 Contemporary Trade Directory Entries recorded within 250m of the study site

On site Engineers ~~15~~ General Inactive
 46m N Vacuum cleaners ~~15~~ Sales and service Active
 75m W Garage Services Inactive
 96m SW Cleaning Services ~~15~~ Domestic Inactive
 122m NW Commercial Cleaning Services Active
 140m SW Waste Disposal Services Inactive

Full details are contained in Appendix C

4.5 Petrol and Fuel Sites

4 records found Nearest
 314m N Obsolete

4 6 Underground High Pressure Oil and Gas Pipelines

No records found

4 7 Environmental permits, Incidents and Registers

Industrial Sites Holding Licences/ Authorisations	Records Held.
Contaminated Land Register Entries and Notices	No records found
Discharge Consents	9 records found Nearest 660m NE Sewage Discharges - Final/Treated Effluent - Not Water Company
Enforcement and Prohibition Notices	No records found
Integrated Pollution Controls	No records found
Integrated Pollution Prevention and Control	No records found
Local Authority Integrated Pollution Prevention and Control	No records found
Local Authority Pollution Prevention and Controls	10 records found Nearest 447m NW PG6/34 Respraying of road vehicles
Local Authority Pollution Prevention and Control Enforcements	No records found
Pollution Incidents to Controlled Waters	16 records found Nearest 492m SW Pollutant Miscellaneous [X] Natural Category 3 - Minor Incident
Prosecutions Relating to Authorised Processes	No records found
Prosecutions Relating to Controlled Waters	No records found
Registered Radioactive Substances	No records found
Control of Major Accident Hazards Sites (COMAH)	No records found
Explosive Sites	No records found
Notification of Installations Handling Hazardous Substances (NIHHS)	No records found
Planning Hazardous Substance Consents	No records found
Planning Hazardous Substance Enforcements	No records found

5.0 Walkover Survey and Other information

The site was visited on 21st April 2017. The site was observed to consist of a single storey building roofed with felted over slate. The interior consisted of concrete flooring that was painted in some sections. It was suggested that a bakery had been present from the 1950s but the site history indicates that this use preceded 1950. This use ceased around 10 years ago when it was occupied by an engineering company. Machinery such as lathes and drilling machines were observed consistent with this land use.

Some light staining was present on the concrete flooring and was observed to consist of water staining and lubricating oil. Lubricating oil containers were present on the site. No other chemical storage evidence was observed. The surround area was observed to be residential with some retail premises. It is understood that the proposed development will consist of building footprint and hardstanding with minimal planting areas.

6.0 Risk Assessment

6.1 Potential Sources of Contamination

Historical mapping indicates that the site was initially agricultural land until 1908 mapping when a building was present that covered the whole site. This is shown as a bakery from 1950 mapping and it appears that there has been no demolition of the previous buildings. It is therefore likely that a bakery was present prior to this. In some cases, bakeries would deposit ash into or onto soils, but this is unlikely in this case given the scale of the building and presence of what appears to be building footprint throughout.

The subsequent use as what appears to be an engineering works was evidenced by the presence of lathes and drilling machines. Materials present resulting from this use included metal swarf and occasional staining of the concrete flooring. However, the inspection of the site indicated that this was likely to have resulted from cutting fluids used in machining metals. There was no indication of containers for solvent storage or olfactory evidence of these compounds. A number of cutting fluids are used and they range from mineral oil based to synthetic compounds. Because of the necessity to provide cooling as well as lubrication when machining, these materials need to be stable at temperature so the volatile content is low when mineral oils are used. Synthetic fluids have been used since the 1950s although in some applications mineral oils may still be used. Consequently, these materials are considered to have a low mobility. Whilst not considered to have a high toxicity, some formulations may contain chlorinated paraffins. These compounds have a low water solubility with an octanol-water partition coefficient ($\log K_{ow}$) of 4.4¹³. They are categorised in group 2B as possibly carcinogenic to humans and toxic to aquatic organisms. However, the low solubility and the presence of concrete hardstanding in good condition throughout indicates that it is unlikely that underlying soils will be impacted by this source.

Overall then, it is considered unlikely that past land uses will have impacted soils to any great degree.

6.2 Preliminary Conceptual Model

In developing the conceptual model, it is critical that not just the source of any potential contamination is assessed but also potential receptors and pathways. The future use of the site may introduce new pathways to any contaminants that may be present. A change in use of the site may also introduce human receptors to different exposure scenarios.

As discussed in the previous section, it is considered unlikely that previous site uses will have impacted soils. This is a consequence of the type of materials used and the presence of hardstanding throughout. Furthermore, the plans for the development indicate that there will be minimal planting areas and it will be necessary to remove the hardstanding and subbase present on the site with materials imported to create these planting areas up to site level. Therefore, this will mitigate against undiscovered contamination in shallow soils. It is recommended that details of imported materials are confirmed.

Therefore, risks to human health from contaminants in soils are considered to be **MODERATE**.

The low potential for contaminants to be present and the presence of hardstanding across much of the site reducing infiltration to a minimum indicates that risks to controlled waters to be **NEGLECTABLE**.

6.3 Ground gas

A number of historical landfill sites are shown on records the nearest being located 74m south east of the site in an area that was previously a brickworks. The area to the south of this is shown as historical landfill but this is a railway cutting. The former brickworks is presumed to have been filled at some point in the 1960s onward with 1956 mapping indicating an excavated area with ponds but subsequent mapping not showing the area as excavated so presumably filled. There is no detail of the type of fill present, but controls were poor during this period so a range of materials may be present. Unless there is evidence to the contrary it should therefore be assumed that putrescible material may be present. If this is present, then there is the potential for ground gas to be produced. The geological mapping indicated that superficial deposits comprise of diamicton. This is a poorly sorted deposit and may contain materials ranging in particle size from clays to boulders and the matrix may contain sand. Consequently, as there is a great deal of variation in this material, there is the potential for it to demonstrate a high permeability to gas. In the absence of other information, it is considered therefore that there is a potential for ground gas migration to impact the study site. Further investigation measures should be carried out to quantify the risk from ground gas and enable a Characteristic Situation to be applied.

7.0 Conclusions and Recommendations

The review of documentary information indicates that there is a NEGLIGIBLE risk to human health arising from the previous or current uses of the site. A NEGLIGIBLE risk to controlled waters is considered to be present. Because of the presence of historical landfill 74m to the south of the site and poorly sorted underlying deposits, there is considered to be the potential for ground gas to impact the study site.

All site investigations carried out in the UK should follow the principles set out in CLR11. This specifies that a phased approach should be used with a desk top study carried out in the first instance in all cases. Where this does not indicate the potential for a pollutant linkage, there is not considered to be a requirement for further stages such as intrusive investigations that involve the physical sampling of soils⁴.

Further investigation works are recommended including the installation of gas monitoring wells and a programme of monitoring for ground gases such as methane and carbon dioxide. A typical scope will include 6 monitoring rounds over a 3-month period with wells monitored for methane, carbon dioxide and oxygen content. Gas flow rate should also be monitored on each occasion. The investigation and monitoring programme must be agreed with the environmental health officer prior to works commencing.

Should during any works on the site, evidence of contamination become apparent, this should be reported to the Local Authority contaminated land officer.

8.0 Statement of Limitations

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project, without an independent check being carried out as to its suitability, and prior written authority of Wesson Environmental being obtained. This document can be relied upon by B & A Susca. Wesson Environmental accepts no responsibility or liability for the consequences of this document being used for any purpose other than the purpose for which it was commissioned. Any person using or relying on the document for such other purpose, agrees, and will by such use or reliance, be taken to confirm his acceptance, to indemnify Wesson Environmental for all loss or damage resulting therefrom. Wesson Environmental accepts no responsibility or liability for this document to any other party.

9 0 References

- 1 Ordnance Survey Maps [1:25000] Collated for Wesson Environmental by Envirocheck ref 002SUMM110_EC_A_Histslice1000, HistSeg2500
- 2 Envirocheck Geology Data Sheet Report ref 002SUMM110_-EC_A_GeologyDatasheet
- 3 Envirocheck Site Sensitivity Report ref 002SUMM110_EC_A_Datasheet
- 4 Model procedures for the management of land contamination (CLR11) 2004 Environment Agency

APPENDIX A

Figures



Figure 1 Interior showing machinery and concrete floor



Figure 2 Eastern part of the building showing flooring and machinery

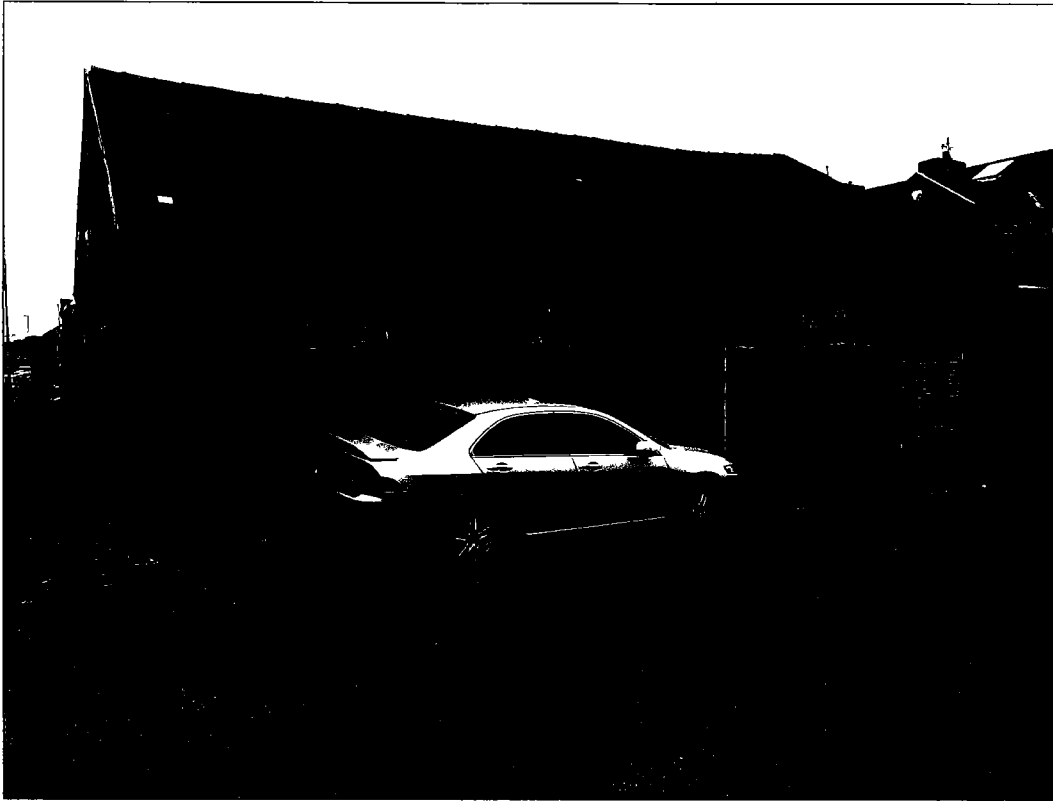
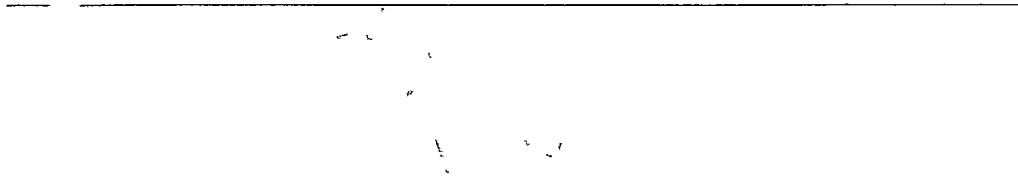


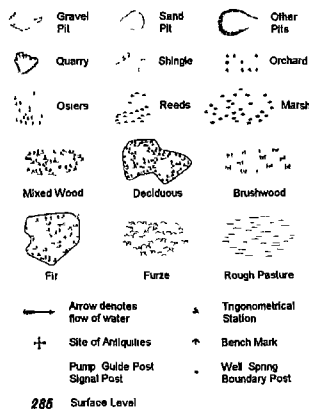
Figure 3 Exterior of the building from the east

APPENDIX B
Historical Maps

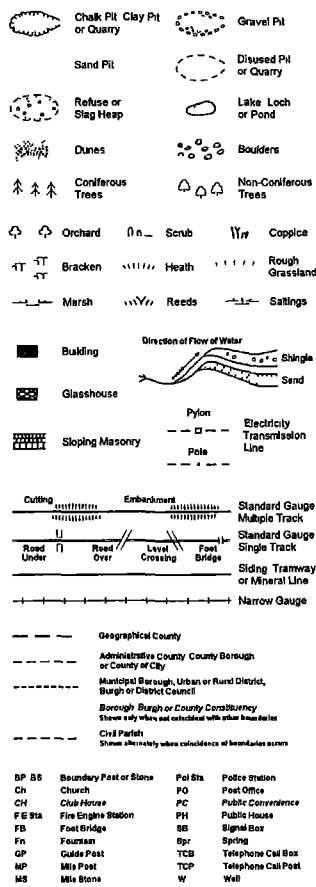


Historical Mapping Legends

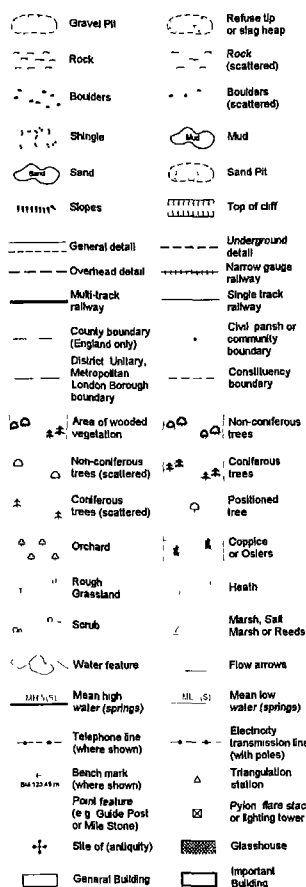
Ordnance Survey County Series 1 10,560



Ordnance Survey Plan 1 10,000



1 10,000 Raster Mapping



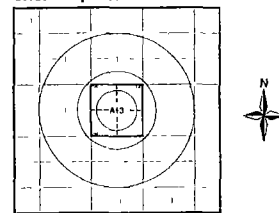
Envirocheck

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Historical Mapping & Photography included

Mapping Type	Scale	Date	Py
Lancashire and Furness	1:10,000	1848	2
Cheshire	1:10,000	1882	3
Lancashire and Furness	1:10,000	1886	4
Cheshire	1:10,000	1888	5
Lancashire and Furness	1:10,000	1888-1910	6
Cheshire	1:10,000	1911	7
Lancashire and Furness	1:10,000	1922-1923	8
Lancashire and Furness	1:10,000	1933-1934	9
Lancashire and Furness	1:10,000	1935	10
Cheshire	1:10,000	1938	11
Lancashire and Furness	1:10,000	1938	12
Ordnance Survey Plan	1:10,000	1964-1966	13
Ordnance Survey Plan	1:10,000	1968	14
Ordnance Survey Plan	1:10,000	1970	15
Ordnance Survey Plan	1:10,000	1981-1982	16
Ordnance Survey Plan	1:10,000	1987	17
Ordnance Survey Plan	1:10,000	1991-1993	18
10K Raster Mapping	1:10,000	1999	19
Street View	Variable		20

Historical Map - Slice A



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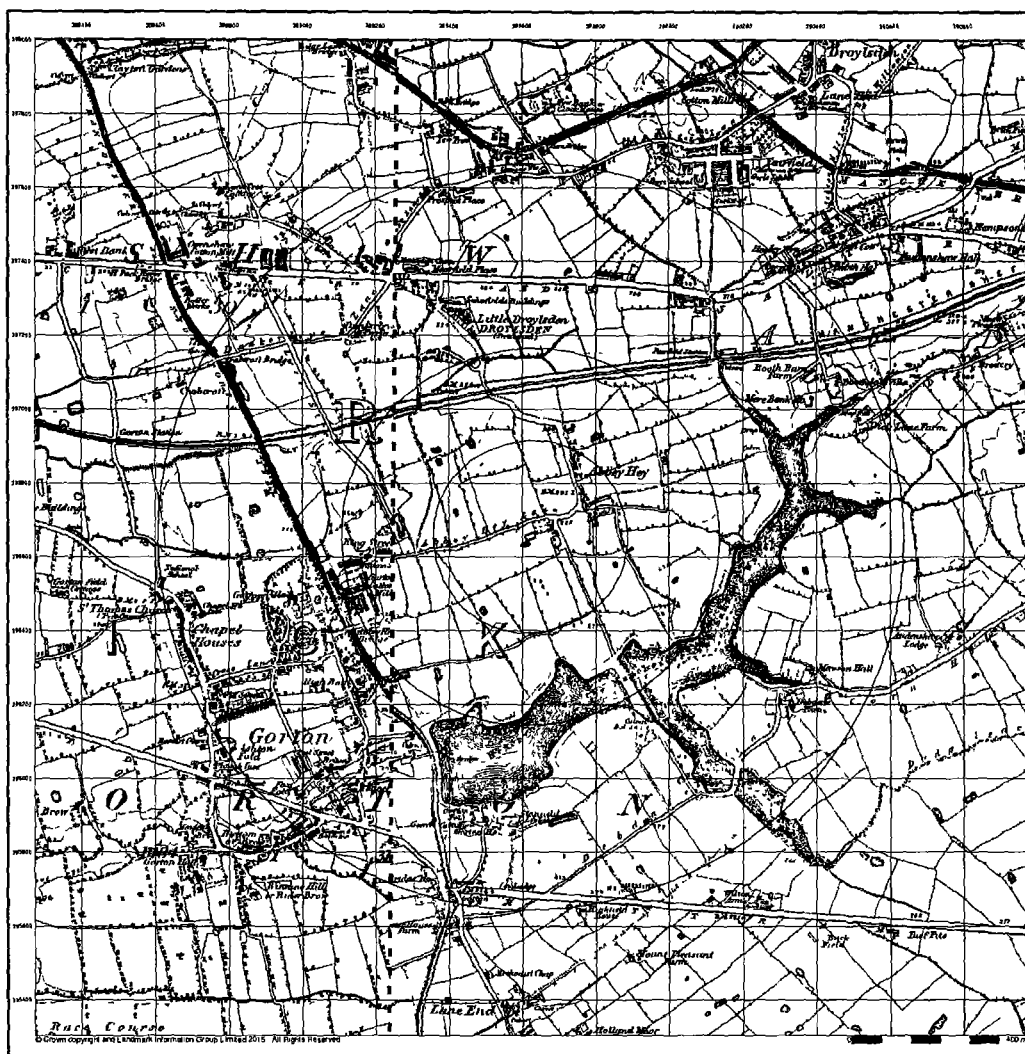
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Customer Ref 001SUMM110
National Grid Reference 389620, 396650
Slice A
Site Area (Ha) 0.04
Search Buffer (m) 1000

Site Details

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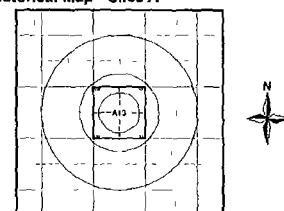
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840s. In 1854 the 1:2,500 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, as OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in mapping areas. In the late 1940s, a Provisional Edition was produced which updated the 1:10,560 mapping from a number of sources. The maps appear unaltered, with all railway camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970 the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

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Historical Map - Slice A



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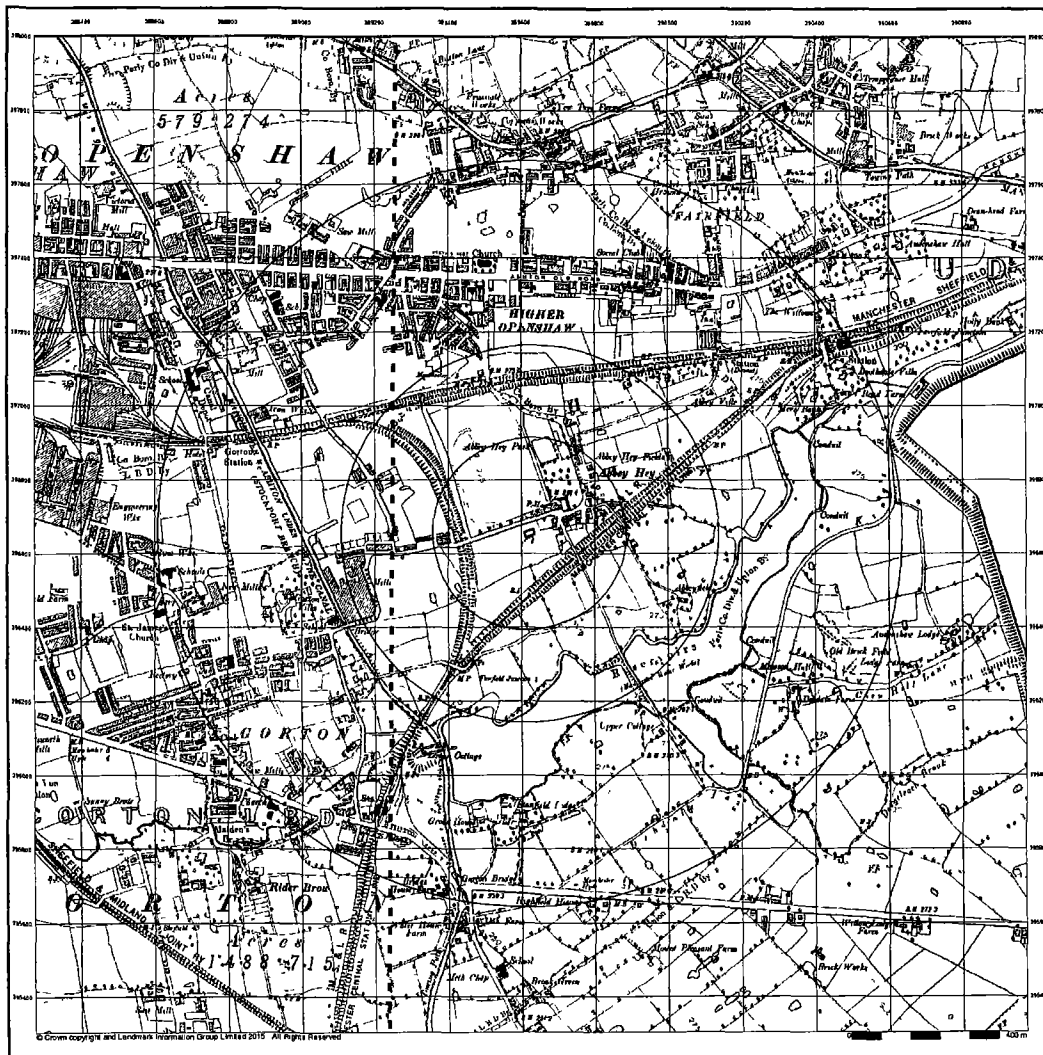
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National Grid Reference 396620, 396650
Slice A
Site Area (Ha) 0.04
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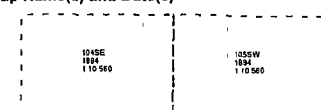
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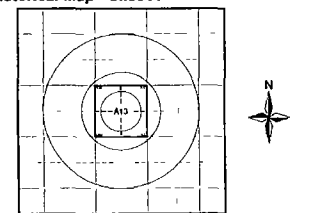
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number 123067250_1_1
Customer Ref 001SUMM110
National Grid Reference 389620 396650
Slice A
Site Area (Ha) 0.04
Search Buffer (m) 1000

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Cheshire
Published 1899

Source map scale - 1:10,560

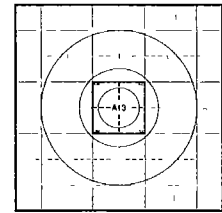
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854, the 1:2,500 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1833, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished, with all military camps and other strategic sites removed. These maps were initially oversprayed with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

003ASE
1899
1:10,560

010NE
1899
1:10,560

Historical Map - Slice A

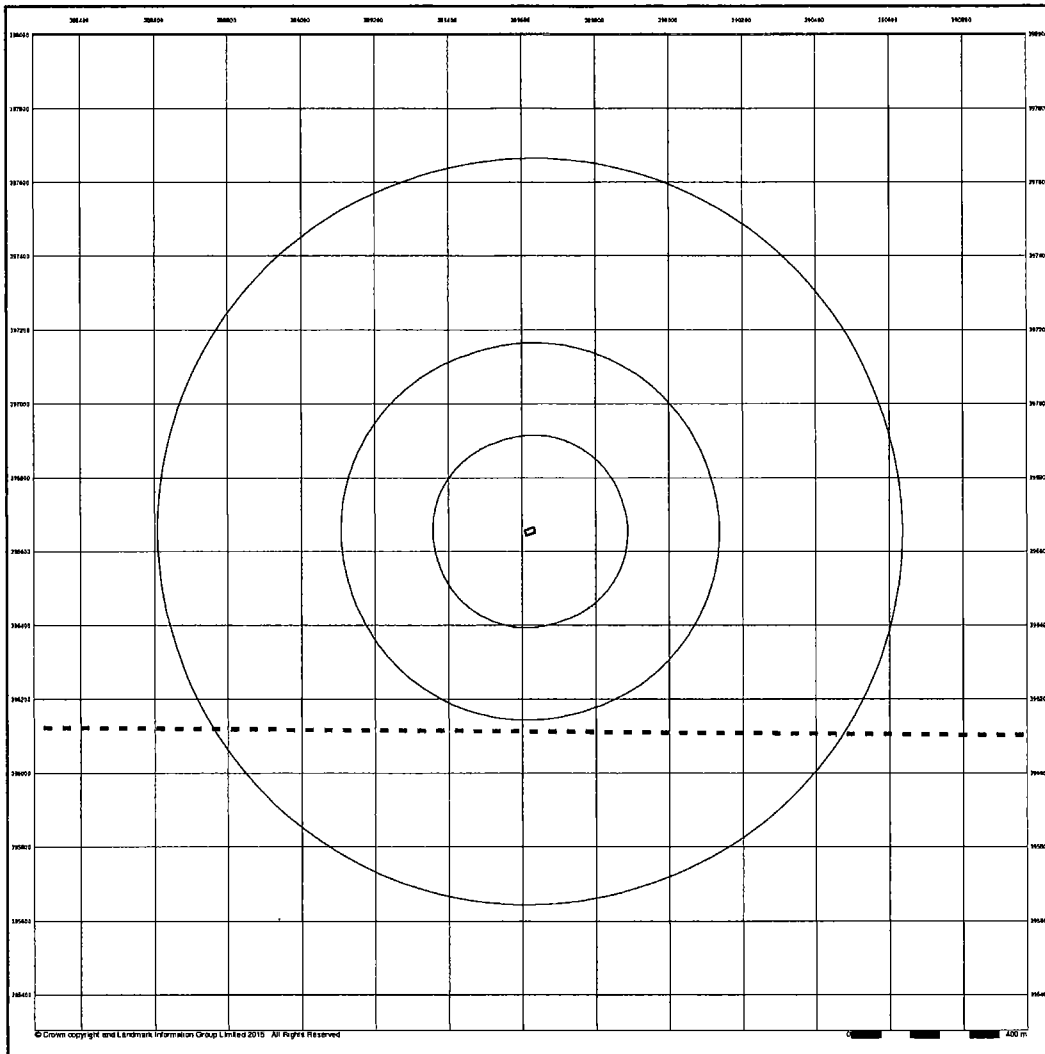


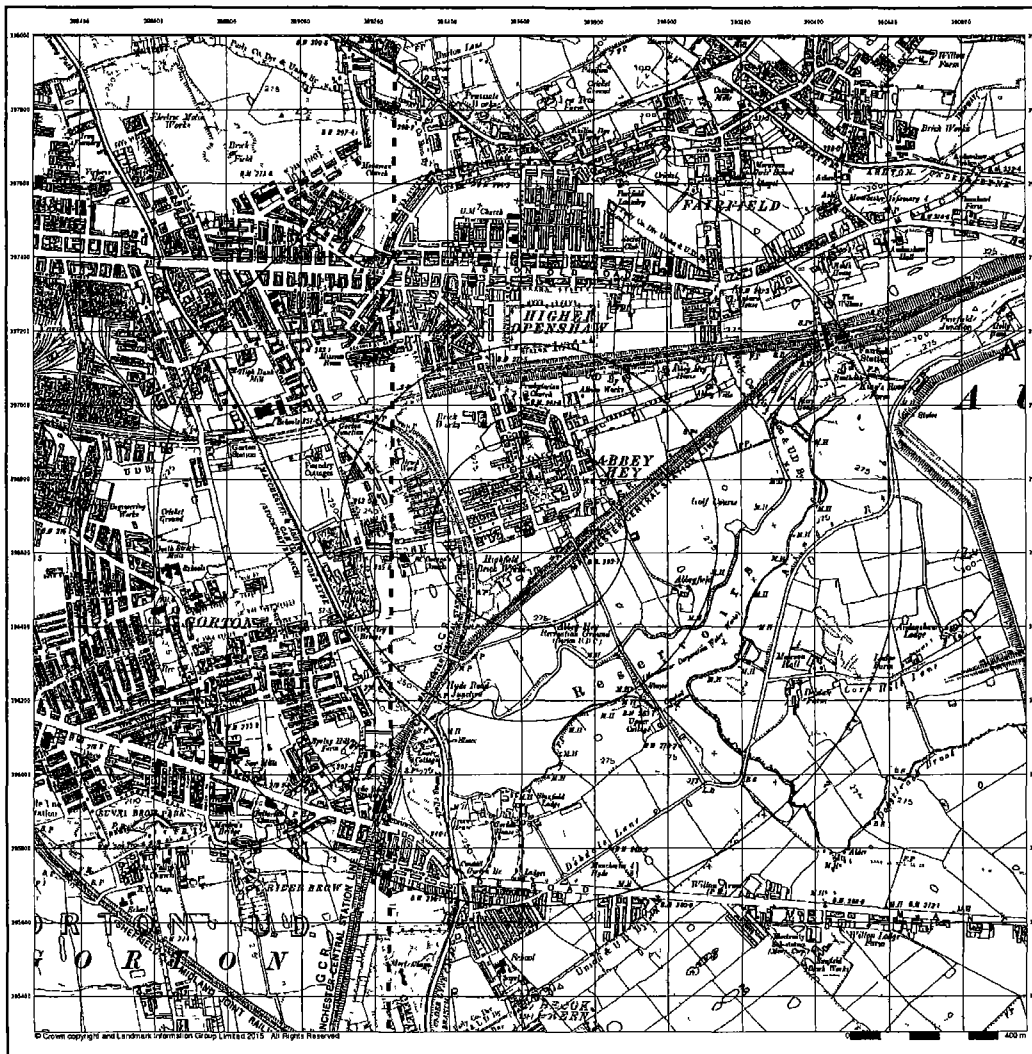
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Site Area (Ha): 0.04
Search Buffer (m): 1000

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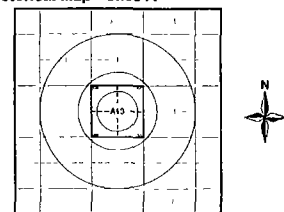
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Map Name(s) and Date(s)

1015SE 1910 1:10,560	1015SW 1910 1:10,560
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Historical Map - Slice A



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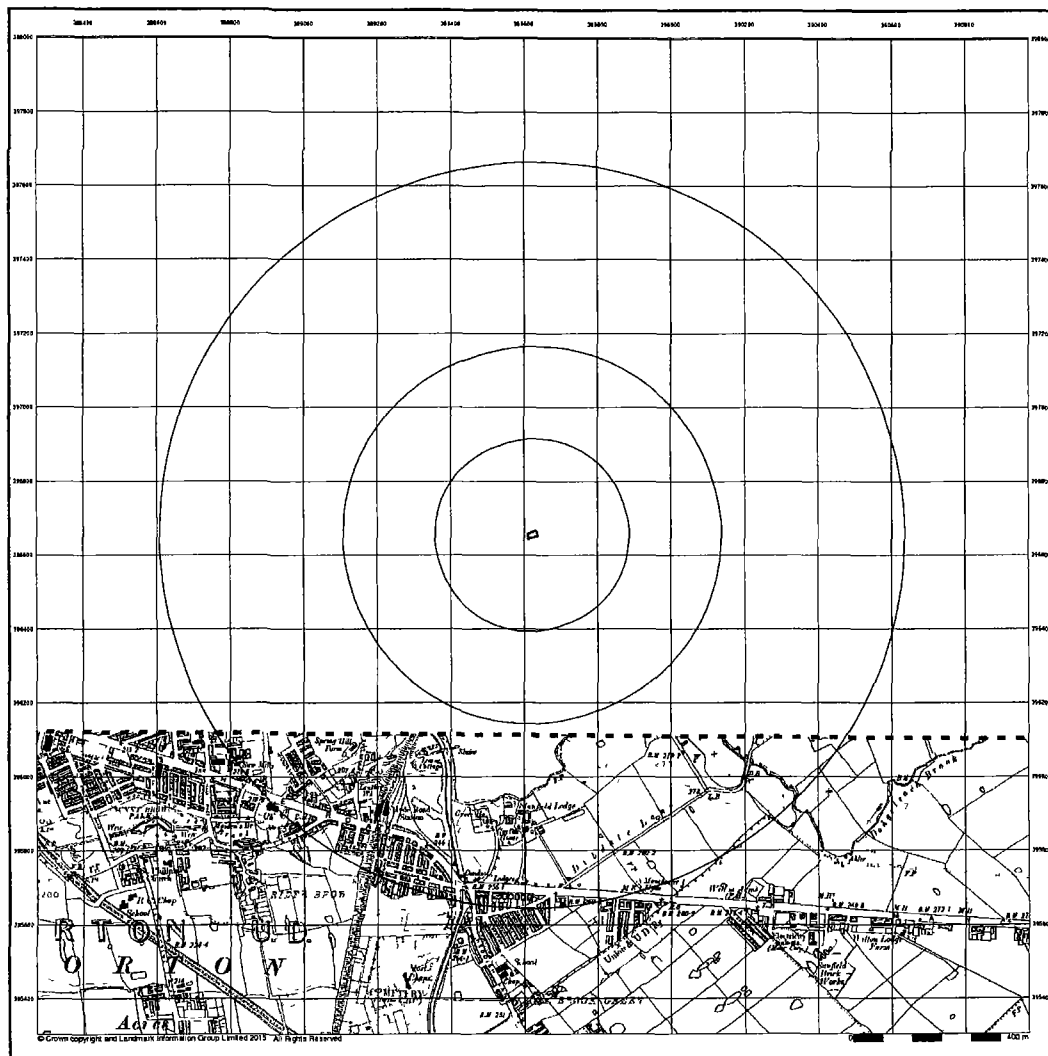
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 National Grid Reference: 389620, 396650
 Slice: A
 Site Area (Ha): 0.04
 Search Buffer (m): 1000

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Published 1911

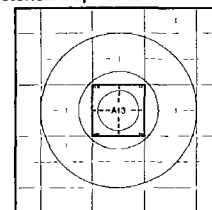
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840s. In 1854 the 1:2,500 scale was adopted for mapping urban areas. These maps were used to update the 1:10,560 maps. The published data given therefore is often some years later than the surveyed data. Before 1838, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1840s a Provisional Edition was produced which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished, with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970 the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

003ASE
1911
1:10,560
01ONE
1911
1:10,560

Historical Map - Slice A



Order Details

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Customer Ref: 001SUMM110
National Grid Reference: 359620 396850
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Site Area (Ha): 0.04
Search Buffer (m): 1000

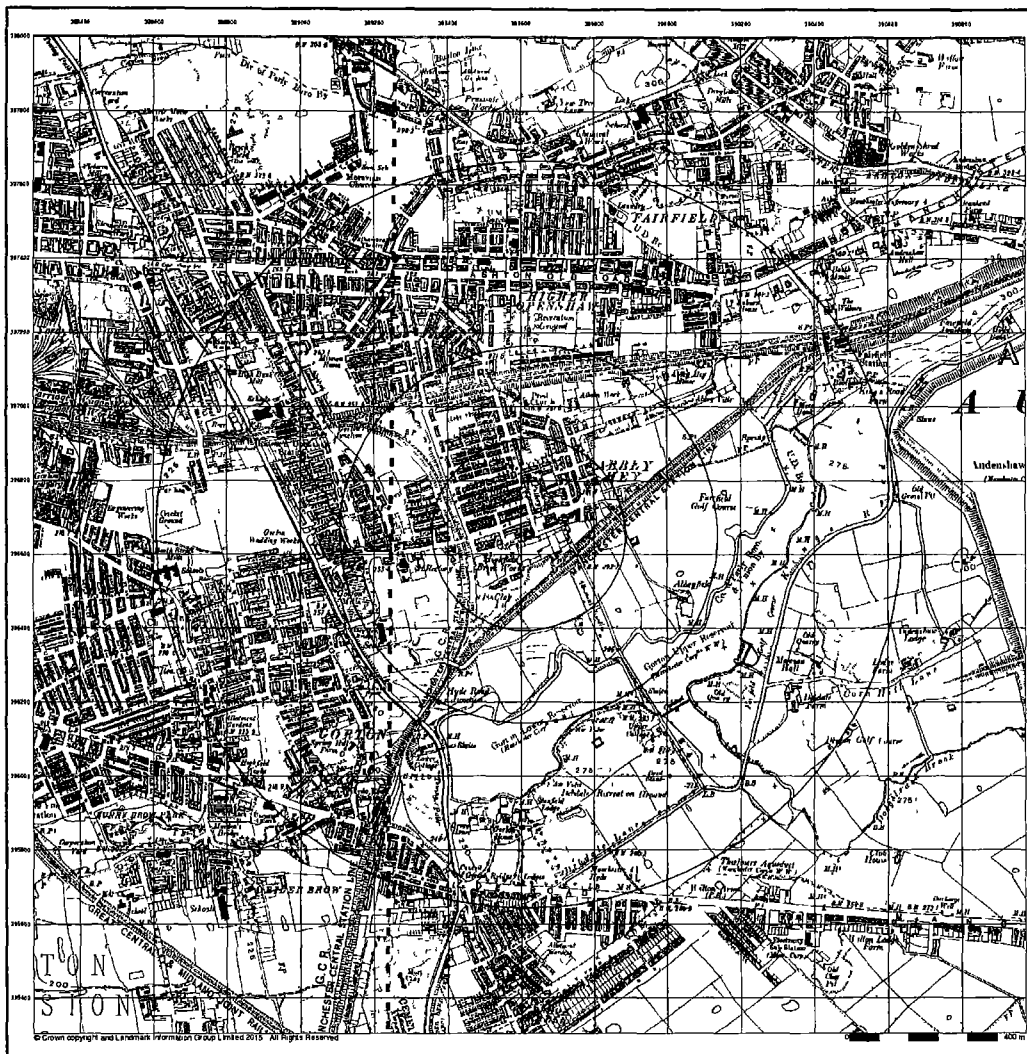
Site Details

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A Landmark Information Group Service v50 D 02-May-2017 Page 7 of 20



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Lancashire And Furness
Published 1922 - 1923

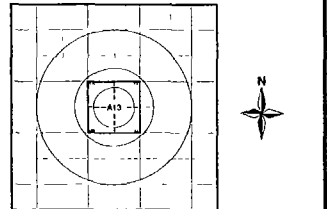
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

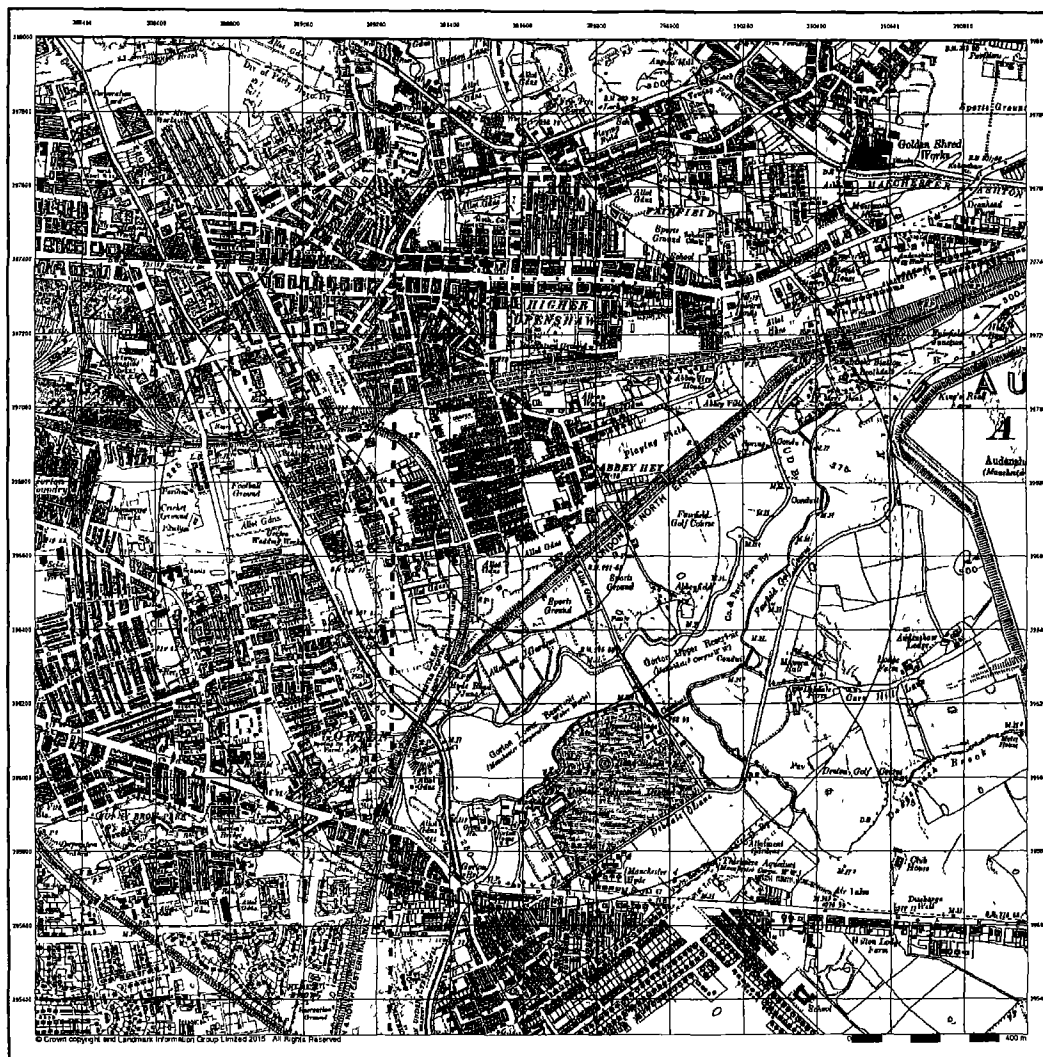
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Site Details

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Lancashire And Furness
Published 1833 - 1934

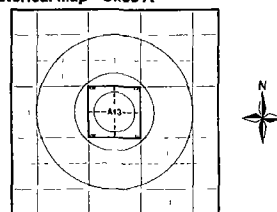
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Map Name(s) and Date(s)

1049E 1933 1:10,560	1055W 1934 1:10,560
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Historical Map - Slice A



Order Details

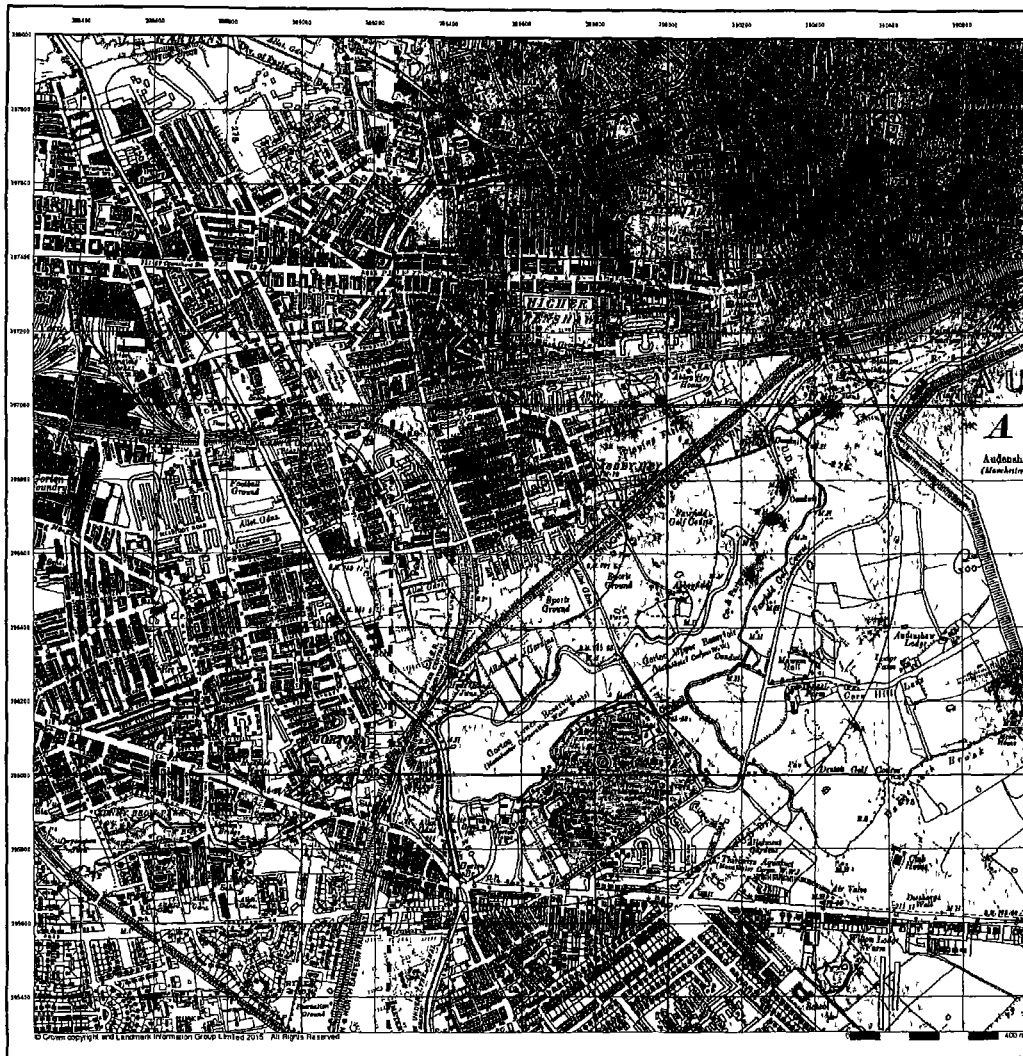
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Customer Ref	001SUMM110
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Slice	A
Site Area (Ha)	0.04
Search Buffer (m)	1000

Site Details

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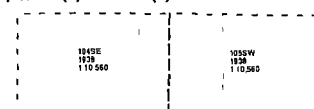
Lancashire And Furness

Published 1938

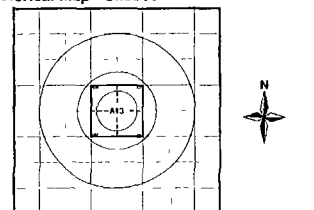
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

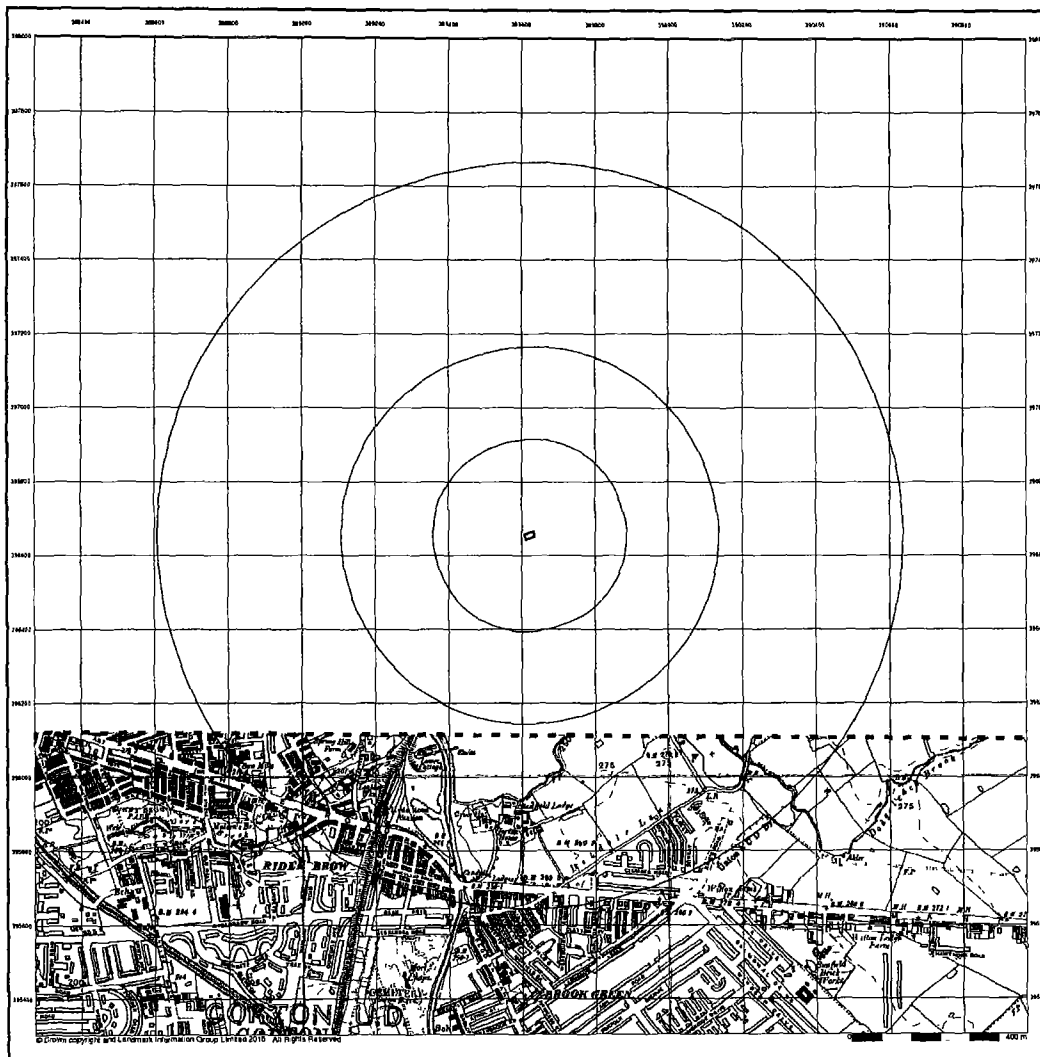
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Search Buffer (m) 1000

Site Details

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Cheshire

Published 1938

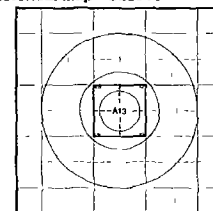
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Map Name(s) and Date(s)

003ASE
1938
1 10,560

Historical Map - Slice A



Order Details

Order Number 123067250_1_1
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Site Details

45 Harrop Street MANCHESTER M18 8RN

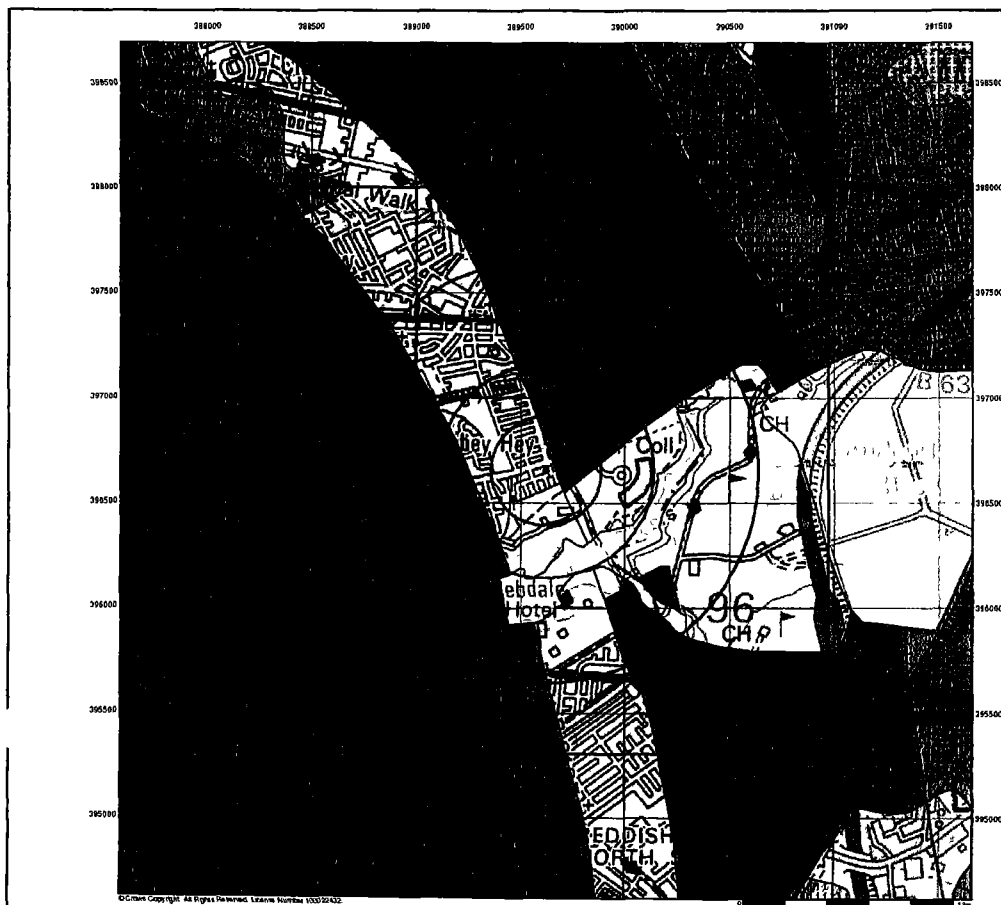
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APPENDIX C

Environmental Reports



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Groundwater Vulnerability

General

☐ Specified Site ☐ Specified Buffer(s) X Bearing Reference Point
☐ Site ☐ Map ID

Agency and Hydrological

Geological Classes

Major Aquifer
(Highly Permeable)

Minor Aquifer
(Variably Permeable)

Non Aquifer
(Negligibly Permeable)

Water or Sea

Drift Deposit

Soil Classes

High (H) 1 2 3 U

Intermediate (I) 1 2

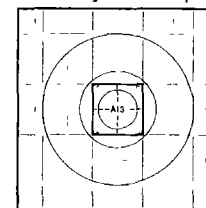
Low

High (H) 1 2 3 U

Intermediate (I) 1 2

Low

Site Sensitivity Context Map - Slice A



Order Details

Order Number 123067250_1.1
 Customer Ref 0019LMM110
 National Grid Reference 389620 396650
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 Site Area (Ha) 0.04
 Search Buffer (m) 1000

Site Details

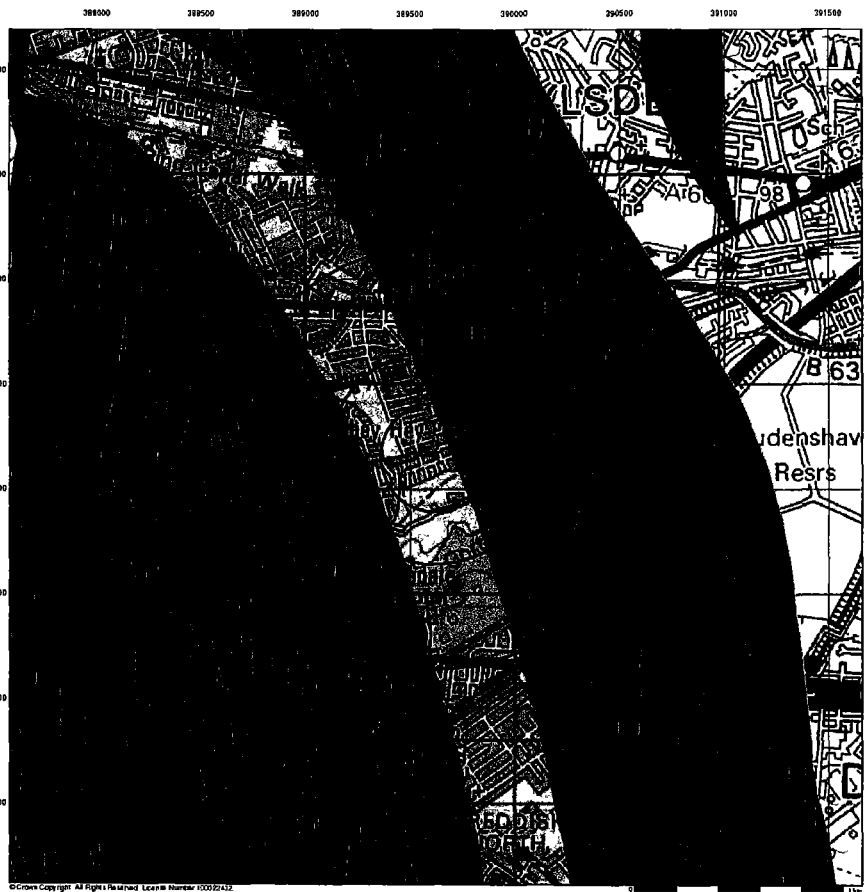
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Bedrock Aquifer Designation

General

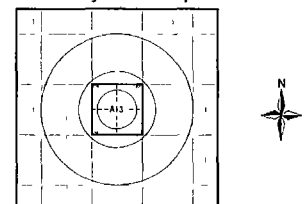
- Specified Site
- Specified Buffer(s)
- ✕ Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landlip)

Site Sensitivity Context Map - Slice A



Order Details

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National Grid Reference	389620 396650
Slice	A
Site Area (Ha)	0.04
Search Buffer (m)	1000

Site Details

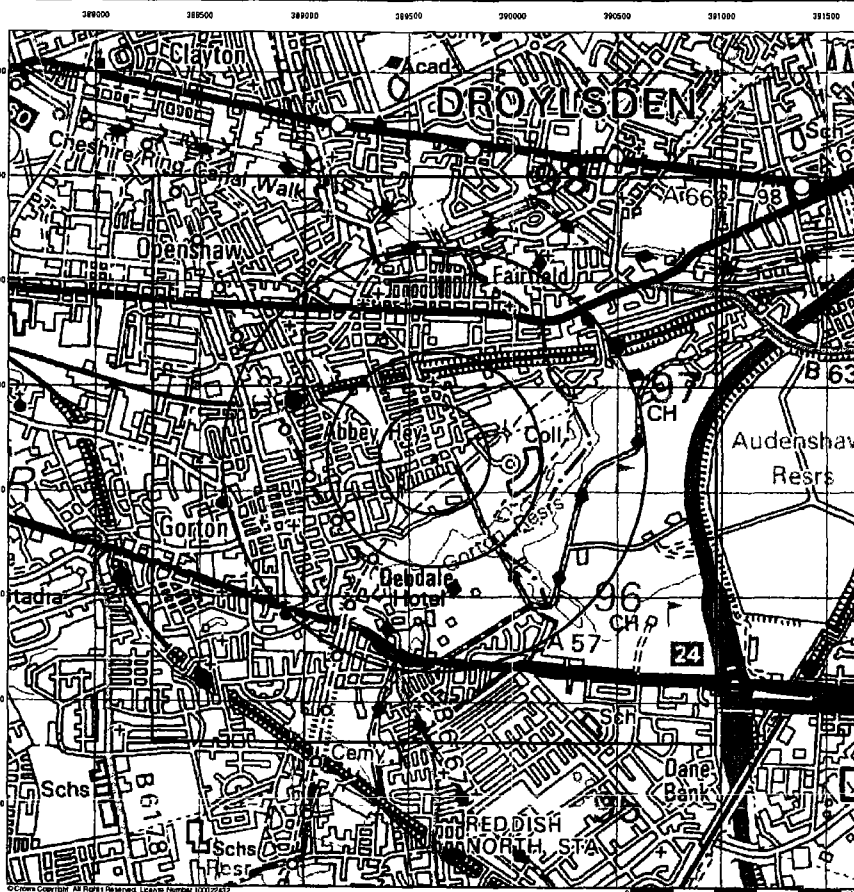
45, Harrop Street, MANCHESTER, M18 8RN

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Superficial Aquifer Designation

General

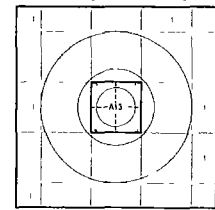
- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- Site
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

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 National Grid Reference: 389820 386650
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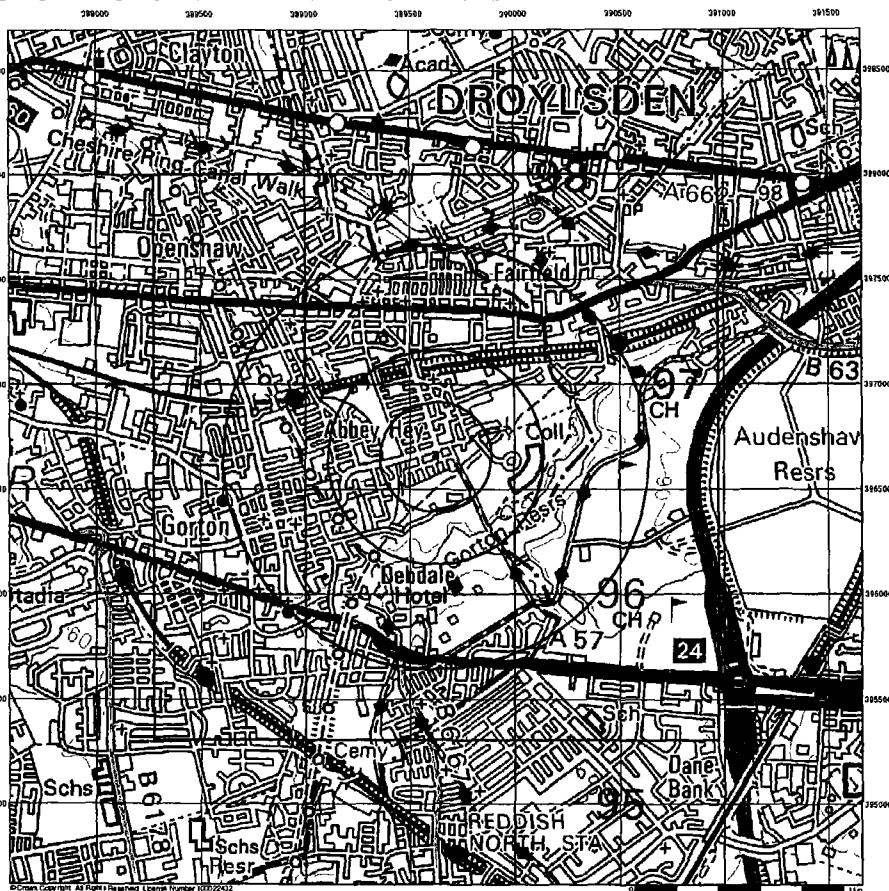
Site Details

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Source Protection Zones

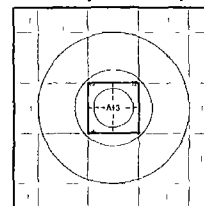
General

- Specified Site
- Site
- Specified Buffer(s)
- Map ID
- ✕ Bearing Reference Point

Agency and Hydrological

- Inner zone (Zone 1)
- ▨ Inner zone - subsurface activity only (Zone 1c)
- ▨ Outer zone (Zone 2)
- ▨ Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- ▨ Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)
- Source Protection Zone Boundary

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 123067250_1_1
 Customer Ref: 001SUMM1107
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 Search Buffer (m): 1000

Site Details

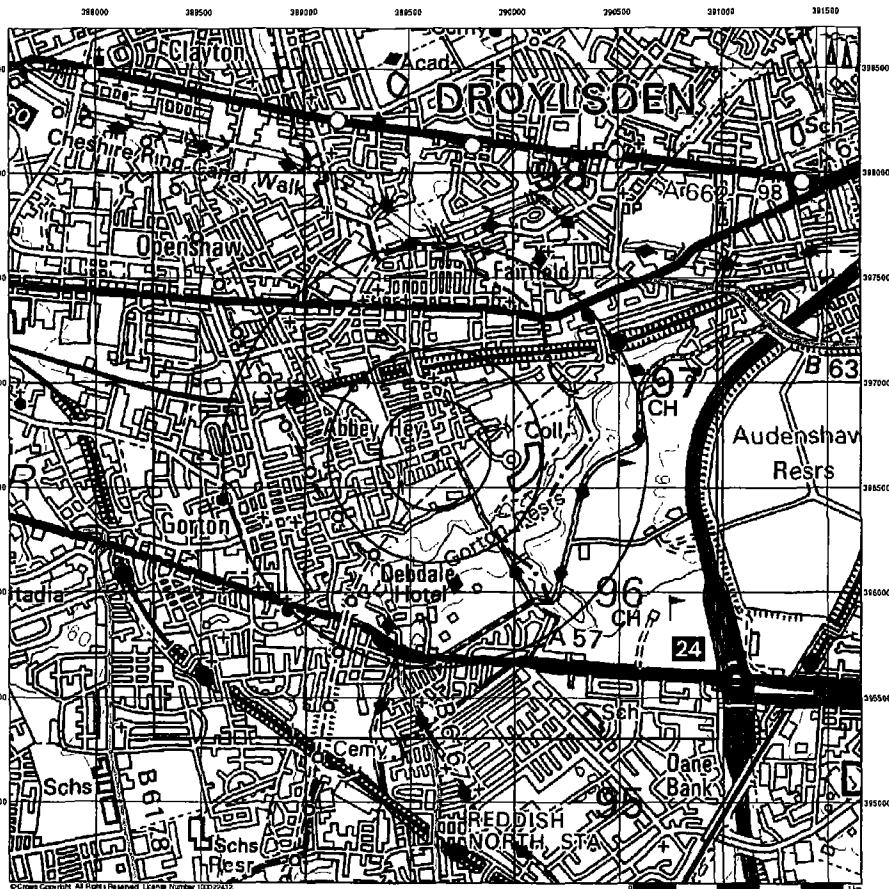
45 Harrop Street, MANCHESTER, M16 8RN

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Sensitive Land Uses

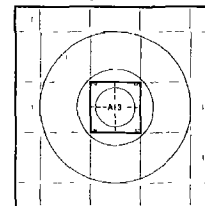
General

- Specified Site
- Specified Buffer(s)
- ✕ Bearing Reference Point
- Site
- Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



Order Details

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Site Details

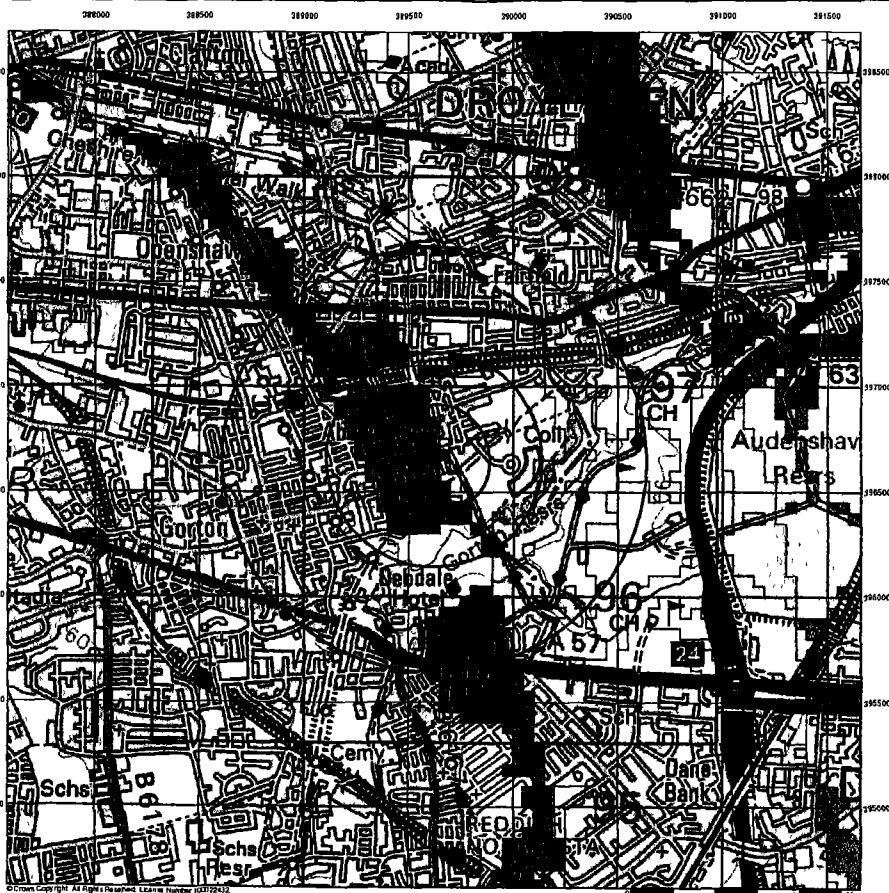
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BGS Flood GFS Data

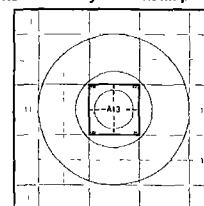
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- Site

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 123067250_1_1
 Customer Ref: 001SUMM110
 National Grid Reference: 389620 398550
 Slice: A
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 Search Buffer (m): 1000

Site Details

45 Harrop Street, MANCHESTER, M18 8RN

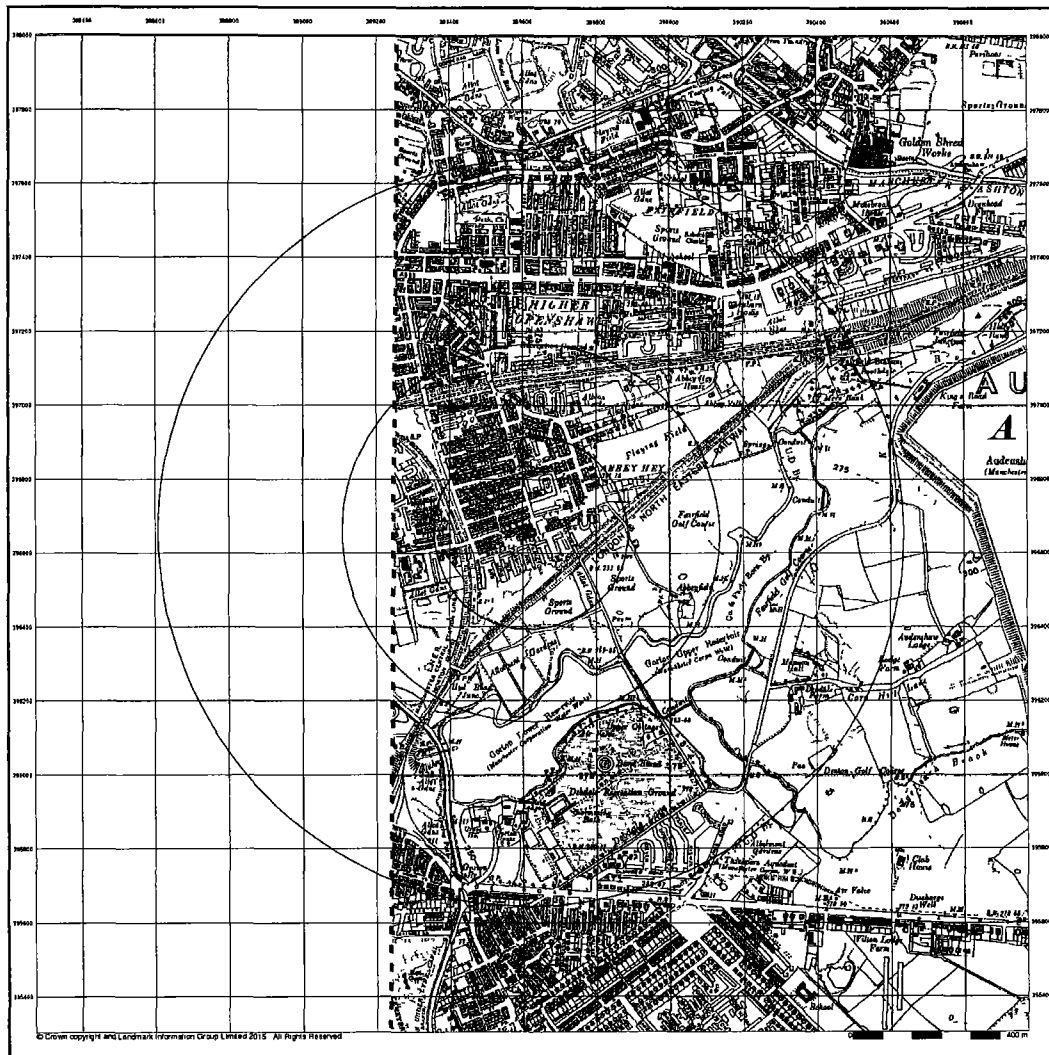
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Page 6 of 6

APPENDIX C
Environmental Reports



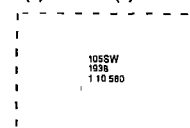
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Lancashire And Furness
Published 1938

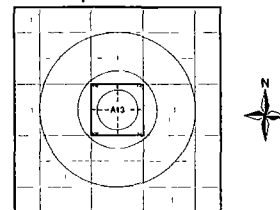
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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National Grid Reference: 389620, 396850
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details
45 Harrop Street MANCHESTER M18 6RN

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Ordnance Survey Plan Published 1954 - 1956

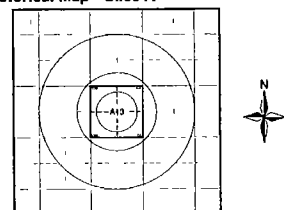
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Map Name(s) and Date(s)

S189NE 1958 1:10 560	S189NW 1954 1:10 560
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Historical Map - Slice A

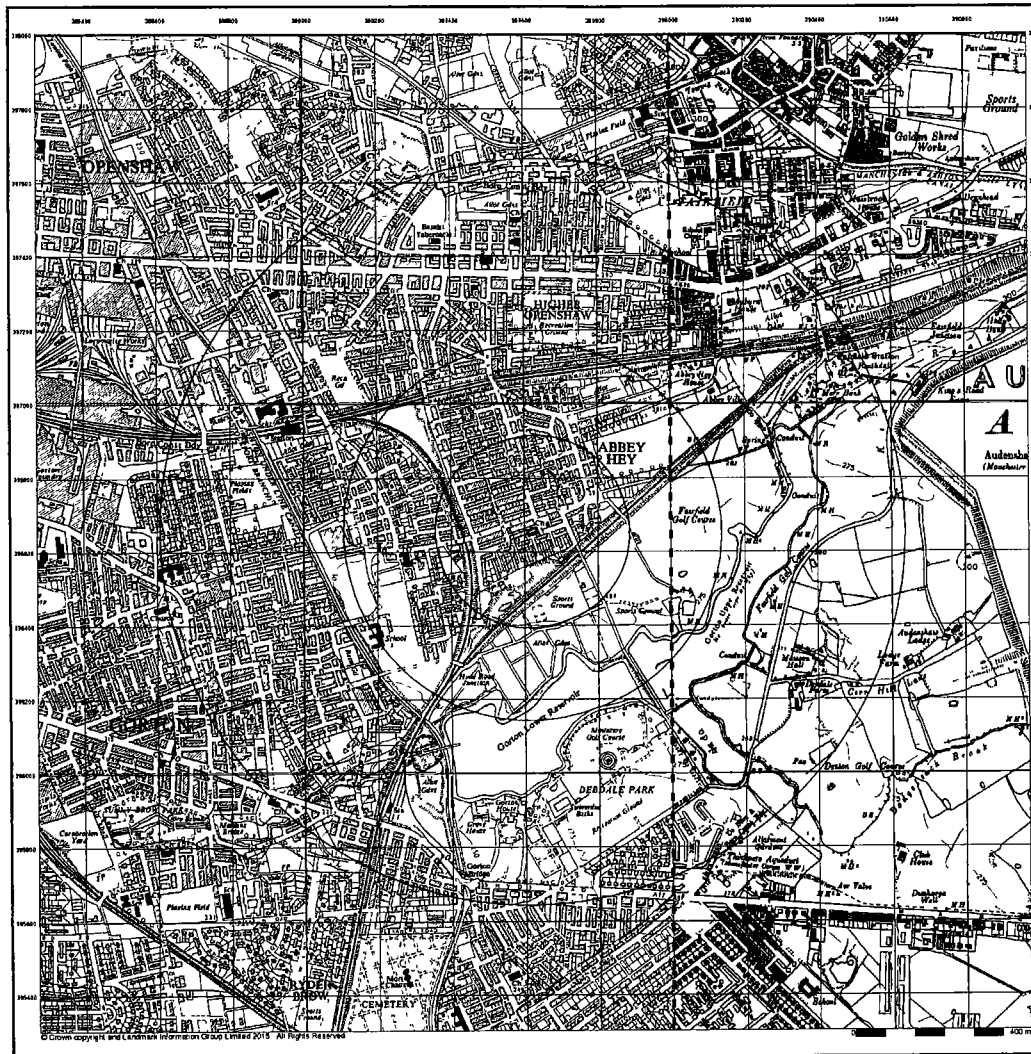


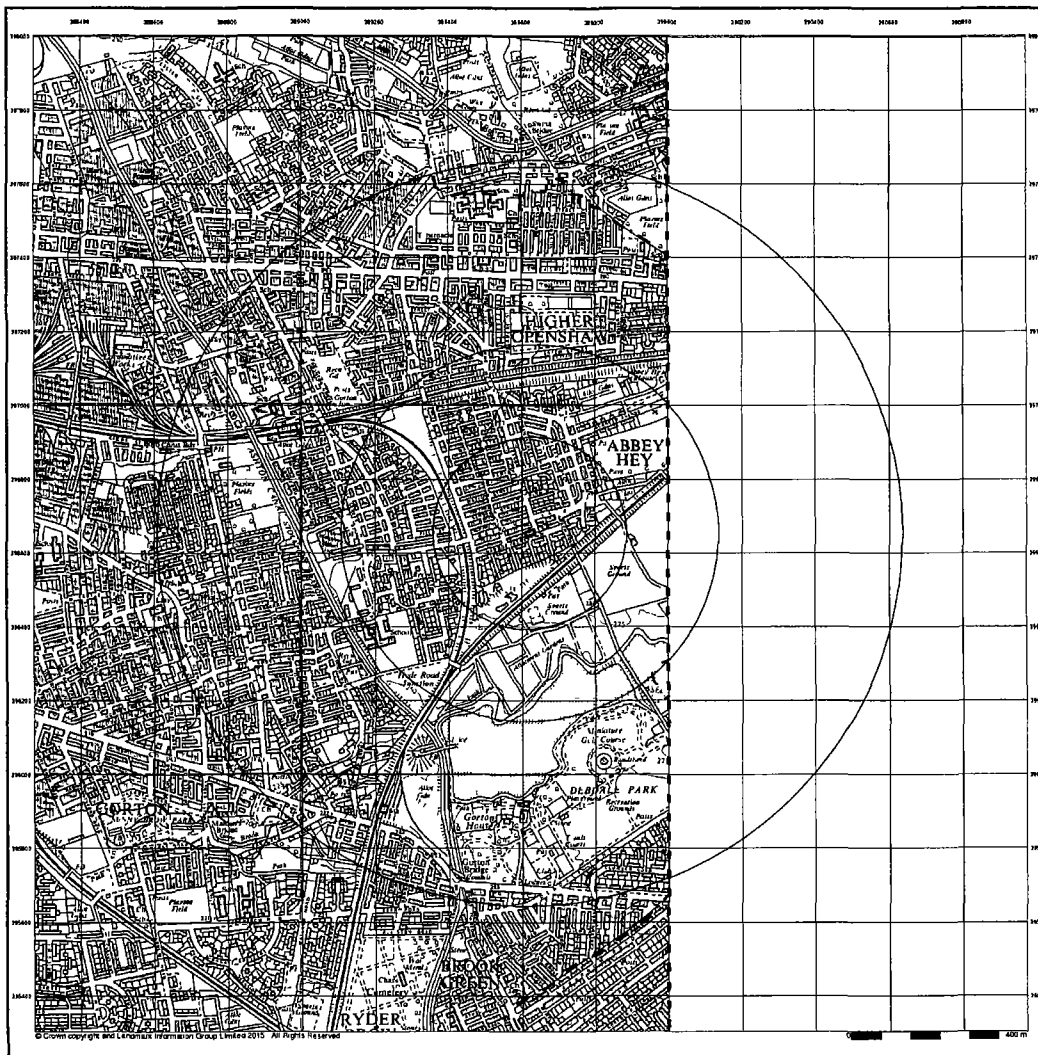
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Site Details

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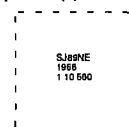
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**Ordnance Survey Plan
Published 1968**

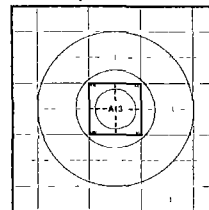
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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National Grid Reference: 388820 390050
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

45 Harrop Street MANCHESTER M18 8RN

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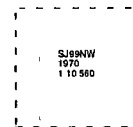
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Ordnance Survey Plan Published 1970

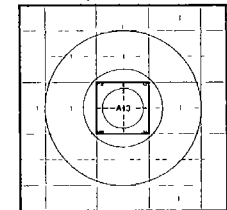
Source map scale - 1 10,000

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Map Name(s) and Date(s)



Historical Map - Slice A

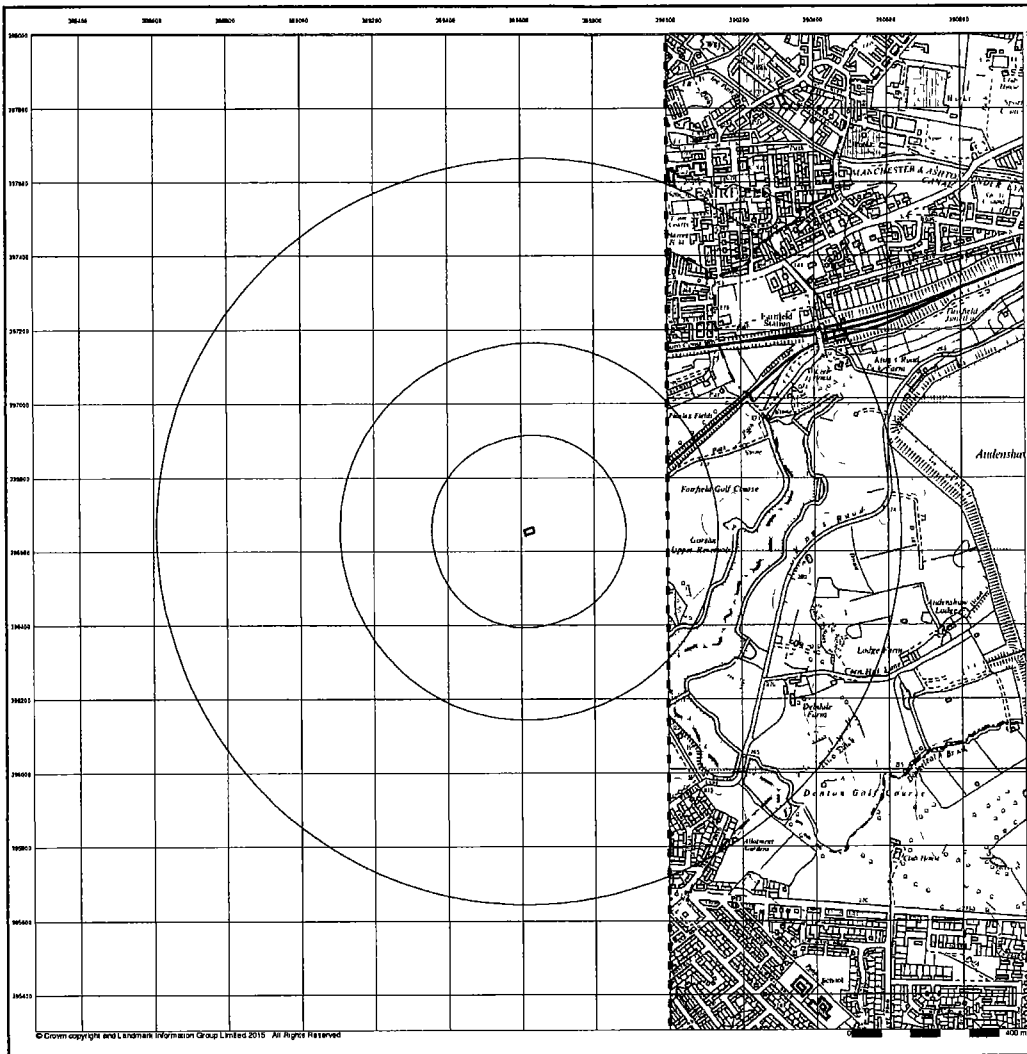


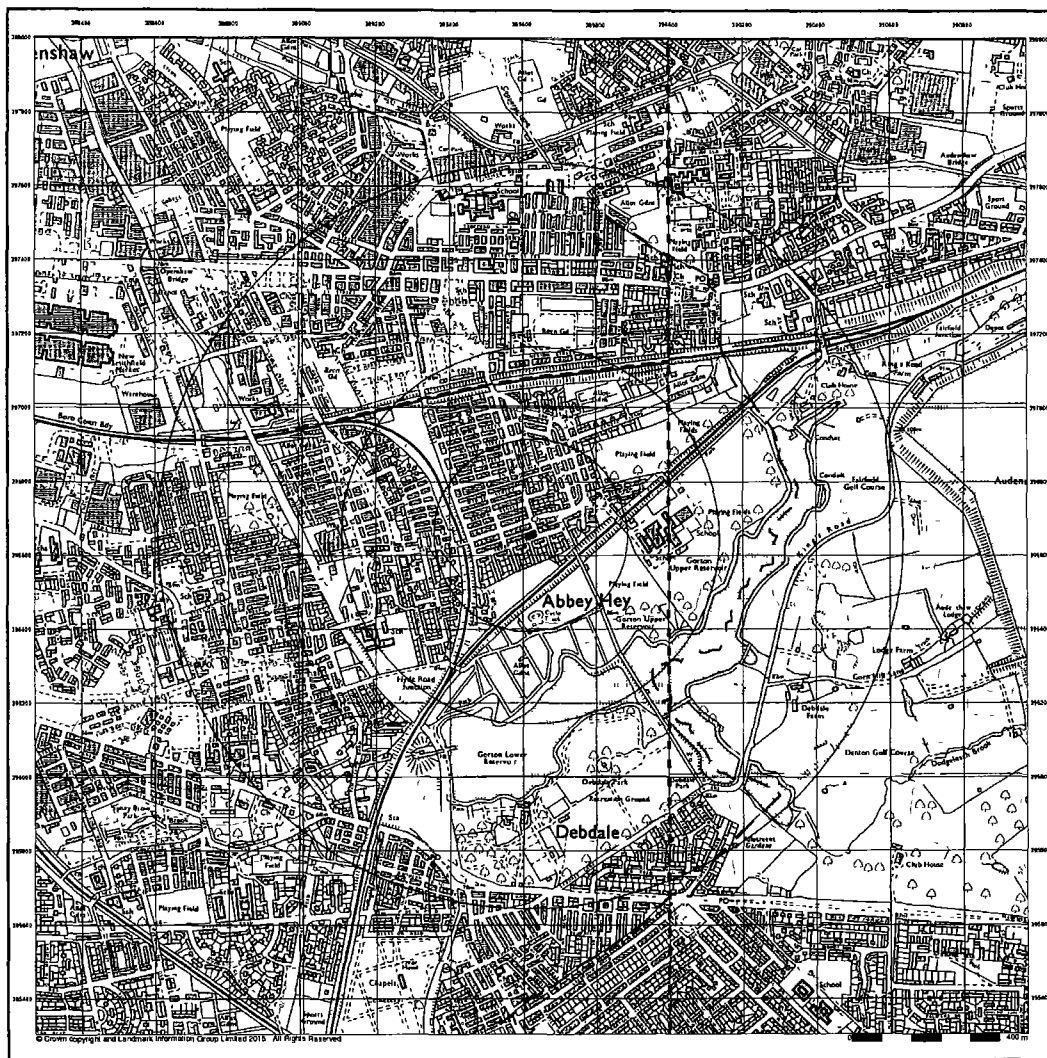
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Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1981 - 1982

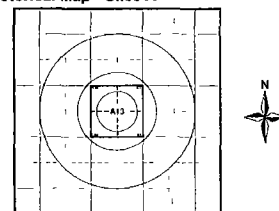
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1940's. In 1954 the 1:2,500 scale was adopted for mapping urban areas. These maps were used to update the 1:10,000 maps. The published date given therefore is often some years later than the surveyed date. Before 1938 all OS maps were based on the Cassini Projection with independent surveys of a single county or group of counties giving rise to significant inaccuracies in outlying areas. In the late 1940's a Provisional Edition was produced which updated the 1:10,000 mapping from a number of sources. The maps appear unfinished, with all military camps and other strategic sites removed. These maps were initially oversprinted with the National Grid. In 1970 the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SJ89NE 1981 1:10,000	SJ89NW 1982 1:10,000
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Historical Map - Slice A



Order Details

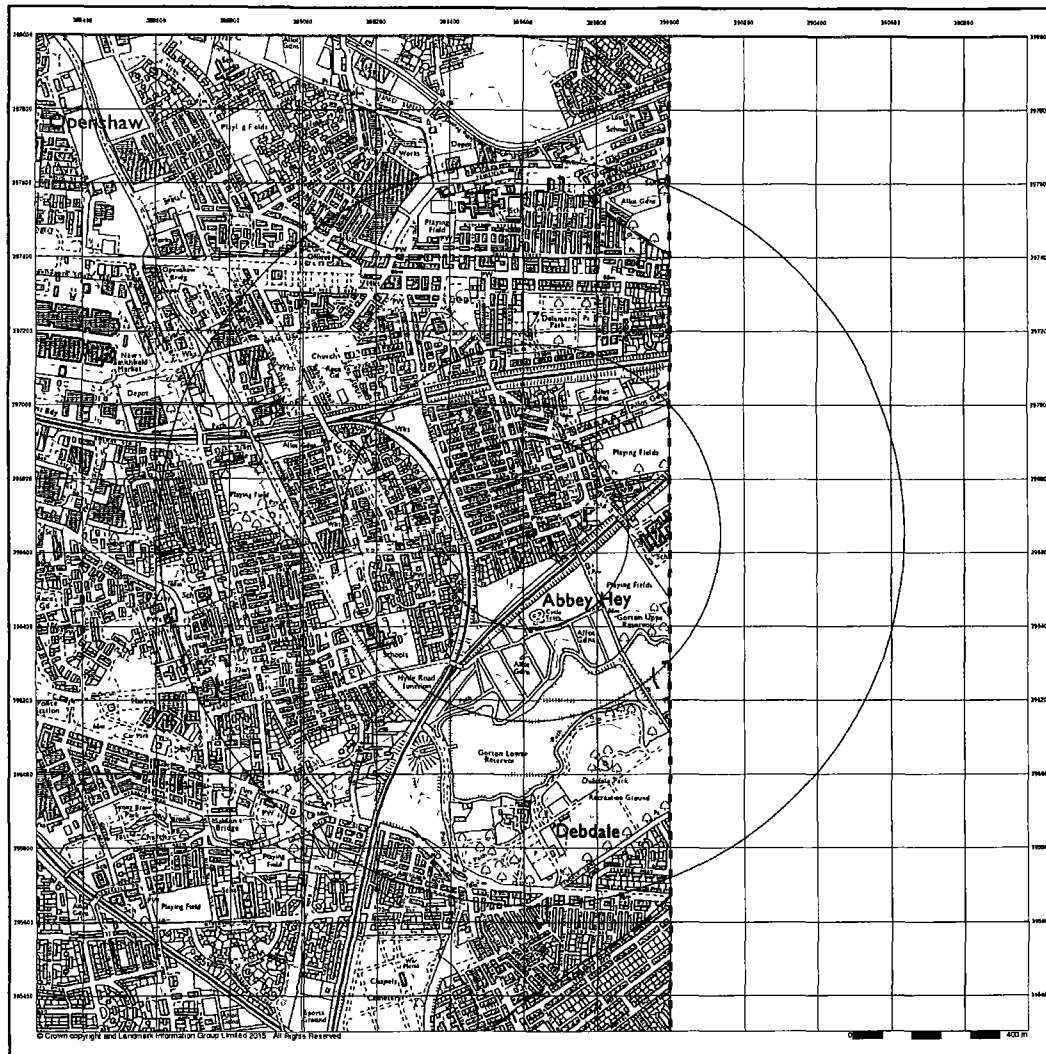
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 Site Area (Ha): 0.04
 Search Buffer (m): 1000

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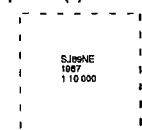
Ordnance Survey Plan

Published 1987

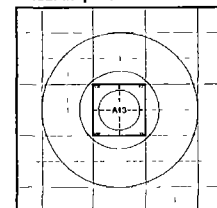
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas. These maps were used to update the 1:10,000 maps. The published date given therefore is often some years later than the surveyed date. Before 1939 all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties giving rise to significant inaccuracies in outlying areas. In the late 1940's a Provisional Edition was produced which updated the 1:10,000 mapping from a number of sources. The maps appear unaltered with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970 the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number 123067250_1_1
 Customer Ref 001SUMM110
 National Grid Reference 389620 396650
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 Site Area (Ha) 0.04
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Ordnance Survey Plan
Published 1991 - 1993

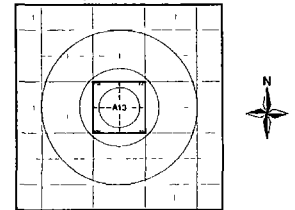
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Map Name(s) and Date(s)

SJ08NE 1993 1:10,000	SJ08NW 1993 1:10,000
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Historical Map - Slice A



Order Details

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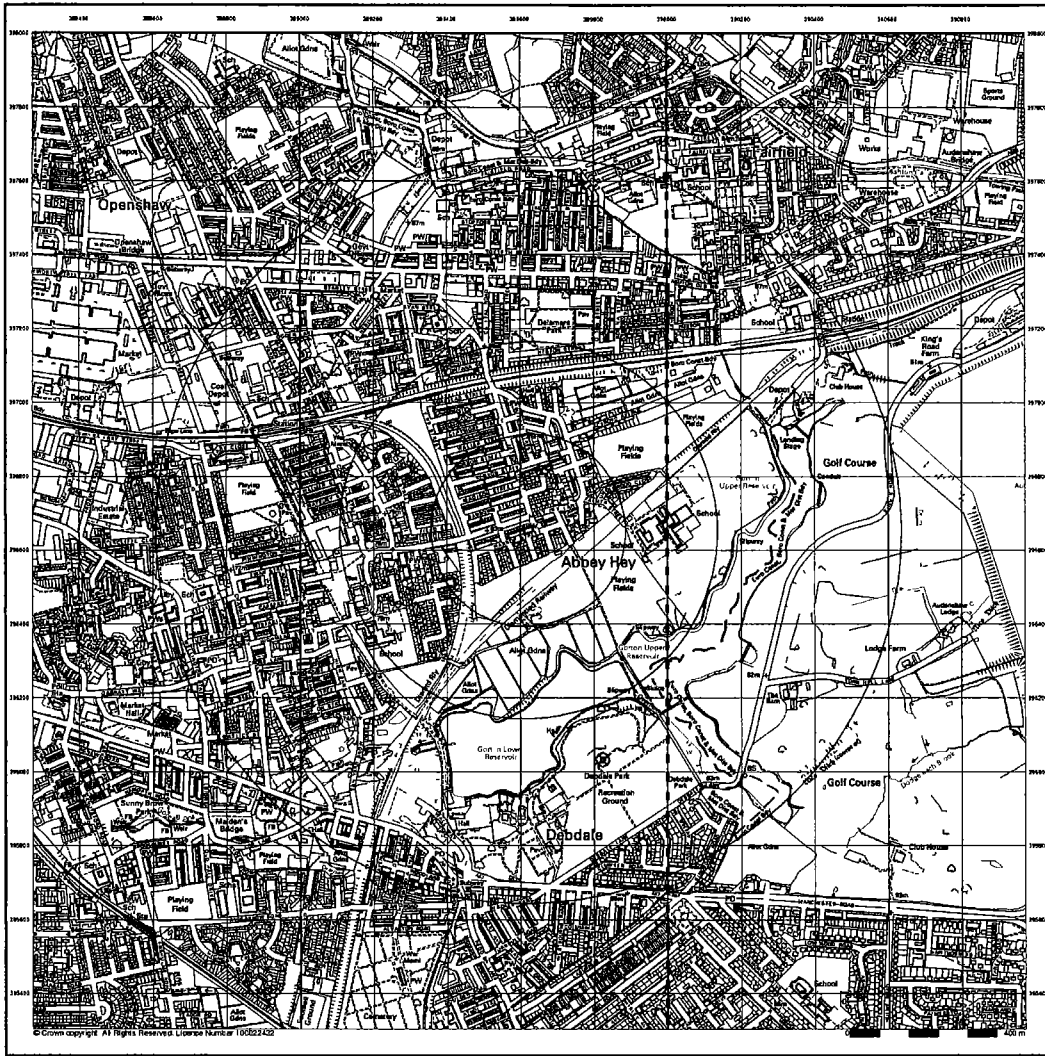
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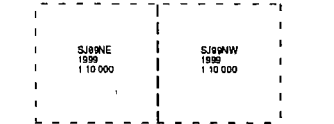
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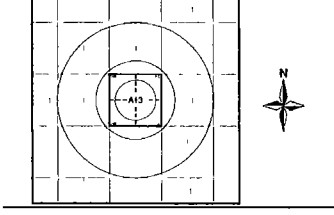
10k Raster Mapping
Published 1999
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



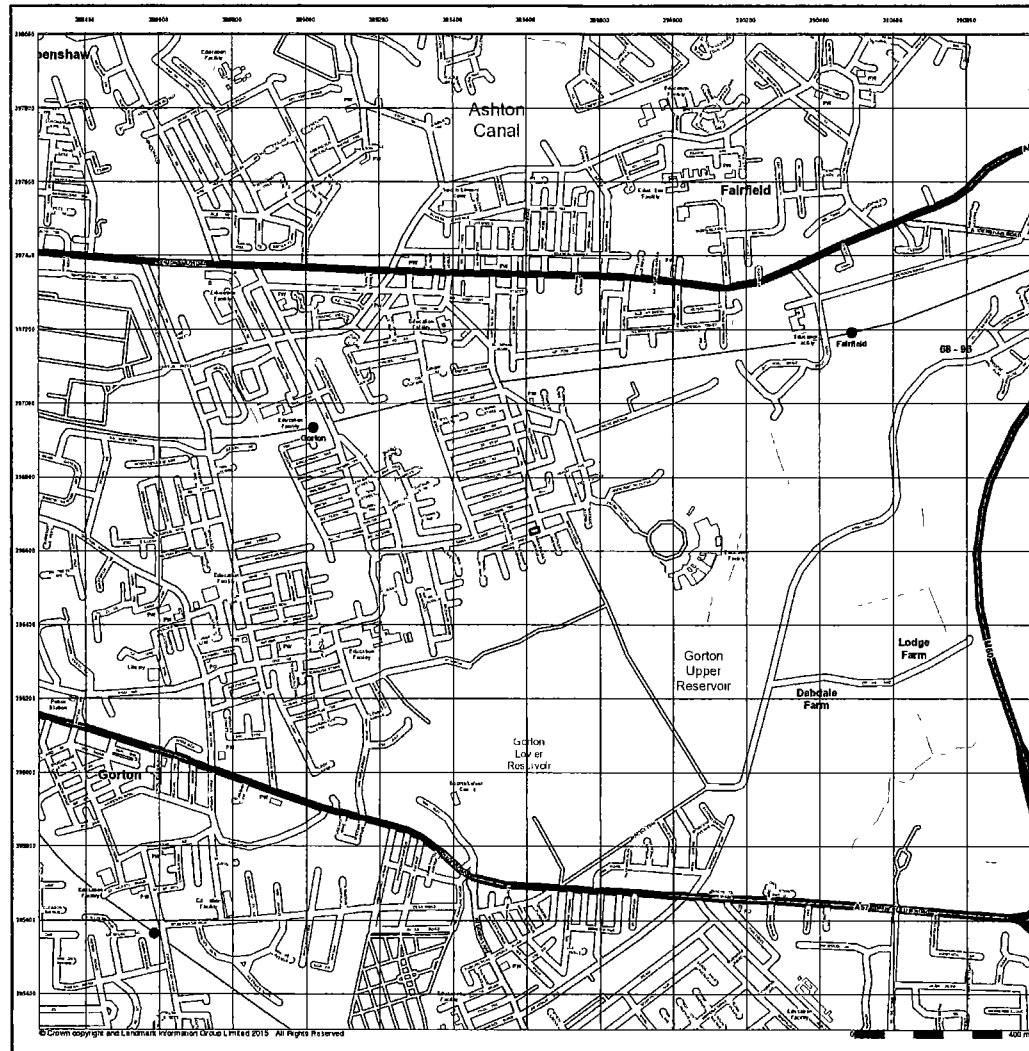
Historical Map - Slice A



Order Details
Order Number: 123067250_1_1
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Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

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Street View

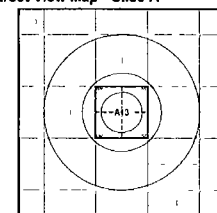
Published 2017

Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000.

Map Name(s) and Date(s)

Street View Map - Slice A



Order Details

Order Number 123067250_1_1
 Customer Ref 001SUMM110
 National Grid Reference 388620, 396650
 Slice A
 Site Area (Ha) 0.04
 Search Buffer (m) 1000

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Geology 1:50,000 Maps Legends

Artificial Ground and Landfill

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WMGR	Infilled Ground	Artificial Deposit	Cenozoic Cenozoic
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	TILLD	Till Devenian	Diamicton	Devenian Devenian
	GFDUD	Glaciofluvial Deposits Devenian	Sand and Gravel	Devenian Devenian
	GFCD	Glaciofluvial Ice Contact Deposits Devenian	Sand and Gravel	Devenian Devenian
	PEAT	Peat	Peat (Unidentified Deposits Coding Scheme)	Quaternary - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	CPB	Chester Pebble Beds Formation	Sandstone	Early Triassic Early Triassic
	MM	Manchester Marls Formation	Mudstone	Late Permian - Late Permian
	CS	Collyhurst Sandstone Formation	Sandstone	Cisuralian Cisuralian
	PUCM	Pennine Upper Coal Measures Formation	Mudstone Siltstone and Sandstone	Westphalian D Bolsovan
	PMCM	Pennine Middle Coal Measures Formation	Mudstone Siltstone and Sandstone	Bolsovan - Duckmanian
	ETM	Etruria Formation	Sandstone and Mudstone	Westphalian Westphalian
		Faults		
		Rock Segments		

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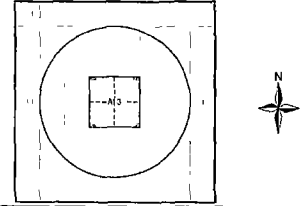
Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps. The various geological layers - artificial and landscape deposits, superficial geology and solid (bedrock) geology are displayed in separate maps but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	688
Map Name:	Manchester
Map Date:	2011
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landscape:	Available
Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice A



Order Details

Order Number:	123067250_1_1
Customer Reference:	001SUMM110
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Site Area (Ha):	0.04
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Site Details

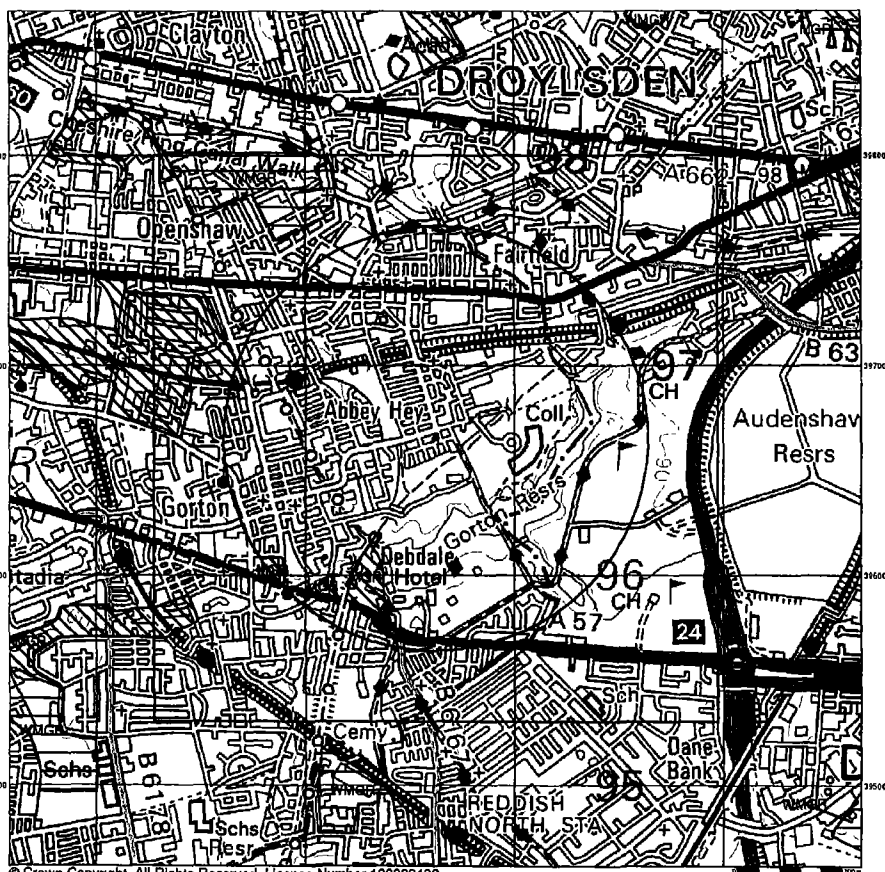
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Artificial Ground and Landslip

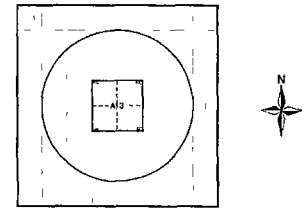
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslides. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details

Order Number: 123067250_1_1
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Site Details

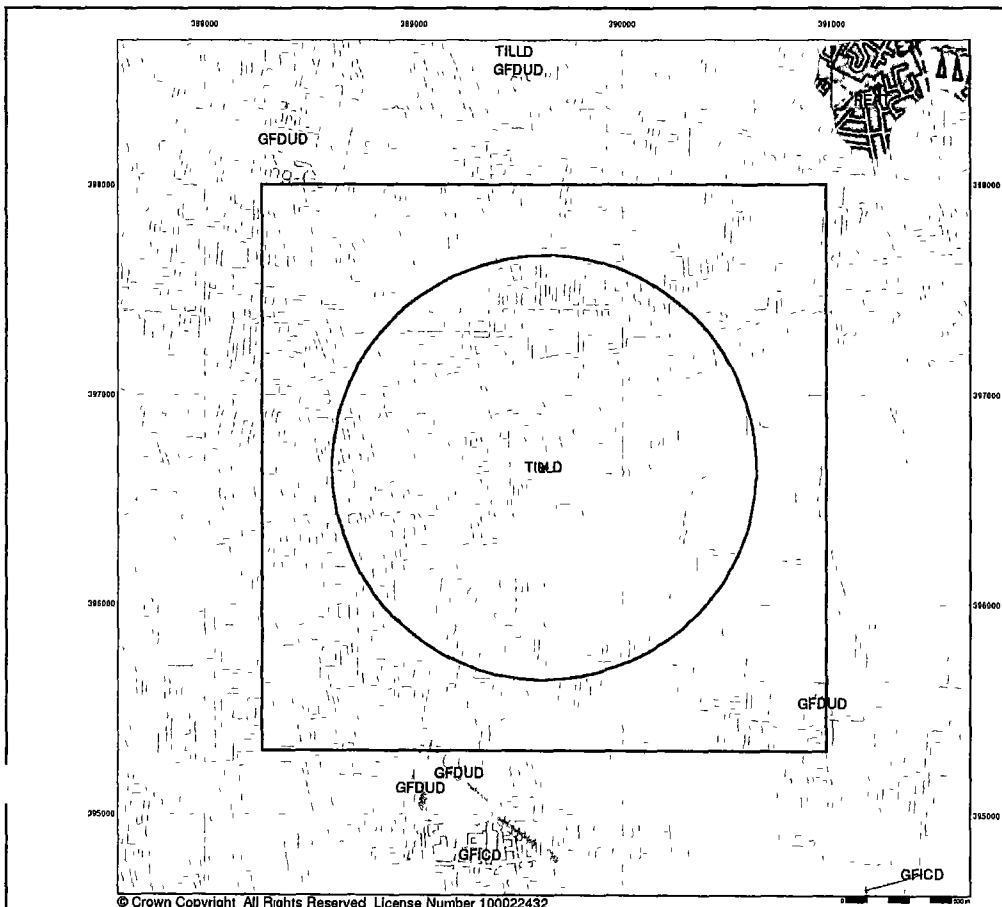
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Page 2 of 5



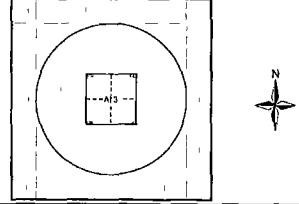
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Superficial Geology
Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time: the Quaternary which extends back about 1.8 million years from the present.
They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and in place. Other superficial strata may be held in the Mass Movement dataset where they have been moved or in the Artificial Ground dataset where they are of man-made origin.
Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay and onshore they form relatively thin often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details
Order Number: 123067250_1_1
Customer Reference: 0015UKMFT10
National Grid Reference: 389620 396850
Site: A
Site Area (Ha): 0.04
Search Buffer (m): 1000
Site Details
45 Hamp Street, MANCHESTER, M18 8RN



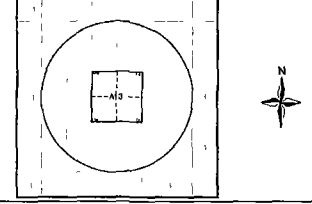
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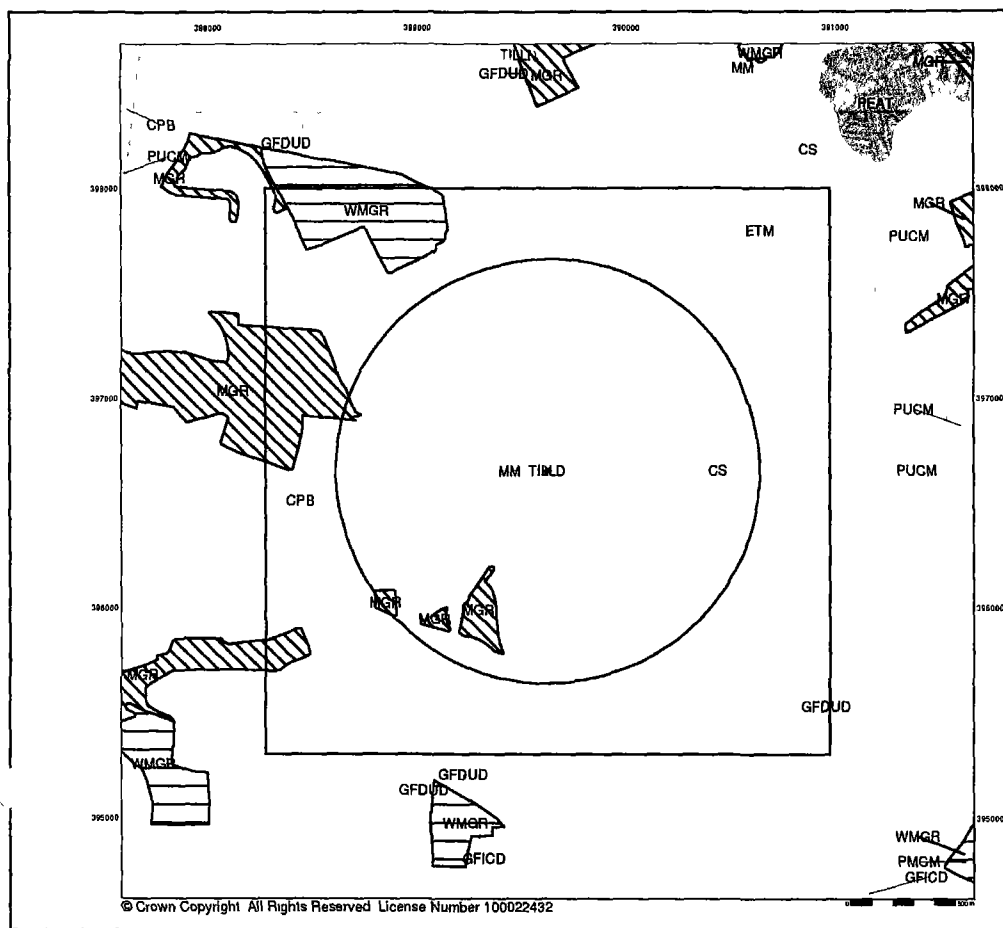
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Bedrock and Faults
 Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere - whether exposed at the surface in outcrops or concealed beneath superficial deposits of water.
 The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago - or older - up to the relatively young Pliocene - 1.8 million years ago.
 The bedrock geology includes many lithologies - often classified into three types based on origin: igneous, metamorphic and sedimentary.
 The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust) and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets - for example, coal seams are part of the bedrock sequence; most faults and mineral veins primarily affect the bedrock but cut across the strata and post-date its deposition.

Bedrock and Faults Map - Slice A



Order Details
 Order Number: 123067250_1_1
 Customer Reference: 001SUMM110
 National Grid Reference: 389620 386650
 Slice: A
 Site Area (Ha): 0.04
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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined Surface Geology map

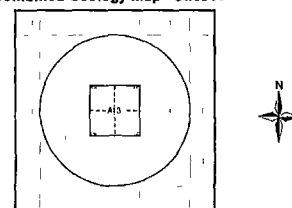
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

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Keyworth
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NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details

Order Number:	123067250_1_1
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Search Buffer (m):	1000

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