Peel NRE Limited

Import of materials for the capping of Land at Port Salford

Environmental Setting and Site Design Report

Job No 193237

January 2022

Environmental Consultants

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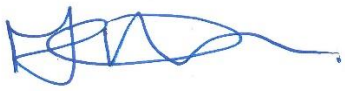

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APPENDICES

1.0 SITE DETAILS AND ENVIRONMENTAL CONTEXT

Site land use and other application details

1.1 Salford Port is located immediately south of Liverpool Road (A57), in Eccles M30 7RX. The site is approximately 9.6 km west of Manchester city centre, and is centred at National Grid Reference SJ 74457 96754. The site location is shown in drawing 193237/D/001. To note, there is an existing Environmental Permit (EPR/JB3308GN) active for an Aggregate Recycling Facility, operated by the same Operator. This facility is part of the wider sustainable approach in construction of Port Salford.

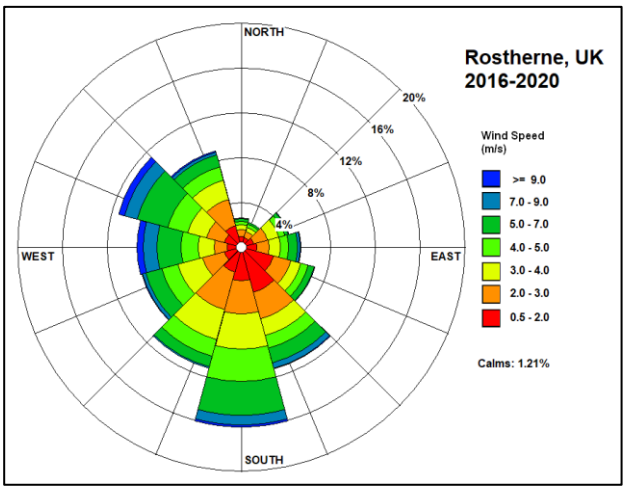
1.2 Directly to the north of the site, on the opposite side of the A57, is the Manchester City Airport. There are commercial and industrial units to the north west, and a Barnly Farm Dining and Carvery and storage yard to the north east. The nearest residential properties are approximately 50 m north west of the site, and 185 m north-east of the site (on Trident Road). AJ Bell Stadium are located east of the site, Great Bear/Culina warehouses to the west of the site. The establishments to the west are within land owned by Peel Holdings Ltd. The Salteye Brook enters the site from the north east and exits via the Manchester Ship Canal (MSC) located approximately 120 m south of the site. A public right of way (PRoW) runs along the A57 north of the site. These are considered the most sensitive receptors, due to their nature and distance from the site

1.3 The site is located within the floodplain of the Salteye Brook and has been subject to complex historical development including land raising, landfill and the diversion of the Brook. The historic mapping shows that land-raising was commenced in the late 1890s/early 1900s with little detail to the source or quantity of material. Prior to this the site was primarily agricultural with some small areas of woodlands. There is anecdotal evidence which suggests that there was deposition of materials from nearby construction, dredgings from the MSC and infilled land. Victoria Tip is known to have received inert industrial and commercial wastes between 1986 to 1994, located north of the Salteye Brook. An unknown tip is recorded to have occupied the south-western area, known as Boysnope Wharf, but no details regarding the infill dates or type of material is available. The historic development of the wider area is shown in drawing no. MMD-293621-G-DR-00-XX-14021 of the Mott MacDonald 2014 Ground Investigation Report, which also provides more in-depth information about the site's historical development. The report is attached in Appendix C.

1.4 Detailed information about the site's sensitive receptors, environmental setting and cultural and natural heritage are shown in drawings 193237/D/002, 193237/D/003A 193237/D/003B.

- **Air Quality / Climate**

1.5 Meteorological wind data, for five years, have been acquired. The wind data has been taken from the Met Office station in Rostherne, which is located circa < 15 km south east of the site. The prevailing wind direction is from the south quadrant.



1.6 The proposed site is not located within an existing Air Quality Management Area although sections of the A57 Liverpool Road, to the north of the site, have been designated as part of the Greater Manchester AQMA for the potential exceedance of the annual mean nitrogen dioxide (NO_2) air quality objective.

Geology and Hydrogeology

1.7 The recorded superficial geology is of Alluvium, comprised of clay, silt, sand and gravel for most of the site. A small section of the north eastern corner of the site shows Glaciofluvial Sheet Deposits

of sand and gravel. The underlying bedrock geology is Wilmslow Sandstone Formation across the site.

1.8 There are a 23 historic British Geological Survey (BGS) boreholes within the site. Five of these boreholes, predominantly in the west of the site, are confidential. A borehole in the south of the site, just west of the Salteye Brook (SJ79NW259) shows 0.5 m of Made Ground underlain by natural Alluvium and Sandstone deposits. The boreholes in the north east between the Salteye Brook and the A57 show Made Ground deposits between 2.50 to 8.90 – these boreholes are within the former Victoria Tip.

1.9 The bedrock geology is designated as a Principal Aquifer. The superficial geology is classified as a Secondary 'A' Aquifer

1.10 The site is not located within a Groundwater Source Protection Zone, and there are none within 1 km of the site.

1.11 There are no active surface water abstractions within the site boundary or within 1 km of the site. The nearest expired surface water abstraction is registered to Londland Ltd, on site, south east of the Salteye Brook. The abstraction rate is shown as 818 m^3 per day or 40914 m^3 per year for coal washing. There is an approved on site abstraction borehole (NW/069/0007/016) within the site. This is connected with the aggregate recycling facility. Outside of the site, there are no groundwater abstractions registered within 1 km of the site.

1.12 There are two registered discharge consents at the site. The first discharge consent is registered to Manchester City Council at the pumping station, for the discharge of storm/emergency overflow into the Manchester Ship Canal. This consent was effective as of 4th October 1994, no end date has been provided. The second discharge consent is registered to Peel Holdings for the discharge of sewage (final/treated) into the Boyle Brook. The consent was effective as of 23rd January 1996, and no end dete has been provided. Surface water from the aggregate recycling facility is also permitted under its Environmental Permit.

1.13 The nearest two discharge consents are located circa 80 m south west and 80 m south east of the site, registered to The Great Bear Distribution Limited and Manchester Ship Canal Co Ltd, respectively, for the discharge of sewage (final/treated) into the Manchester Ship Canal. There are further discharge consents within 1 km of the site.

Hydrology

1.14 The surface water runoff from the site drains into the Salteye Brook and into the Manchester Shipping Canal to the south. There will also be passive throughflow of water towards the Brook through the underlying Made Ground.

1.15 The Salteye Brook is a surface water feature which enters the site in the north eastern corner, and exists along the central/southern boundary into the MSC. Barton Locks are located adjacent to where the Salteye Brook and MSC meet. The MSC is circa 150 m south of the site and is oriented west to east. The Boyle Brook is an off-site water feature 255 m north west of the site which also flows into the MSC.

1.16 Most of the site sits within Flood Zone 1. A small section of the north, and parts of the site near to and east of the Salteye Brook are within Flood Zone 2. The Salteye Brook is within Flood Zone 3. The flood zones are shown in drawings 193237/D/003A.

1.17 The nearest pollution incident was a Category 3 Minor Incident recorded on the 26th May 1994, 120 m north of site. This involved crude sewage discharging into the Boyle Brook from a private sewerage.

Historic Land Use and Man-made Subsurface Pathways

1.18 The historic mapping shows that land-raising was commenced in the late 1890s/early 1900s with little detail to the source or quantity of material. Prior to this the site was primarily agricultural with some small areas of woodlands. There is anecdotal evidence which suggests that there was

deposition of materials from nearby construction, dredgings from the MSC. The site contained a small sewage works between 1971 to 1992 in the north, and part of the site used for landfill ('Victoria Tip') between 1986 to 1994. Mineral workings are shown in the 1909 historic maps and are no longer shown by the 1929/1930 maps. A mineral railway is recorded south of the site, alongside the Manchester Ship Canal.

1.19 The landfill is registered to 'Ollerton Developments Limited', having operated between 1986 to 1994. The landfill was known as 'Victoria Tip' and accepted 75,000 and 250,000 tonnes per year of inert, industrial and commercial waste. The landfill was prohibited from accepting waste which would form polluting leachate, but it did accept metals. A historic landfill known as 'The Fox Glen' is registered circa 135 m north east of the site. It is unknown as to what type of waste was accepted, or the time period for which it was active.

1.20 Surface water drainage is not shown on the plan, but due to the topography it is likely that the site drains toward the Salteye Brook and Manchester Shipping Canal. The historical land use shows that the east of the site was subject to anecdotal infill of dredged clay and silt from the construction of the MSC, and incorporates a network of land drains, draining into the Boyle Brook.

Noise

1.21 The surrounding area is predominantly of lower sensitivity as the surrounding receptors are predominantly commercial and industrial. The nearest sensitive receptors susceptible to noise emissions will be the residential properties circa 50 m north west and 185 m north east of the site. The ambient noise levels are expected to be high during the day due to the presence of the A57 and the airport.

1.22 The noise assessment undertaken in 2019 during the permit application for the Aggregate Recycling Facility. The LAeq ranged from 47 to 79 dB with an average of 65 dB, whereas the LA90 ranged from 45 to 75 dB, with an average of 57 dB during the normal operating hours.

Environmental Setting & Cultural and Natural Heritage

1.23 There are no SACs, SPAs, NNR, Ramsar or SSSI's within 2 km of the site. The nearest are the Astley & Beford Mosses (SAC) and Holcroft Mosses (SSSI), both of which are circa 4 km north west of the site.

1.24 The nearest LNR's are Worsley Woods and Trafford Ecology Park circa 3.5 m north east and 3.8 km east of the site, respectively. There are no further LNRs within 2 km of the site.

1.25 There are no European Protected Species within the site and wider area.

1.26 The nearest Priority Habitat is in the Davyhulme Millenium Nature Reserve (lowland ferns and deciduous woodlands), circa 200 m south of the site on the opposite side of the MSC.

1.27 There are 3 Grade II listed buildings located beyond the A57. These are situated 72 m, 96 m and 215 m north of the site. There are no further statutory or non-statutory historic buildings within 1 km of the site.

1.28 There are no scheduled Monuments within 1 km of the site.

1.29 The nearest school is the Barton Moss Community Primary School, circa 1.2 km north-east of the site, and there are no hospitals within 1 km of the site. A detailed plan of sensitive receptors is shown in drawing 193237/D/002.

Previous Reports

1.30 There have been numerous site investigations at the site. The majority of the information is captured in 2014 Mott McDonald Ground Investigation Report. This is shown in Appendix C. Further, more recent investigation has been undertaken in 2019 and 2020 and is included within the Controlled Water Risk Assessment.

2.0 SOURCE PATHWAY LINKAGES AND CONCEPTUAL MODEL

2.1 Human Health / Loss of Amenity – Noise and Vibration. The works involve the importation and placement of suitable material. Plant involved in the operation will include tipper lorries, bull dozers, and excavators. The nearest sensitive receptors to noise and vibration are the residential properties 50 m north west and 185 m north east of the site; and users of the pathway along the A57. Subject to the working controls, which are set out in the Operational Plan (193237/OWP), the site is expected to have a low residual risk of noise. Only standard construction plant or machinery will be operated. There will be no vibratory machinery. No activities will take place outside of normal working hours. The noise management plan (193237/NMP) sets out the working controls for the site activities. The activities are a temporary construction development and are not permanent.

2.2 Human Health / Natural Heritage/ Loss of Amenity – Dust and mud. The works involve the importation and placement of suitable material, which will involve tipper lorries, dozers and excavators. There is no processing at the site. The nearest sensitive receptors are the workers and visitors at neighbouring industrial and commercial estates, and at the airport, the residential properties 50 m north west, 185 m north east of the site, and users of the pathway along the A57. In the very unlikely event, road users on A57 might also be affected by dust emissions. During the works there will an internal haul route and wheel wash at the site. Without suitable working controls the operation may potentially cause fugitive emissions and mud on the road and a loss of amenity and potential nuisance. The dust emissions management plan (193237/DEMP) sets out the working controls for the site activities.

2.3 Cultural Heritage and Natural Heritage – Direct and Indirect impact: Given the distance and type of operations, there is a very low risk of direct or indirect impact on the Listed Structures or any Schedule Ancient Monuments. There are no LNRs, NNRs, SSSIs, SPAs, SACs or Ramsar sites within 2 km of the site. The nearest Priority Habitat is located 160 m south of the site on the opposite side of the MSC. There are no records of European Protected Species within 500 m of the site.

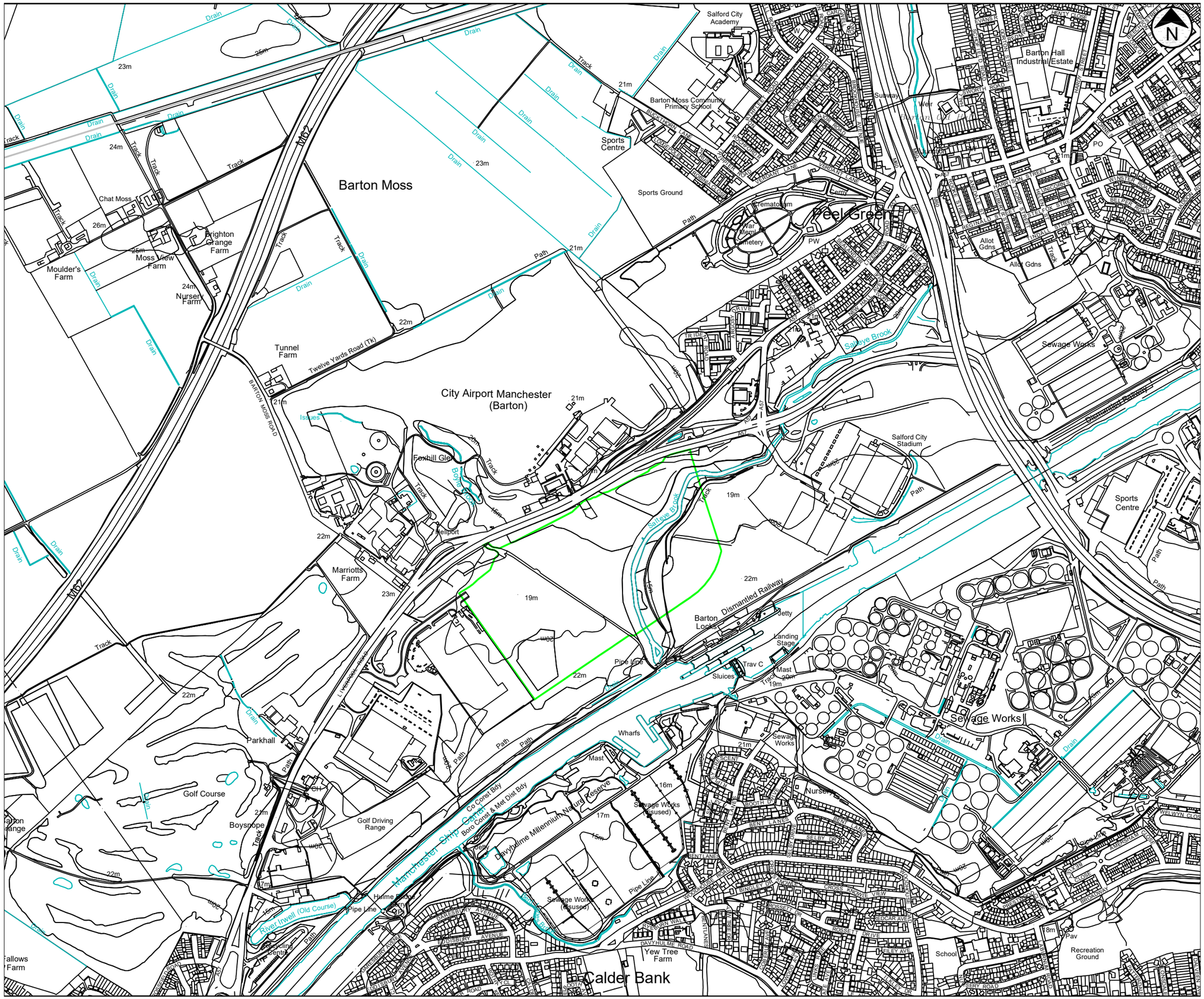
2.4 Controlled Waters – Pollution: The import of potentially contaminated materials or spillages of oils and hydrocarbons creates a risk of potential pollutants entering the surface water. There are no specific pollution control measures required. The implementation of the Importation Protocol (193237/IP) will ensure only acceptable fill material is imported. Due to the proposed permitted waste streams to be imported and importation controls to be applied, it is assessed that the fill material will pose a low risk to the controlled water environment. The importation criteria use the appropriate human health criteria and leachable criteria (in accordance with the site-specific Controlled Water Risk Assessment).

2.5 Ground gas – The final land use is not at risk of the impacts of ground gas. Given the development will be constructed with materials with a low organic content, the risk posed by the generation of ground gases is not considered significant and monitoring is not proposed. Gas mitigation for future user will be assessed and mitigated by the follow-on Contractor.

2.6 Stability - The final land use is not at risk of the impacts of stability. Given the accepted waste types are limited to mineral / aggregate only, the risk of instability is not considered significant. The works will be in accordance with an approved design. The Operator will use well known earthworks compaction techniques to ensure material is suitably compacted during construction. The increased load from circa 1.5 - 2 m of capping is approximately 30 kN/m^2 based on a density of 2 g/cm^3. Based on a worst case of 17 m of soft compressible soils with an estimated Mv of 5 kPa gives an estimated settlement of 60 mm. Settlements of this magnitude are unlikely to affect the groundwater or gas regime. Future development will be pilled transferring load to the underlying glacial Till and Sandstone and have no significant effect on the softer made ground and alluvium. No zones of poor recovery were recorded during recent ground investigations which could indicate potential for future collapse settlement. Given the age of the waste, the groundwater levels within the waste and the open nature of the site allowing infiltration of surface water it is considered that inundation settlement is likely to be negligible.

2.7 The H1 Risk Assessment is attached in Appendix A. A Site Condition report detailing the current baseline conditions is submitted with the application.

DRAWINGS



KEY

Permit Boundary

Notes

The site is centered at NGR SJ 74457 96754

Rev.	Details	Drawn / Chkd.	Date

Project

193237
Port Salford, Units 2-4

Title

Site Location Plan

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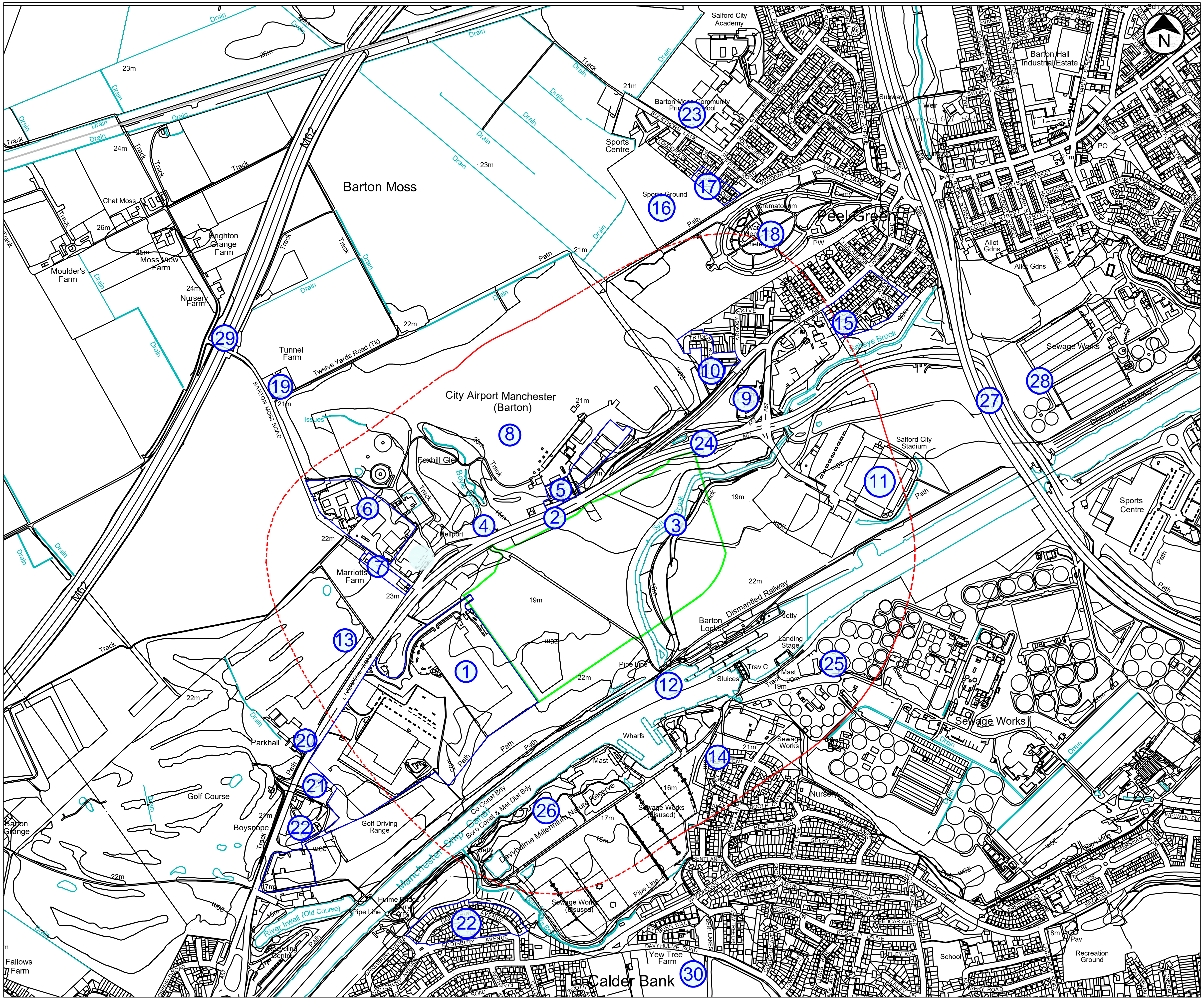

Key:

Permit Boundary

500 m buffer from site boundary

1. Great Bear / Culina Warehouses
2. Residential properties along Liverpool Road
3. Salteye Brook
4. Boyle Brook
5. Flying Schools/ Airport Garage
6. Industrial estate off A57
7. Residential dwellings along Barton Moss Road
8. Manchester City Airport (Barton)
9. Barley Farm Dining and Carvery
10. Residential dwellings along Trident Road
11. AJ Bell Stadium
12. Manchester Ship Canal
13. Golf Course
14. Dwellings along Ripley Crescent
15. Dwellings along New Hall Avenue
16. Sports Ground
17. Dwellings along Robinia Close
18. Peel Green Cemetery and War Memorial
19. Tunnel Farm
20. Residential Dwellings off of Liverpool Road
21. The Club House Restaurant
22. Residential dwellings along Daresbury Avenue
23. Barton Moss Primary School
24. A57 public highway
25. Sewage Works
26. Local Nature Reserve
27. M60 public highway
28. Sewage Works
29. M62 public highway
30. Davyhulme Park Golf Club

Rev.	Details	Drawn / Chkd.	Date

Project

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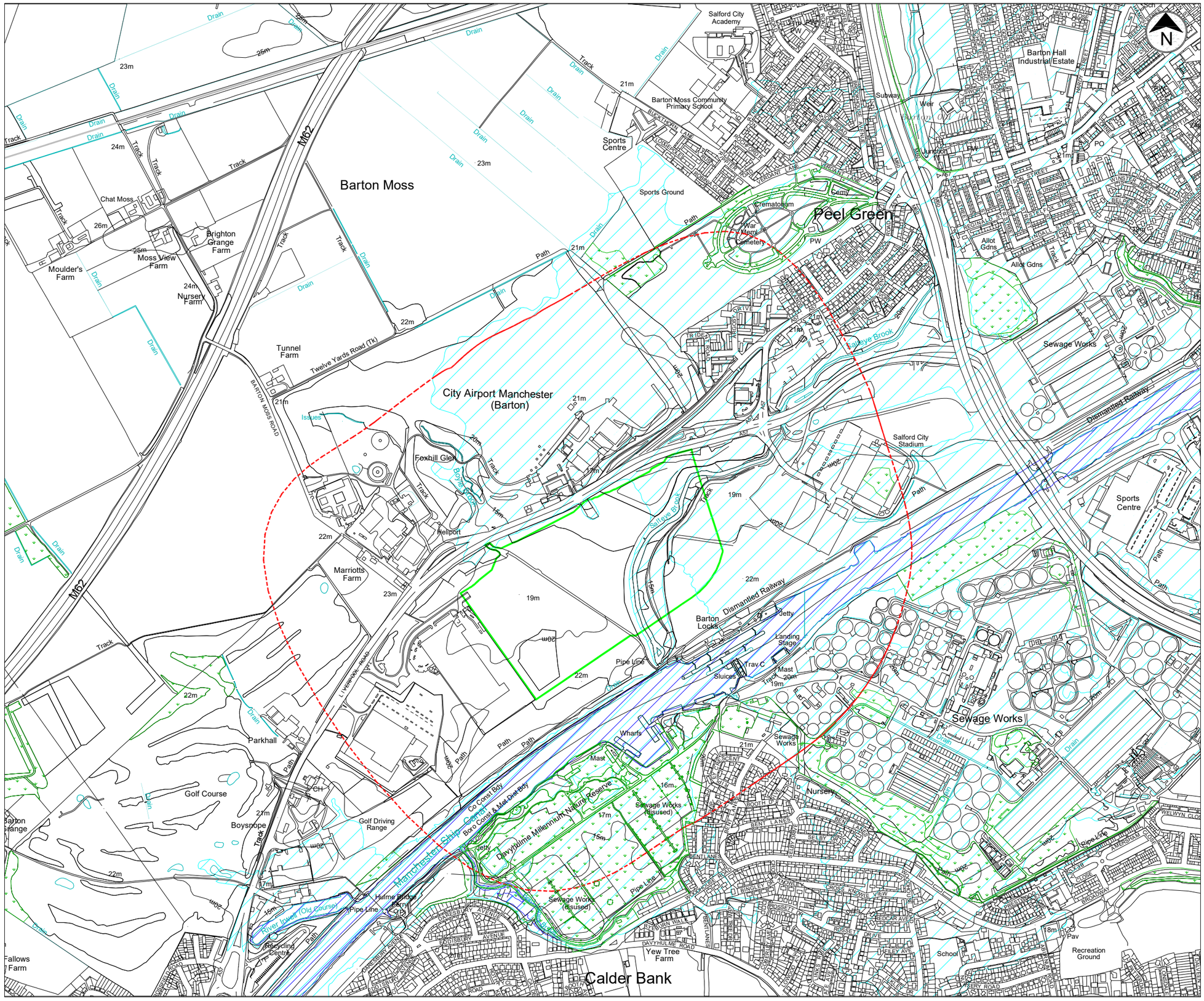

KEY

- Permit Boundary
- 500m buffer from site boundary
- Surface Water Feature
- Priority Habitat
- Flood Zone 2
- Flood Zone 3

Rev.	Details	Drawn / Chkd.	Date

Project

193237
Port Salford, Units 2-4

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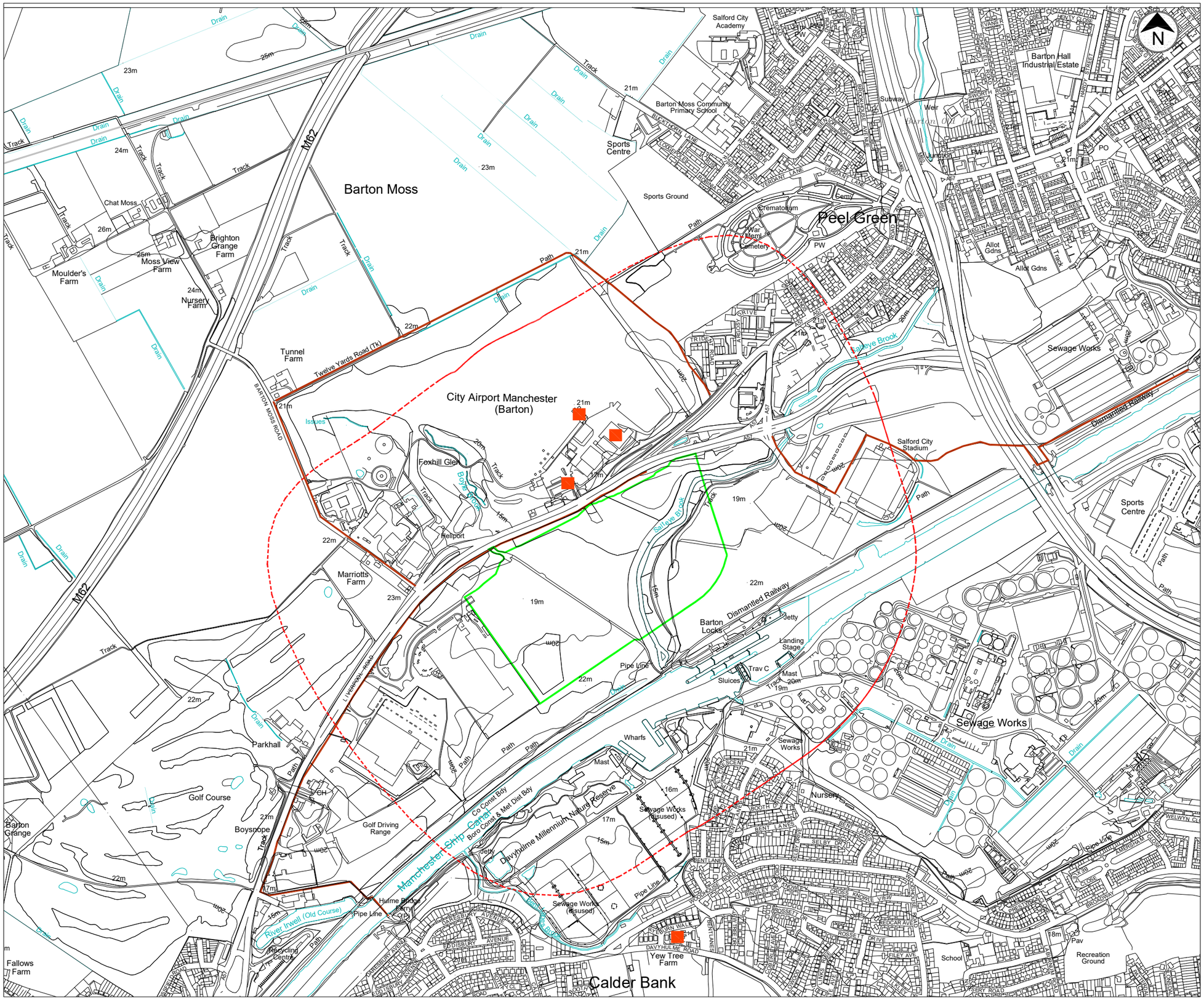

KEY

- Permit Boundary
- 500m buffer from site boundary
- Designated Historic Buildings
- Public Right of Way (PRoW)

Notes
Public Right of Ways have only been annotated within 500 m of the site.

Rev.	Details	Drawn / Chkd.	Date

Project
193237
Port Salford, Units 2-4

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len

Track

Boyle Brook

17m

iport

N

Salteye Brook

Track

Unit 4
Development

Unit 3
Development

Wheelwash

Site Office

Q

Unit 2
Development

Barton
Locks

Disman

Pipe Line

Drain

Sluices

T

Key:

- Permit Boundary
- Haul Route
- Q Quarantine Area

Rev.	Details	Drawn / Chkd.	Date

Project

193237
Port Salford, Units 2-4

Title

Site Layout Plan

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Appendix A
H1 Risk Assessment

H1 Risk Assessment (H1)

Document Ref: 193237/H1ERA

Table 1. Assessment of odour risks

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
Odour from imported waste. Fugitive emissions from: • Recovery (placement) activities • Storage of imported and recovered material	Construction workers Residential properties to the north west and south Industrial/commercial premises to the north, east and west. Users of the Public Right of Way.	Nuisance and loss of amenity value	Atmospheric (fugitive). Air transport then inhalation.	Mild	Unlikely	Very Low	Imported materials will have a low odour potential (no municipal or waste with high organic content will be imported onto the site).	Controls on types of materials accepted. Recording of any complaints and implementation of controls as set out in the Operational Plan (193237/OP).	Very Low

H1 Risk Assessment (H1)

Table 2. Assessment of noise and vibration risks

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
Noise and vibration emissions from haulage (road deliveries) and placement of waste.	Construction workers Residential properties to the north west and south Industrial/commercial premises to the north, east and west. Users of the Public Right of Way. Flora/ fauna	Levels of noise that cause loss of amenity and nuisance to users and residents in the locale.	Airborne	Mild	Unlikely	Low	Adherence to agreed site operation hours. Only standard construction plant or machinery will be operated (no cooling equipment or fans will be used). No activities will take place at night. The activities are related to construction of the platform for Port Salford and it is not a long term operation. Vibration is not an issue at the site. The application includes a noise assessment for the site. However, assessment is not necessary given that it's temporary construction works.	All operatives inducted on the requirement to reduce noise emissions. All plant and vehicles will meet current guidance and will be maintained in line with manufacturer's requirements. Recording of any complaints and implementation of controls. Controls as set out in the Noise Management Plan (193237/NMP).	Low

H1 Risk Assessment (H1)

Table 3. Assessment of fugitive emissions (other than odour)

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
To Air									
Dust from vehicle operations from external haul roads. Dust from operations and handling of soil. Dust from importation and placement of soils.	Construction workers Residential properties to the north west and south Industrial/commercial premises to the north, east and west. Users of the Public Right of Way. Vehicle users along the A57 Salteye Brook and the Manchester Shipping Canal (MSC)	Harm to human health, respiratory irritation and illness.	Air then inhalation.	Moderate	Possible	Medium	Permitted wastes include wastes with small particle sizes and potential to generate dust. Haulage, importation, and recovery (placement) of soils and waste have the potential to generate dusts from off-site movements during prolonged dry periods.	Dust suppression controls as per the Dust Emissions Management Plan (193237/DEMP).	Low
		Nuisance – deposit on cars, homes, clothing etc.	Air then deposition.	Mild	Possible	Low			
		Potential irritant, loss of habitat and damage to species.	Air then deposition in ditches / terrestrial habitats.	Mild	Possible	Low			

H1 Risk Assessment (H1)

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
To Controlled Waters									
Run-off from site surfaces or spillages.	Drainage surrounding the site (drainage to surface water). Salteye Brook and Manchester Shipping Canal Made Ground, Wilmslow Sandstone Formation & Glaciofluvial Sheet Deposits.	Passive leaching to ground, from contamination or spillages on surface and directly entering the drainage system.	Land and drainage systems	Moderate	Possible	Low	Waste material is being imported to site and without control may contain leachable contaminants. Spillages of oils on to surface could enter the drainage network causing pollution. Temporary surface water management will be undertaken in line with best construction practices during development.	Controls as set out in the OP. Controls on types of materials accepted. Only acceptable fill material imported to the site. No oils or fuel to be stored on the site. Fuel will be delivered to mobile plant by tanker. Mobile plant will be filled in a designated area and spill kits will be available in mobile plant units. Site operatives will be inducted in the use of spill kits.	Low
Run-off and infiltration from site surfaces or spillages (haulage and placement).	Drainage surrounding the site (drainage to surface water). Salteye Brook and Manchester Shipping Canal Made Ground, Wilmslow Sandstone Formation & Glaciofluvial Sheet Deposits.	Pollution to aquifer. Pollution due to sediment entrainment into waters, loss of habitat and damage to species.	Land infiltration through soils.	Moderate	Possible	Medium	Permitted waste types do not include liquids, leachates or sludges and are unlikely to contaminate groundwater. The permanent surface water drainage scheme will be undertaken by a follow-on Contractor. The outline design of the site will be covered in industrial units and hard impermeable surfacing therefore the risk of surface water pollution is considered negligible.	Only acceptable fill material will be imported on to the site. Hazardous wastes or wastes in liquid form are not permitted. Wastes will be imported in line with the Importation Protocol (underpinned by the HRA).	Low

H1 Risk Assessment (H1)

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
Fugitive emission of waste through entrainment in flood waters.	Local human population (as per odour). Local wildlife and habitats Drainage surrounding the site (drainage to surface water). Salteye Brook and MSC	Nuisance, health implications and pollution/ contamination.	Flood waters	Moderate	Unlikely	Low	The majority of the site lies within Flood Zone 1 and 2 and thus at a very low risk of fluvial flooding. Part of the construction of platform is the re-alignment of the River. This will be undertaken in accordance with the Planning Permission and associated documents.	Controls on types of materials accepted. Only acceptable engineering fill material will be imported on to the site. Permitted wastes/materials are at low risk from entrainment.	Very Low

H1 Risk Assessment (H1)

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
Mud and Litter									
Litter from storage areas and mud from site operation.	Local human population (as per odour). Local flora and fauna. Drainage network.	Nuisance, loss of amenity and reduced safety. Mud on road. Pollution to watercourses.	Air, land, mud on vehicles, runoff to ground.	Moderate	Possible	Medium	Permitted wastes have low litter potential. No municipal wastes accepted. Site will be accessed from a hard-standing haul road.	Controls as set out in the OP. Haulage routes will be inspected and maintained to keep free of mud. Road sweepers and scrapers will be operated on external and internal roads, where necessary. All visible litter on site boundaries will be cleared as soon as practicable. Inspection and corrective action regime will be undertaken in line with site management system.	Low
Pest and Vermin									
Storage of waste attracting pests and vermin.	Local human population (as per odour).	Can cause increased populations and infestations of rats, mice, flies and other vermin. Result is harm to health, loss of amenity and nuisance.	Air transport and overland.	Mild	Unlikely	Very Low	Permitted wastes have low organic content. No municipal waste. Very low potential to attract pests and vermin.	Management and control on wastes accepted. Inspection of site by Site Manager on frequent basis. Implementation of controls as required.	Very Low

H1 Risk Assessment (H1)

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
Ecological									
Damage to ecology (flora and fauna).	No LNR, NNR, SAC, SPA or RAMSAR sites within 1 km of the site. Priority habitat circa 100 m east of the site.	Destruction and/or damage to flora / fauna. Disturbance of invasive species leading to human health exposure.	Direct contact, over land and airborne.	Moderate	Possible	High	The site is a former landfill and industrial area which has been worked during construction of Unit 1 and during wider infrastructure development. The ecological risk is very low.	All control measures and mitigation will be in accordance with the OP.	Low

H1 Risk Assessment (H1)

Table 4. Accident risk assessment and management

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
Fire (accidental, arson) and smoke.	Local human population (as per odour) and environment.	Damage and loss of amenity, property, nuisance and carcinogenic particulates.	Direct contact, airborne.	Severe	Unlikely	Medium	No fire or burning on-site is permitted. Permitted wastes have low combustion potential.	No wastes will be burned on-site. Site will be secured at all times during development. Access controlled during operational hours. In event of fire, controls specified in site Accident Management Plan (AMP) and Fire Brigade notified, as necessary. Incidents recorded in the Site Diary.	Low
Spillage of fuels, oils or polluting material. Fugitive release of VOC from: • Storage activities	Soil, surface water and groundwater. Local population. Local flora and fauna.	Pollution and/or contamination	Land and drainage systems	Moderate	Unlikely	Low	Only small-scale storage of fuel and oils for plant and machinery. No hazardous or liquid wastes will be accepted on site.	Site procedures include Accident Management Plan (AMP) and spillage controls. Spill kits stored with tanks and plant, and in the site office.	Low
Spillage of waste or recovered material.	Human health (as per odour). Existing public highways access / egressing the site. Surface water drainage.	Loss of amenity, nuisance, pollution and / or contamination.	Land drain and air	Moderate	Unlikely	Low	Uncontrolled release could cause health or pollution issues. No hazardous or liquid wastes will be accepted on site.	All vehicles accessing the site will be sheeted or fully enclosed. Unloading and loading will be controlled at all times. The Accident Management Plan will incorporate spillage of waste from vehicles in the event of a Road Traffic Accident. Incidents recorded in the Site Diary.	Low

H1 Risk Assessment (H1)

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
Direct physical contact between humans and wastes, machinery and vehicles.	Human health (site operatives and local population).	Bodily harm.	Direct contact	Severe	Unlikely	Medium	Permitted wastes do not have potential to cause risk to human health (no hazardous materials). No public access during works.	Activities to be managed in accordance with site health and safety management system. Access to wastes to be restricted to trained and competent personnel.	Low
Instability of proposed earthworks design causing subsistence / damage	Surrounding area, fauna / flora, end users. Construction workers	Bodily harm. Pollution to surrounding land. Loss of amenity, nuisance, pollution and / or contamination.	Land	Severe	Unlikely	High	Permitted wastes will be cohesive mineral / aggregate material and the risk of instability is considered low. The proposed design will be approved with the local Authority through a planning permission.	Proposed design in accordance with industry guidance principles and the Importation Protocol. Given the accepted waste types are limited to mineral / aggregate only, the risk of instability is not considered significant.	Low

H1 Risk Assessment (H1)

Table 5. Assessment of ground gas risks

Hazard	Receptors	Harm	Pathway	Hazard Receptor Significance	Likelihood of Hazard Receptor Linkage	Magnitude	Justification	Risk Management	Residual Risk
Inhalation of ground gases generated by waste deposit beneath the proposed earthworks. Inhalation of ground gases generated by the inert soils from proposed earthworks. Inhalation of volatile vapours with elevated concentration of determinants. Explosive risk from biogas/ground gases.	On site land users (proposed recreational) Temporary construction staff.	Intoxication Explosion	Emissions from ground (through historical landfill waste and/or adjacent sand/gravels) to air.	Severe	Negligible	Very Low	The proposed import is of mineral wastes only. There are no organics to be imported. As such, no significant methane will be generated by the breakdown in the soils. Some CO_2 may develop within the imported fill due to microbial activity, but it will passively release from the soils and rapidly disperse. Any methane and CO_2 will passively release from the surface of the above ground deposit and not accumulate. The soils will not pose a risk to the industrial / commercial users of the site. Gas mitigation will be implemented by the follow-on Contractor.	Waste acceptance procedures to ensure material is of low organic content. Waste acceptance procedures will be in accordance with the Importation Protocol.	Very Low
	Off-site land users (residential properties, leisure center facilities).	Intoxication Explosion	Emissions from ground building up within buildings	Severe	Negligible	Low	As above. The deposit is located above ground. Any gas generation is very unlikely. In the event it did migrate from the soils it could laterally or vertically emerge from the ground and dissipate. There is no direct pathway for it to enter nearby properties and enclosures. Hence, there is no viable pathway and risk is negligible.	As above.	Very Low

Name: **Peel Environmental Limited**
Catchment: **North West England river basin district**

Potential changing climate variable	Impact	Likelihood	Severity	Risk (Likelihood x Severity)	Mitigation (what will you do to mitigate this risk)	Likelihood (after mitigation)	Severity (after mitigation)	Residual risk
1. Summer daily maximum temperature may be around 6°C higher compared to average summer temperatures now.	• Workplace exposure causing damage to workforce.	2	8	16	• The Operator will ensure the appropriate PPE is worn for all workers; • Updates to internal PPE and working procedures will be undertaken yearly and incorporate any gradual changes including climate changes.	1	1	1
	• Increase in dust potential due to drier weather	3	3	9	• All works will be undertaken in accordance with the Dust Management Plan. Water provision and controls will be reviewed yearly to ensure provision is safeguarded and controls become more frequent (dependent on annual climate review).	1	1	1
	• Decrease in surface and groundwater levels causing lower water provision	3	3	9	• Water provision and controls will be reviewed yearly to ensure provision is safeguarded and controls become more frequent (dependent on annual climate review). • If groundwater abstraction borehole is deemed necessary, a separate permit application will be submitted. • No surface water abstraction necessary.	3	1	3

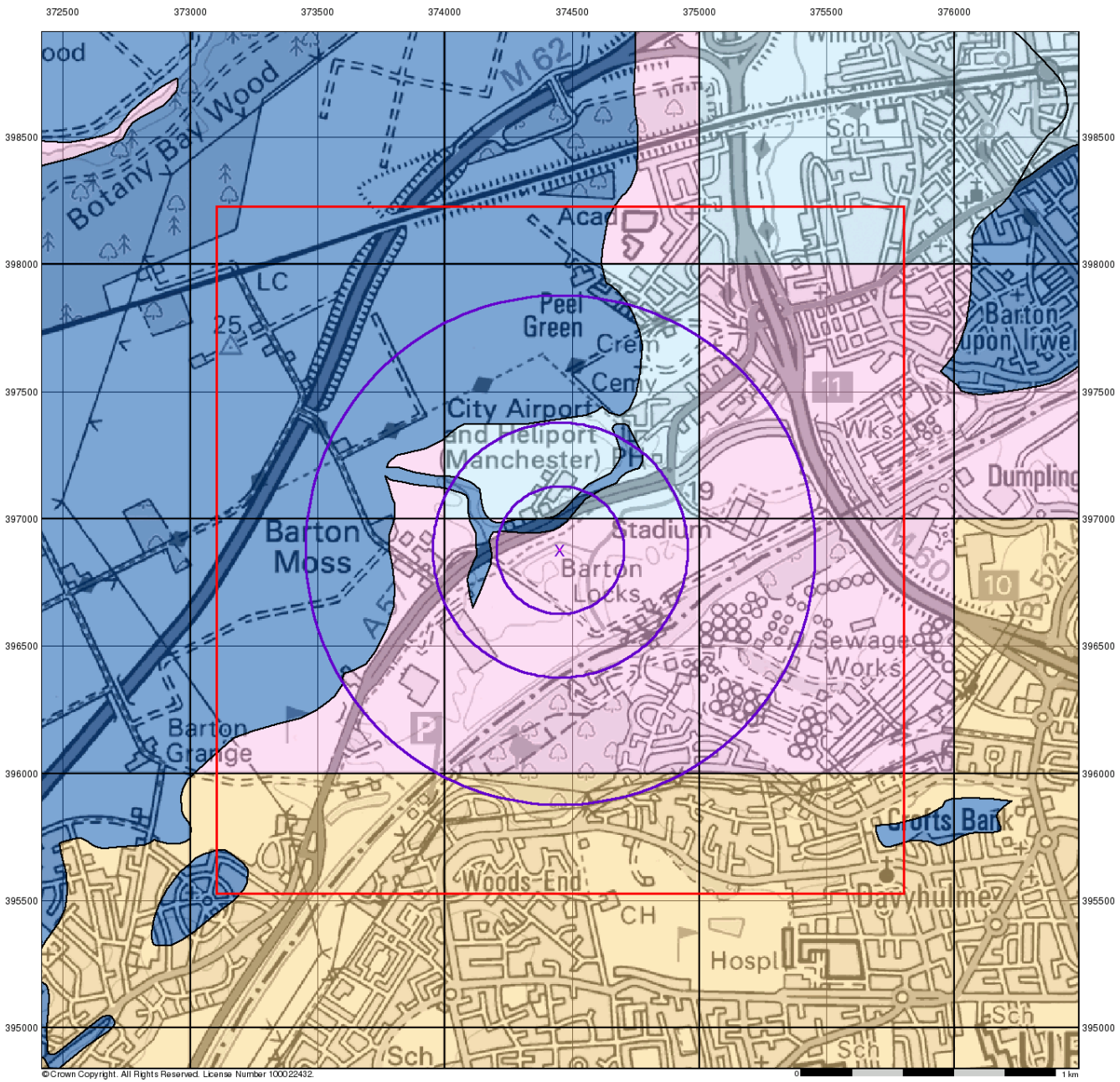
Potential changing climate variable	Impact	Likelihood	Severity	Risk (Likelihood x Severity)	Mitigation (what will you do to mitigate this risk)	Likelihood (after mitigation)	Severity (after mitigation)	Residual risk
2. Winter daily maximum temperature could be 4°C more than the current average.	• Increase in dust potential due to drier weather	3	3	9	• All works will be undertaken in accordance with the Dust Management Plan. Water provision and controls will be reviewed yearly to ensure provision is safeguarded and controls become more frequent (dependent on annual climate review).	1	1	1
3. The biggest rainfall events are up to 20% more intense than current extremes (peak rainfall intensity) *.	• Overloading of surface water system.	1	2	2	• The proposed drainage system is able to include rainfall volume including 40 % climate change. • The site is situated 4 m above the 1:1000 year flood event.	N/A	N/A	N/A
	• Mud on road nuisance	1	2	2	• The proposed drainage system is able to include rainfall volume including 40 % climate change. • Controls for mud will be in accordance with Dust Management Plan and Operational Plan.	N/A	N/A	N/A
	• Pollution caused from mobilisation of silts.	1	2	2	• The proposed drainage system is able to include rainfall volume including 40 % climate change. • The site is situated 4 m above the 1:1000 year flood event.	N/A	N/A	N/A
4. Average winter rainfall may increase by 29% on today's averages.	• Overloading of surface water system.	1	2	2	• The proposed drainage system is able to include rainfall volume including 40% climate change. • The site is situated 4 m above the 1:1000 year flood event.	N/A	N/A	N/A
	• Mud on road nuisance	1	2	2	• The proposed drainage system is able to include rainfall volume including 40% climate change. • The site is situated 4 m above the 1:1000 year flood event.	N/A	N/A	N/A

Potential changing climate variable	Impact	Likelihood	Severity	Risk (Likelihood x Severity)	Mitigation (what will you do to mitigate this risk)	Likelihood (after mitigation)	Severity (after mitigation)	Residual risk
	• Pollution caused from mobilisation of silts.	1	2	2	• The proposed drainage system is able to include rainfall volume including 40% climate change. • The site is situated 4 m above the 1:1000 year flood event.	N/A	N/A	N/A
5. Sea level could be as much as 0.6m higher compared to today's level *.	• Overloading of surface water system.	1	1	1	• The proposed drainage system is able to include rainfall volume including 40% climate change. • The site is situated 4 m above the 1:1000 year flood event. • The site is not directly influenced by rises in sea level as it is influenced by the Manchester Shipping Canal.	N/A	N/A	N/A
	• Mud on road nuisance	1	1	1	• The proposed drainage system is able to include rainfall volume including 40% climate change. • The site is situated 4 m above the 1:1000 year flood event. • The site is not directly influenced by rises in sea level as it is influenced by the Manchester Shipping Canal.	N/A	N/A	N/A
	• Pollution caused from mobilisation of silts.	1	1	1	• The proposed drainage system will include rainfall volume including 40% climate change. • The site is situated 4 m above the 1:1000 year flood event. • The site is not directly influenced by rises in sea level as it is influenced by the Manchester Shipping Canal.	N/A	N/A	N/A
6. Drier summers, potentially up to 38% less rain than now.	• Increased dust - less rainwater to store.	4	2	8	• Increase surface water tank storage capacity and misting frequency.	4	1	4

Potential changing climate variable	Impact	Likelihood	Severity	Risk (Likelihood x Severity)	Mitigation (what will you do to mitigate this risk)	Likelihood (after mitigation)	Severity (after mitigation)	Residual risk
	• Decrease in groundwater and surface water levels causing lower water provision.	4	3	12	• Increase surface water tank storage capacity to hold water when groundwater. • Water provision and controls will be reviewed yearly to ensure provision is safeguarded and controls become more frequent (dependent on annual climate review).	4	1	4
7. At its peak, the flow in watercourses could be 35% more than now, and at its lowest it could be 70% less than now.	• Increased stress on the river and probability of flooding on site. • Decrease in groundwater and surface water levels causing lower water provision.	3 3	3 1	9 3	• There is a minimum of 45 m between the new alignment of the Salteye Brook and the platform. • Water provision and controls will be reviewed yearly to ensure provision is safeguarded and controls become more frequent (dependent on annual climate review). • If groundwater abstraction borehole is deemed necessary, a separate permit application will be submitted.	3 3	1 1	3 3

*Indicates data has come from climate change allowances as part of the spatial planning process. Evidence from your planning submission is acceptable evidence for this worksheet.

Appendix B
Envirocheck Maps



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Groundwater Vulnerability

General

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

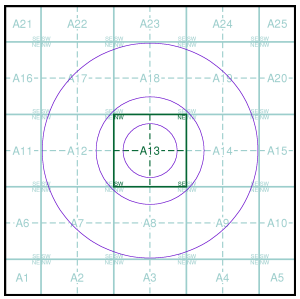
Agency and Hydrological

Bedrock Aquifers	Superficial Aquifers
High Vulnerability, Principal Aquifer	High Vulnerability, Principal Aquifer
High Vulnerability, Secondary Aquifer	High Vulnerability, Secondary Aquifer
Medium Vulnerability, Principal Aquifer	Medium Vulnerability, Principal Aquifer
Medium Vulnerability, Secondary Aquifer	Medium Vulnerability, Secondary Aquifer
Low Vulnerability, Principal Aquifer	Low Vulnerability, Principal Aquifer
Low Vulnerability, Secondary Aquifer	Low Vulnerability, Secondary Aquifer

Unproductive Aquifer

Soluble Rock

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	214988853_1_1
Customer Ref:	193237
National Grid Reference:	374450, 396880
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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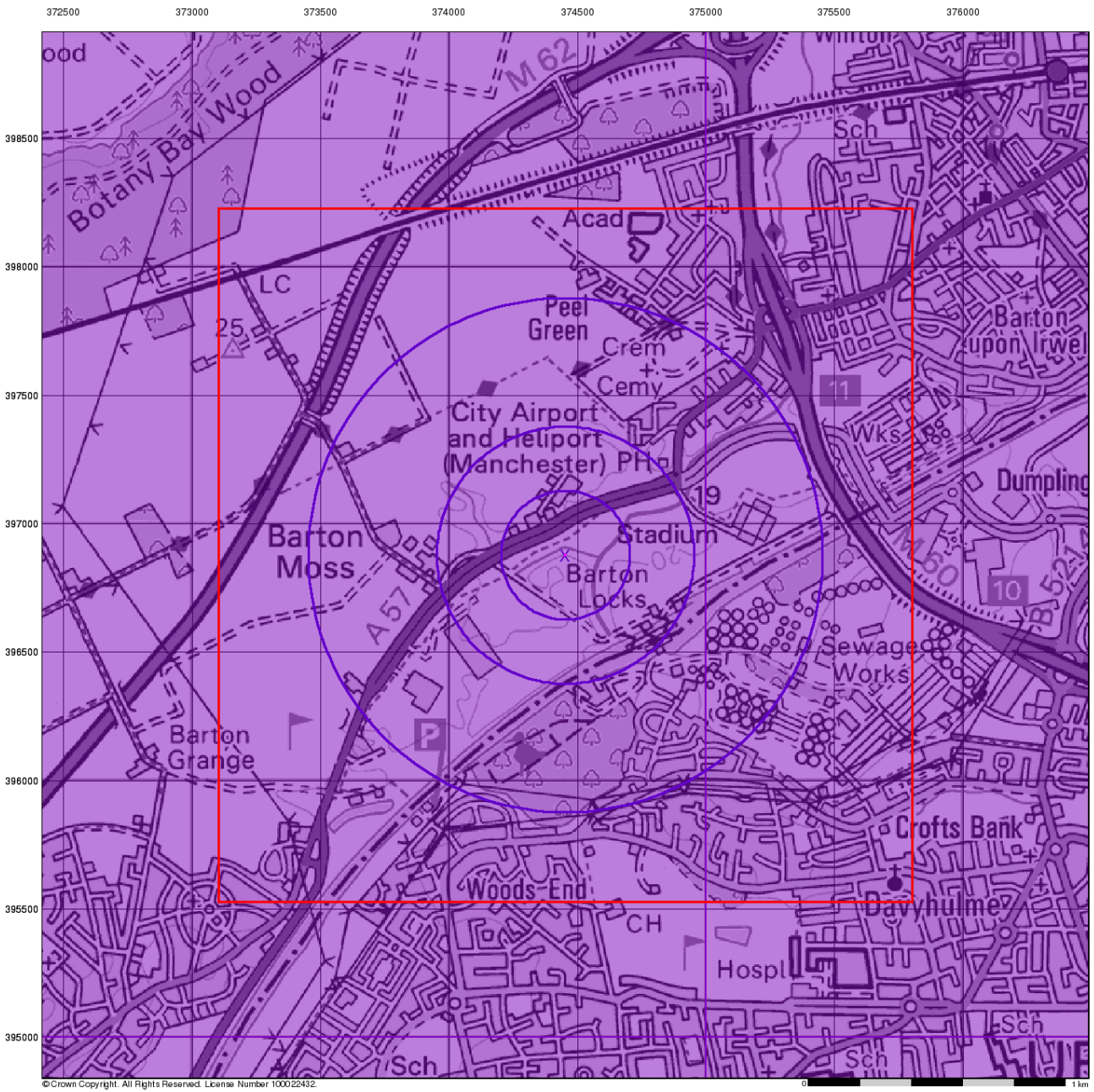

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Bedrock Aquifer Designation

General

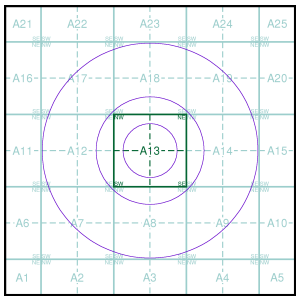
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



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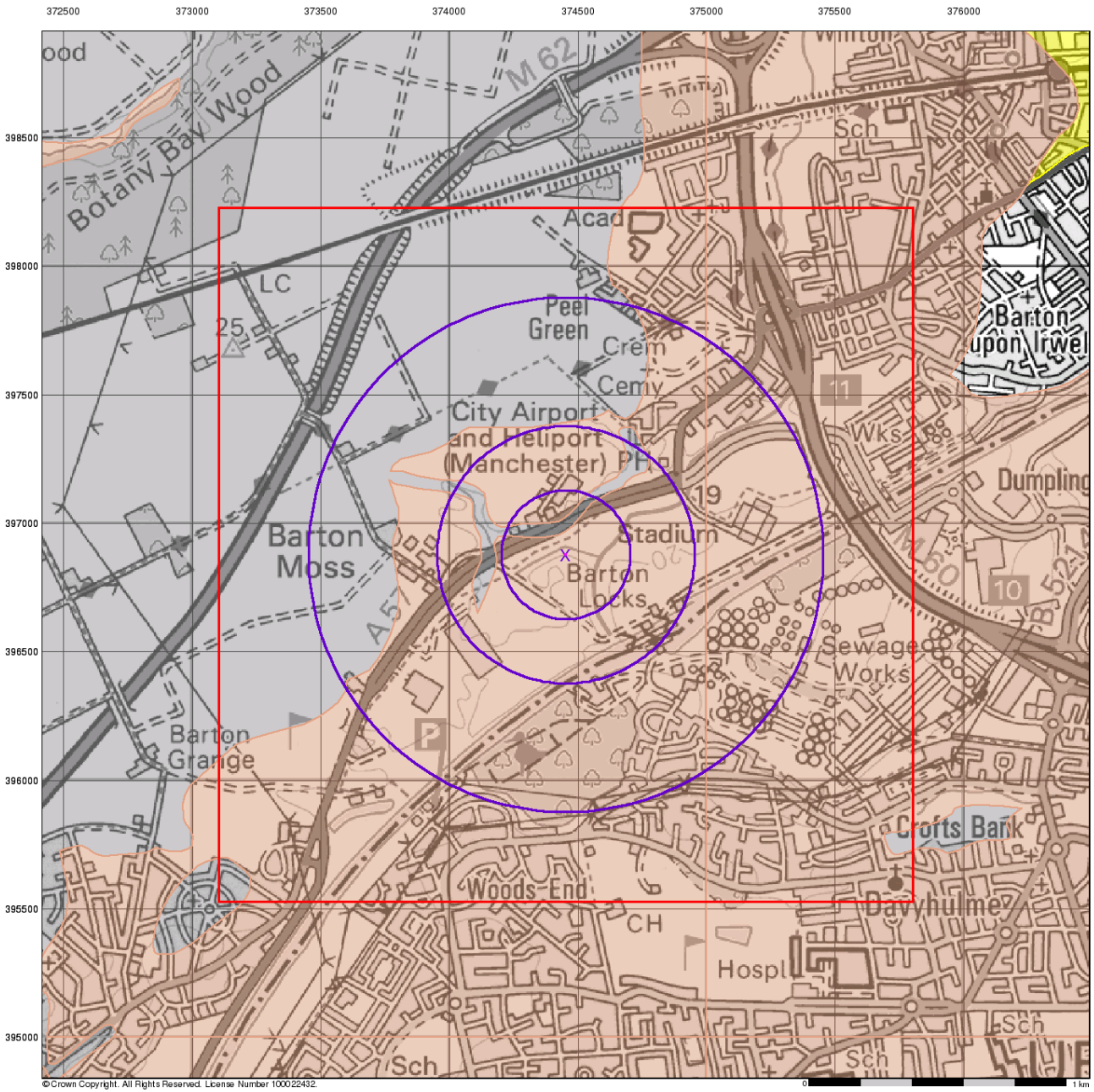

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Superficial Aquifer Designation

General

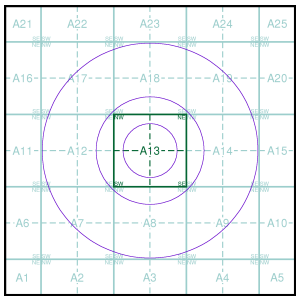
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



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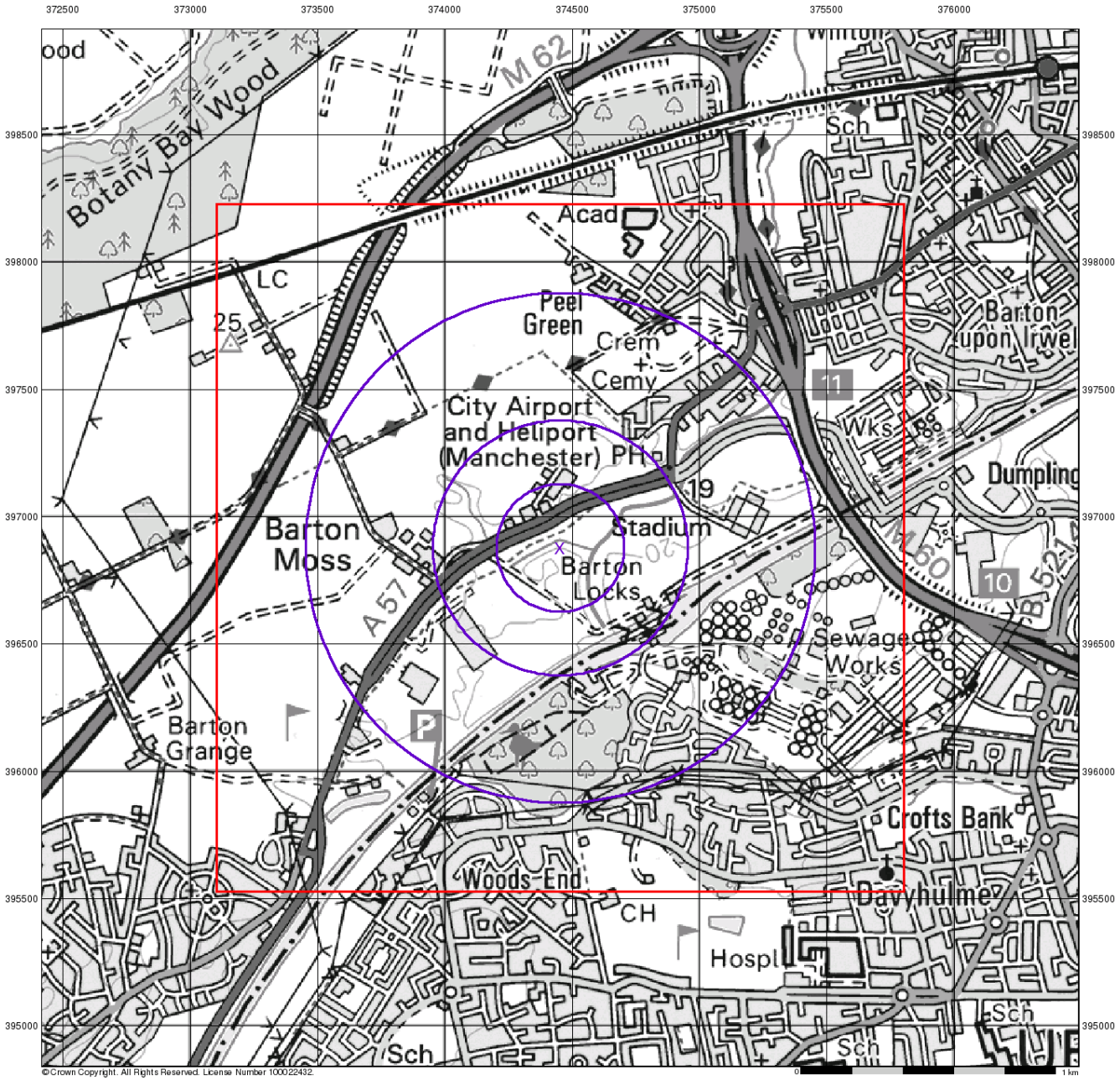

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Source Protection Zones

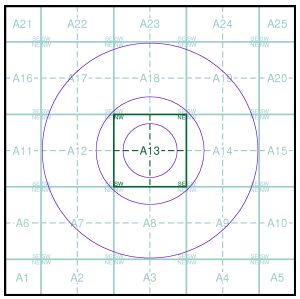
General

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

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)

Site Sensitivity Context Map - Slice A



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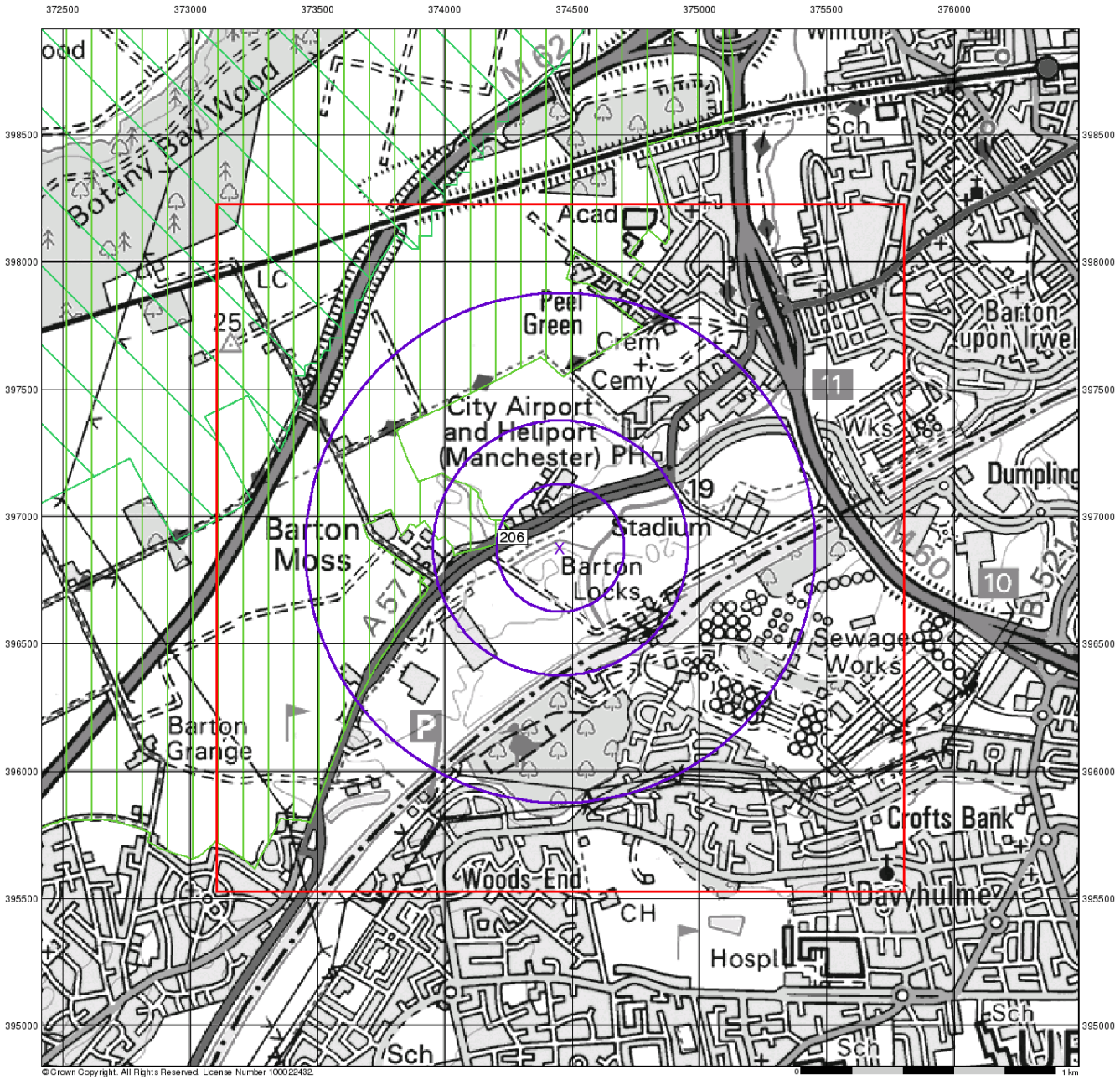

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Sensitive Land Uses

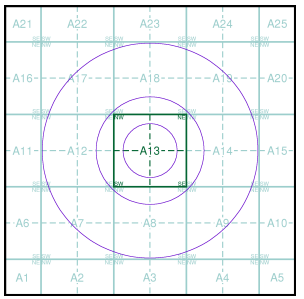
General

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

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- 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



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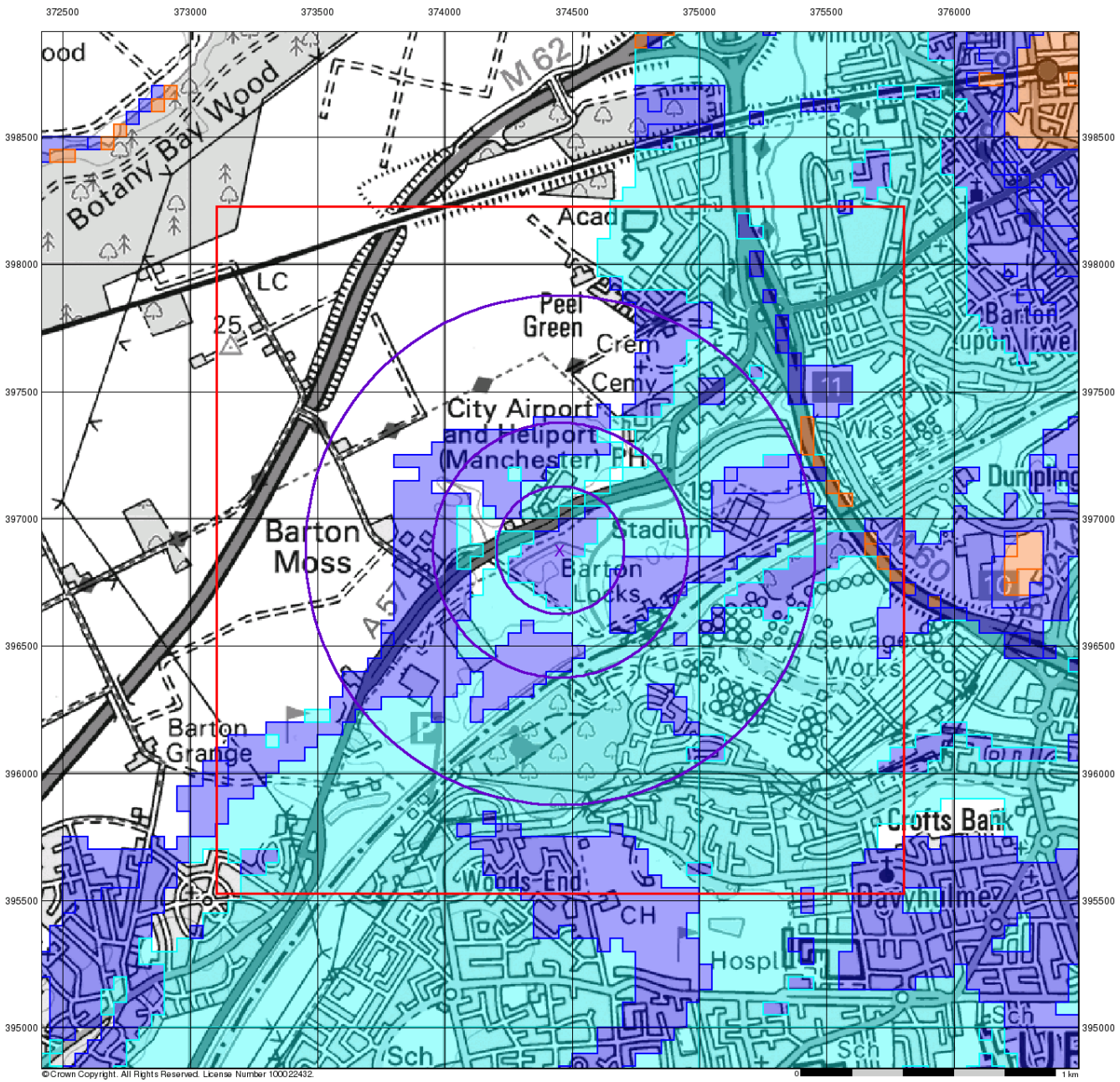

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BGS Flood GFS Data

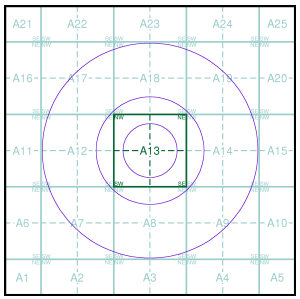
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

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

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National Grid Reference:	374450, 396880
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
214988853_1_1

Customer Reference:
193237

National Grid Reference:
374450, 396880

Slice:
A

Site Area (Ha):
0.01

Search Buffer (m):
1000

Site Details:

1, Avroe Road
Eccles
MANCHESTER
M30 7WH

Client Details:

Mr I Markidis
AA Environmental Ltd
4-8 Cholswell Court
Shippon
Abingdon
OX13 6HX

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Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v53.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1		3	2	86
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 24				1
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 24		Yes		
Pollution Incidents to Controlled Waters	pg 24		1	5	7
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 26		1		1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 27				4
Water Abstractions	pg 27		1		(*3)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 28	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 28	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 28	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 28		Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 28		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 29		3	20	40

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites	pg 36				2
Historical Landfill Sites	pg 36	1		1	6
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 38				3
Local Authority Landfill Coverage	pg 38	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 38		1		3
Potentially Infilled Land (Water)	pg 38		6	10	17
Registered Landfill Sites	pg 41		1		3
Registered Waste Transfer Sites	pg 42				1
Registered Waste Treatment or Disposal Sites	pg 43				2
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 44	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 44	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry	pg 46				Yes
BGS Urban Soil Chemistry Averages	pg 47		Yes		
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 47	Yes	n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 47		Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 47	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 47	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 47	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 48	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 49		4	1	10
Fuel Station Entries	pg 50		1		
Points of Interest - Commercial Services	pg 50		2		5
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 50		2	6	63
Points of Interest - Public Infrastructure	pg 56		5	5	17
Points of Interest - Recreational and Environmental					
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt	pg 60		1		
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	0	1	374453 396877
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (SE)	55	1	374500 396850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (N)	123	1	374450 397000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (N)	132	1	374500 397000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	197	1	374300 397000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	212	1	374650 396800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (NW)	282	1	374200 397000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (W)	304	1	374150 396877
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (NW)	313	1	374300 397150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SE (N)	448	1	374600 397300
1	**Discharge Consents** Operator: Manchester City Council Property Type: PUMPING STN ON UNADOPTED SEWERAGE NETWRK (NOT WATER CO) Location: Barton Aerodrome Ps, Liverpool Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016992839 Permit Version: 1 Effective Date: 4th October 1994 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Storm /emergency overflow Discharge Environment: Canal Receiving Water: Trib M'Chester Ship Canal **Status:** **Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	58	2	374400 396900
2	**Discharge Consents** Operator: Peel Holdings Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Liverpool Road, Barton Moss, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016991019 Permit Version: 2 Effective Date: 23rd January 1996 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Boyle Brook **Status:** **Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	94	2	374400 396800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
2	**Discharge Consents** Operator: Rhone-Poulenc Chemicals Ltd Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Liverpool Road, Barton Moss, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016991019 Permit Version: 1 Effective Date: 18th June 1985 Issued Date: Not Supplied Revocation Date: 22nd January 1996 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Boyle Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	94	2	374400 396800
3	**Discharge Consents** Operator: Great Bear Distribution Limited Property Type: OFFICES ADMIN + SUPPORT Location: Port Salford Warehouse 1 Eccles, Manchester, ., ., M30 7rt Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: Eprgb3293rr Permit Version: 1 Effective Date: 27th June 2017 Issued Date: 27th June 2017 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: New issued under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A8NE (S)	440	2	374505 396441
4	**Discharge Consents** Operator: Manchester Ship Canal Co Ltd Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Barton Locks Septic Tanks Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 01m/573 Permit Version: 1 Effective Date: 16th October 1962 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Canal Receiving Water: Machester Ship Canal **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A14SW (SE)	445	2	374800 396600
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016940143 Permit Version: 2 Effective Date: 31st January 1985 Issued Date: Not Supplied Revocation Date: 12th October 1989 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	536	2	374795 396465

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 13 Effective Date: 31st March 2015 Issued Date: 21st December 2011 Revocation Date: 29th August 2018 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 15 Effective Date: 21st December 2011 Issued Date: 21st December 2011 Revocation Date: 30th March 2015 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 14 Effective Date: 14th October 2011 Issued Date: 14th October 2011 Revocation Date: 20th December 2011 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 12 Effective Date: 15th August 2011 Issued Date: 15th August 2011 Revocation Date: 13th October 2011 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 11 Effective Date: 22nd February 2010 Issued Date: 22nd February 2010 Revocation Date: 14th August 2011 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 11 Effective Date: 22nd February 2010 Issued Date: 22nd February 2010 Revocation Date: 14th August 2011 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 11 Effective Date: 22nd February 2010 Issued Date: 22nd February 2010 Revocation Date: 14th August 2011 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Plc Property Type: Sewage Disposal Works - Water Company Location: Davyhulme Stw, Rivers Lane, Urmston, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 10 Effective Date: 31st March 2015 Issued Date: 22nd February 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Plc Property Type: Sewage Disposal Works - Water Company Location: Davyhulme Stw, Rivers Lane, Urmston, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 10 Effective Date: 31st March 2015 Issued Date: 22nd February 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 9 Effective Date: 1st January 2010 Issued Date: 14th October 2008 Revocation Date: 21st February 2010 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 8 Effective Date: 21st April 2005 Issued Date: 21st April 2005 Revocation Date: 31st December 2009 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 7 Effective Date: 31st December 2000 Issued Date: Not Supplied Revocation Date: 20th April 2005 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Consent revoked or revised: New Consent issued (Section 37(1))** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 6 Effective Date: 1st January 1999 Issued Date: Not Supplied Revocation Date: 30th December 2000 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 6 Effective Date: 1st January 1999 Issued Date: Not Supplied Revocation Date: 30th December 2000 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 6 Effective Date: 1st January 1999 Issued Date: Not Supplied Revocation Date: 30th December 2000 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	537	2	374790 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016940143 Permit Version: 4 Effective Date: 17th January 1990 Issued Date: Not Supplied Revocation Date: 31st December 1993 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	540	2	374795 396460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 9 Effective Date: 1st January 2010 Issued Date: 14th October 2008 Revocation Date: 21st February 2010 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 9 Effective Date: 1st January 2010 Issued Date: 14th October 2008 Revocation Date: 21st February 2010 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 9 Effective Date: 1st January 2010 Issued Date: 14th October 2008 Revocation Date: 21st February 2010 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 8 Effective Date: 21st April 2005 Issued Date: 21st April 2005 Revocation Date: 31st December 2009 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status:** **Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 8 Effective Date: 21st April 2005 Issued Date: 21st April 2005 Revocation Date: 31st December 2009 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 8 Effective Date: 21st April 2005 Issued Date: 21st April 2005 Revocation Date: 31st December 2009 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 7 Effective Date: 31st December 2000 Issued Date: Not Supplied Revocation Date: 20th April 2005 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Consent revoked or revised: New Consent issued (Section 37(1))** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Ltd Property Type: Sewage Disposal Works - Water Company Location: Davyhulme Stw, Rivers Lane, Urmston, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Mersey Reference: 016940143 Permit Version: 4 Effective Date: 17th January 1990 Issued Date: Not Supplied Revocation Date: 31st December 1993 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	543	2	374800 396460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Mersey Reference: 016940143 Permit Version: 3 Effective Date: 13th October 1989 Issued Date: Not Supplied Revocation Date: 16th January 1990 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016940143 Permit Version: 1 Effective Date: 12th January 1980 Issued Date: Not Supplied Revocation Date: 30th January 1985 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	543	2	374805 396465
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 7 Effective Date: 31st December 2000 Issued Date: Not Supplied Revocation Date: 20th April 2005 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Consent revoked or revised: New Consent issued (Section 37(1))** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 7 Effective Date: 31st December 2000 Issued Date: Not Supplied Revocation Date: 20th April 2005 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Consent revoked or revised: New Consent issued (Section 37(1))** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 1 Effective Date: 12th January 1980 Issued Date: Not Supplied Revocation Date: 30th January 1985 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 2 Effective Date: 31st January 1985 Issued Date: Not Supplied Revocation Date: 12th October 1989 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 3 Effective Date: 13th October 1989 Issued Date: Not Supplied Revocation Date: 16th January 1990 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 4 Effective Date: 17th January 1990 Issued Date: Not Supplied Revocation Date: 31st December 1993 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 5 Effective Date: 1st January 1994 Issued Date: Not Supplied Revocation Date: 31st December 1998 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016982489 Permit Version: 1 Effective Date: 23rd December 1992 Issued Date: Not Supplied Revocation Date: 4th December 1994 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016982489 Permit Version: 2 Effective Date: 5th December 1994 Issued Date: Not Supplied Revocation Date: 31st December 1995 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 5 Effective Date: 1st January 1994 Issued Date: Not Supplied Revocation Date: 31st December 1998 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	543	2	374800 396460

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: Unknown Operator Property Type: Not Given Location: Davyhulme Sewage Treatment Works, Davyhulme; Rivers Lane , Urmston , MANCHESTER Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016940143B Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Settled storm discharge - storm tank discharges Discharge Environment: Canal Receiving Water: Storm Tank Effluent; St Effluent Collecting Chamber; Manchester Ship Canal **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	546	2	374805 396460
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016982489 Permit Version: 3 Effective Date: 1st January 1996 Issued Date: Not Supplied Revocation Date: 30th August 2000 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	550	2	374805 396455
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 16 Effective Date: 30th August 2018 Issued Date: 30th August 2018 Revocation Date: 31st March 2019 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 17 Effective Date: 1st April 2019 Issued Date: 30th August 2018 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 17 Effective Date: 1st April 2019 Issued Date: 30th August 2018 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 16 Effective Date: 30th August 2018 Issued Date: 30th August 2018 Revocation Date: 31st March 2019 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 16 Effective Date: 30th August 2018 Issued Date: 30th August 2018 Revocation Date: 31st March 2019 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 17 Effective Date: 1st April 2019 Issued Date: 30th August 2018 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 13 Effective Date: 31st March 2015 Issued Date: 21st December 2011 Revocation Date: 29th August 2018 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 13 Effective Date: 31st March 2015 Issued Date: 21st December 2011 Revocation Date: 29th August 2018 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 13 Effective Date: 31st March 2015 Issued Date: 21st December 2011 Revocation Date: 29th August 2018 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 15 Effective Date: 21st December 2011 Issued Date: 21st December 2011 Revocation Date: 30th March 2015 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 15 Effective Date: 21st December 2011 Issued Date: 21st December 2011 Revocation Date: 30th March 2015 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 15 Effective Date: 21st December 2011 Issued Date: 21st December 2011 Revocation Date: 30th March 2015 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 14 Effective Date: 14th October 2011 Issued Date: 14th October 2011 Revocation Date: 20th December 2011 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 14 Effective Date: 14th October 2011 Issued Date: 14th October 2011 Revocation Date: 20th December 2011 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 14 Effective Date: 14th October 2011 Issued Date: 14th October 2011 Revocation Date: 20th December 2011 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 12 Effective Date: 15th August 2011 Issued Date: 15th August 2011 Revocation Date: 13th October 2011 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 12 Effective Date: 15th August 2011 Issued Date: 15th August 2011 Revocation Date: 13th October 2011 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Davyhulme Wwtw Trafford Way, ., Manchester, Greater Manchester, M17 8dd Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 12 Effective Date: 15th August 2011 Issued Date: 15th August 2011 Revocation Date: 13th October 2011 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	554	2	374801 396447

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: PUMPING STATION ON SEWERAGE NETWORK (WATER COMPANY) Location: Newlands Ps, Salford, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 01SAL0037 Permit Version: 2 Effective Date: 1st January 1995 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Not Supplied **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	563	2	374940 397160
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: PUMPING STATION ON SEWERAGE NETWORK (WATER COMPANY) Location: Newlands Ps, Salford, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 01sal0037 Permit Version: 1 Effective Date: 1st April 1991 Issued Date: Not Supplied Revocation Date: 31st December 1994 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Not Supplied Receiving Water: Not Supplied **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	563	2	374940 397160
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 10 Effective Date: 1st March 2015 Issued Date: 30th March 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	576	2	374960 397150
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 9 Effective Date: 1st January 2010 Issued Date: 14th October 2008 Revocation Date: 28th February 2015 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Consent Currently Under Appeal** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	576	2	374960 397150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 8 Effective Date: 5th May 2005 Issued Date: 5th May 2005 Revocation Date: 31st December 2009 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Consent Currently Under Appeal** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	576	2	374960 397150
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 7 Effective Date: 31st December 2000 Issued Date: 31st December 2000 Revocation Date: 4th May 2005 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	576	2	374960 397150
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Mersey Reference: 016940144 Permit Version: 3 Effective Date: 31st January 1985 Issued Date: Not Supplied Revocation Date: 20th April 1987 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	576	2	374960 397150
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016940144 Permit Version: 4 Effective Date: 21st April 1987 Issued Date: Not Supplied Revocation Date: 18th September 1989 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	576	2	374960 397150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 1 Effective Date: 16th May 1980 Issued Date: Not Supplied Revocation Date: 31st December 1981 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	576	2	374960 397150
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 2 Effective Date: 1st January 1982 Issued Date: Not Supplied Revocation Date: 30th January 1985 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	576	2	374960 397150
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 5 Effective Date: 19th September 1989 Issued Date: Not Supplied Revocation Date: 12th July 1990 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	576	2	374960 397150
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 6 Effective Date: 13th July 1990 Issued Date: Not Supplied Revocation Date: 30th December 2000 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Consent revoked or revised: New Consent issued (Section 37(1))** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	576	2	374960 397150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Discharge Consents** Operator: F Hart, J E Dodd & J E Drinkwate Property Type: FARMS (NOT HOUSE)/CROP + ANIMAL REARING/PLANT NURSERY Location: Marriots Farm Barton Moss Rd, Eccles, Manchester, Lancashire, M30 7rl Authority: Environment Agency, North West Region Catchment Area: Manchester Ship Canal Reference: 01m/306 Permit Version: 1 Effective Date: 30th July 1959 Issued Date: 30th July 1959 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Canal Receiving Water: Unknown **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A12SE (W)	635	2	373822 396815
8	**Discharge Consents** Operator: White Reclamation Ltd Property Type: OFFICES ADMIN + SUPPORT Location: Liverpool Road, Peel Green, Eccles, Manchester, Greater Manchester, M30 7lj Authority: Environment Agency, North West Region Catchment Area: Manchester Ship Canal Reference: 01m/133 Permit Version: 1 Effective Date: 30th January 1956 Issued Date: 30th January 1956 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Canal Receiving Water: Unknown **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	794	2	375021 397432
9	**Discharge Consents** Operator: Makro Self Service Wholesalers Ltd Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Makro Ltd Eccles Liverpool Road, Barton Moss, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016990536 Permit Version: 4 Effective Date: 7th January 2004 Issued Date: 7th January 2004 Revocation Date: Not Supplied Discharge Type: Sewage And Trade Combined - Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: Trib Manchester Ship Can **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	797	2	373990 396230
10	**Discharge Consents** Operator: Makro Self Service Wholesalers Ltd Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Makro Ltd Eccles Liverpool Road, Barton Moss, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016990536 Permit Version: 3 Effective Date: 21st October 1994 Issued Date: Not Supplied Revocation Date: 6th January 2004 Discharge Type: Trade Discharge - Process Water Discharge Environment: Canal Receiving Water: Trib Manchester Ship Can **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	800	2	373900 396300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Discharge Consents** Operator: Makro Self Service Wholesalers Ltd Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Makro Ltd Eccles Liverpool Road, Barton Moss, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016990536 Permit Version: 1 Effective Date: 10th March 1970 Issued Date: Not Supplied Revocation Date: 20th September 1992 Discharge Type: Trade Discharge - Process Water Discharge Environment: Freshwater Stream/River Receiving Water: Trib Manchester Ship Can **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	800	2	373900 396300
10	**Discharge Consents** Operator: Makro Self Service Wholesalers Ltd Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Makro Ltd Eccles Liverpool Road, Barton Moss, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016990536 Permit Version: 2 Effective Date: 21st September 1992 Issued Date: Not Supplied Revocation Date: 20th October 1994 Discharge Type: Trade Discharge - Process Water Discharge Environment: Canal Receiving Water: Trib Manchester Ship Can **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	800	2	373900 396300
11	**Discharge Consents** Operator: United Utilities Water Plc Property Type: Sewage Disposal Works - Water Company Location: Davyhulme Stw, Rivers Lane, Urmston, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 10 Effective Date: 31st March 2015 Issued Date: 22nd February 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	825	2	375070 396330
11	**Discharge Consents** Operator: United Utilities Water Plc Property Type: Sewage Disposal Works - Water Company Location: Davyhulme Stw, Rivers Lane, Urmston, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940143 Permit Version: 10 Effective Date: 31st March 2015 Issued Date: 22nd February 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Canal Receiving Water: Manchester Ship Canal **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	832	2	375070 396320

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	**Discharge Consents** Operator: W. Dixon Property Type: FARMS (NOT HOUSE)/CROP + ANIMAL REARING/PLANT NURSERY Location: Tunnel Farm, Barton Moss Road, Eccles, Manchester, M30 7rq Authority: Environment Agency, North West Region Catchment Area: Manchester Ship Canal Reference: 01m/546 Permit Version: 1 Effective Date: 23rd February 1964 Issued Date: 23rd February 1964 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Canal Receiving Water: Unknown **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A17SW (NW)	953	2	373591 397281
13	**Discharge Consents** Operator: Boysnope Park Golf Ltd Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Boysnope Park Golf Ltd Boysnope Farm, Liverpool Road, Barton Moss, Eccles, M30 7rf Authority: Environment Agency, North West Region Catchment Area: Manchester Ship Canal Reference: 016993508 Permit Version: 1 Effective Date: 23rd April 2004 Issued Date: 23rd April 2004 Revocation Date: Not Supplied Discharge Type: Sewage And Trade Combined - Unspecified Discharge Environment: Canal Receiving Water: Culverted Stream To Canal **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7SW (SW)	984	2	373760 396180
14	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 7 Effective Date: 31st December 2000 Issued Date: 31st December 2000 Revocation Date: 4th May 2005 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	995	2	375280 397430
14	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Mersey Reference: 016940144 Permit Version: 4 Effective Date: 21st April 1987 Issued Date: Not Supplied Revocation Date: 18th September 1989 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	995	2	375280 397430

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016940144 Permit Version: 1 Effective Date: 16th May 1980 Issued Date: Not Supplied Revocation Date: 31st December 1981 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	995	2	375280 397430
14	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016940144 Permit Version: 6 Effective Date: 13th July 1990 Issued Date: Not Supplied Revocation Date: 30th December 2000 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Consent revoked or revised: New Consent issued (Section 37(1))** Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	995	2	375280 397430
14	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 2 Effective Date: 1st January 1982 Issued Date: Not Supplied Revocation Date: 30th January 1985 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	995	2	375280 397430
14	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 3 Effective Date: 31st January 1985 Issued Date: Not Supplied Revocation Date: 20th April 1987 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	995	2	375280 397430

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	**Discharge Consents** Operator: United Utilities Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Eccles Stw, Peel Green Road, Eccles, Greater Manchester Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016940144 Permit Version: 5 Effective Date: 19th September 1989 Issued Date: Not Supplied Revocation Date: 12th July 1990 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Salteye Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	995	2	375280 397430
15	**Local Authority Pollution Prevention and Controls** Name: Eccles Crematorium Location: 716 Liverpool Road, Eccles, MANCHESTER, Lancashire, M30 7LW Authority: Salford City Council, Environmental Health Department Permit Reference: 8343/210812 Dated: 20th October 1994 Process Type: Local Authority Air Pollution Control Description: PG5/2 Crematoria **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A19NW (NE)	945	3	374861 397729
	Nearest Surface Water Feature	A13SE (SE)	122	-	374562 396823
16	**Pollution Incidents to Controlled Waters** Property Type: Private Sewage: Sewage Works And Septic Tanks Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Crude Sewage Note: Boyle Brook Incident Date: 26th May 1994 Incident Reference: 94651111 Catchment Area: Worsley Brook Receiving Water: Not Given Cause of Incident: Blocked Sewer Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	197	2	374300 397000
17	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Fire water / Foam Note: Not Supplied Incident Date: 30th April 1995 Incident Reference: 95650959 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Fire Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (N)	326	2	374500 397200
18	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Not Supplied Incident Date: 12th July 1995 Incident Reference: 95651734 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NE (S)	405	2	374600 396500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Sewage Treatment Works Location: Greater Manchester Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Foam Note: Manchester Ship Canal; Detergent Incident Date: 17th January 1996 Incident Reference: 96650193 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NE (S)	410	2	374600 396495
19	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Unknown Note: Not Supplied Incident Date: 27th May 1992 Incident Reference: 92510881 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	451	2	374700 396500
20	**Pollution Incidents to Controlled Waters** Property Type: Private Sewage: Sewage Works And Septic Tanks Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Crude Sewage Note: Boyle Brook Incident Date: 25th January 1994 Incident Reference: 94650173 Catchment Area: Worsley Brook Receiving Water: Not Given Cause of Incident: Blocked Sewer Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	460	2	374000 396800
21	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Chemicals - Paints / Dyes Note: Manchester Ship Canal & Mersey; Cromium Sulphate Incident Date: 30th September 1995 Incident Reference: 95652433 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Poor Operational Practice Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	513	2	374800 396500
22	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Natural Note: Uto Salteye Brook; Peaty Run Off Incident Date: 11th April 1994 Incident Reference: 94650657 Catchment Area: Worsley Brook Receiving Water: Not Given Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	547	2	374800 397300
23	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Natural Note: Uto Salteye Brook Incident Date: 11th November 1994 Incident Reference: 94652470 Catchment Area: Worsley Brook Receiving Water: Not Given Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	552	2	374900 397200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Other Location: Liverpool Road , Barton , ECCLES Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Fire water / Foam Note: Fire Involving Wood Chippings Incident Date: 9th October 1998 Incident Reference: SO981860 Catchment Area: Worsley Brook Receiving Water: Freshwater Stream/River Cause of Incident: Fire Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	615	2	374900 397300
25	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Folly Brook Incident Date: 31st January 1991 Incident Reference: 91510200 Catchment Area: Worsley Brook Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	634	2	375001 397196
25	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Folly Brook Incident Date: 31st January 1991 Incident Reference: 91510119 Catchment Area: Worsley Brook Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	637	2	375001 397201
26	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Storm Overflow Location: Pollution In Bent Lanes Brook, Davyhulme , URMSTON Authority: Environment Agency, North West Region Pollutant: Sewage Debris/Litter Note: Not Supplied Incident Date: 26th August 1998 Incident Reference: SO981573 Catchment Area: Manchester Ship Canal Receiving Water: Freshwater Stream/River Cause of Incident: CSO Normal Operation Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	989	2	374600 395900
	River Quality Name: Worsley Bk GQA Grade: River Quality E Reach: Eccles Stw To Msc Estimated Distance (km): 1 Flow Rate: Flow less than 0.62 cumecs Flow Type: River Year: 2000	A13SE (SE)	205	2	374594 396729
	River Quality Name: Manchester Ship Canal GQA Grade: River Quality E Reach: Salford Docks To Mersey Estimated Distance (km): 10 Flow Rate: Flow less than 40 cumecs Flow Type: River Year: 2000	A8NE (SE)	512	2	374729 396447

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
27	**Substantiated Pollution Incident Register** Authority: Environment Agency - North West Region, South Area Incident Date: 21st July 2014 Incident Reference: 1258606 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Other PollutantFlies	A19SW (NE)	655	2	374927 397329
27	**Substantiated Pollution Incident Register** Authority: Environment Agency - North West Region, South Area Incident Date: 3rd November 2011 Incident Reference: 937848 Water Impact: Category 4 - No Impact Air Impact: Category 4 - No Impact Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Specific Waste Materials: Commercial Waste	A19SW (NE)	692	2	374948 397361
27	**Substantiated Pollution Incident Register** Authority: Environment Agency - North West Region, South Area Incident Date: 17th November 2011 Incident Reference: 941523 Water Impact: Category 4 - No Impact Air Impact: Category 4 - No Impact Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Specific Waste Materials: Commercial Waste	A19SW (NE)	719	2	374969 397377
27	**Substantiated Pollution Incident Register** Authority: Environment Agency - North West Region, South Area Incident Date: 7th October 2014 Incident Reference: 1284942 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants and Effects: Smoke	A19SW (NE)	724	2	374969 397385
28	**Water Abstractions** Operator: Longland Ltd. Licence Number: 2569008009 Permit Version: Not Supplied Location: Salteye Brook, BARTON Authority: Environment Agency, North West Region Abstraction: Industrial: Coal Washing Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 818 Yearly Rate (m3): 40914 Details: Additional Purpose: Coal washing; Licence Status: Expired Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A13SE (SE)	166	2	374600 396800
	Water Abstractions Operator: Mr G Geoffrey Robert Swarbrick Licence Number: 2569015014 Permit Version: 101 Location: Land At Davyhulme Park G.C Authority: Environment Agency, North West Region Abstraction: Golf Courses: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At Davyhulme Park Golf Club Authorised Start: 01 March Authorised End: 31 October Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4SW (SE)	1590	2	375110 395430

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: The Secretary Licence Number: 2569015014 Permit Version: 100 Location: Land At Davyhulme Park G.C Authority: Environment Agency, North West Region Abstraction: Golf Courses: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 70 Yearly Rate (m3): 6500 Details: Land At Davyhulme Park Golf Club Authorised Start: 01 March Authorised End: 31 October Permit Start Date: 24th April 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4SW (SE)	1590	2	375110 395430
	Water Abstractions Operator: Playgolf (Trafford Centre) Limited Licence Number: 2569007088 Permit Version: 1 Location: Borehole At Old Park Lane, The Trafford Centre, Manchester Authority: Environment Agency, North West Region Abstraction: Golf Courses: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At Old Park Lane, The Trafford Centre, Manchester Authorised Start: 01 April Authorised End: 31 October Permit Start Date: 15th February 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(E)	1903	2	376340 396630
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - Medium Vulnerability Combined Vulnerability: Medium Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Mixed Dilution: 300-550 mm/year Baseflow Index: >70% Superficial Patchiness: >90% Superficial Thickness: 3-10m Superficial Recharge: High	A13NE (NE)	0	4	374453 396877
	Groundwater Vulnerability - Soluble Rock Risk None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A13NE (NE)	0	4	374453 396877
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NE (NE)	0	4	374453 396877
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NW (N)	34	2	374444 396909
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	115	2	374558 396830
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 9.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13SE (E)	124	5	374575 396857
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 294.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Salteye Brook Catchment Name: Mersey Primacy: 1	A13SE (SE)	128	5	374569 396825
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1027.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Salteye Brook Catchment Name: Mersey Primacy: 1	A13SE (E)	133	5	374583 396852
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 76.5 Watercourse Level: Underground Permanent: True Watercourse Name: Boyle Brook Catchment Name: Mersey Primacy: 1	A13NW (W)	280	5	374173 396887
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 112.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Boyle Brook Catchment Name: Mersey Primacy: 1	A13NW (W)	321	5	374143 396957
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 53.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Salteye Brook Catchment Name: Mersey Primacy: 2	A13SE (SE)	338	5	374607 396577
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 42.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Salteye Brook Catchment Name: Mersey Primacy: 1	A13SE (SE)	338	5	374607 396577
36	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 60.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Salteye Brook Catchment Name: Mersey Primacy: 1	A8NE (SE)	377	5	374611 396536
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.8 Watercourse Level: Underground Permanent: True Watercourse Name: Boyle Brook Catchment Name: Mersey Primacy: 1	A12NE (NW)	397	5	374095 397047

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 152.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A8NE (S)	402	5	374572 396493
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 157.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Boyle Brook Catchment Name: Mersey Primacy: 1	A12NE (NW)	405	5	374093 397063
40	**OS Water Network Lines** Watercourse Form: Canal Watercourse Length: 234.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 2	A8NE (SE)	428	5	374652 396498
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 52.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 1	A8NE (SE)	428	5	374652 396498
42	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 158.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 1	A8NE (S)	461	5	374627 396452
43	**OS Water Network Lines** Watercourse Form: Canal Watercourse Length: 34.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 2	A8NE (SE)	467	5	374729 396501
44	**OS Water Network Lines** Watercourse Form: Canal Watercourse Length: 121.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 2	A8NE (SE)	467	5	374729 396501
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 83.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 1	A8NE (SE)	470	5	374649 396451
46	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 98.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A12NE (W)	483	5	373977 396956

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
47	**OS Water Network Lines** Watercourse Form: Canal Watercourse Length: 87.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 2	A14SW (SE)	489	5	374860 396606
48	**OS Water Network Lines** Watercourse Form: Canal Watercourse Length: 67.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 2	A14SW (SE)	493	5	374833 396564
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 548.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 1	A8NE (S)	493	5	374508 396388
50	**OS Water Network Lines** Watercourse Form: Canal Watercourse Length: 126.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A8NE (S)	493	5	374508 396388
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 191.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 1	A8NE (SE)	494	5	374729 396468
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A12NE (W)	505	5	373953 396938
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A12NE (W)	510	5	373947 396936
54	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 14.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A12NE (W)	536	5	373924 396958
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A12NE (W)	537	5	373925 396974

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 52.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 1	A14SW (SE)	539	5	374895 396570
57	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 152.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Boyle Brook Catchment Name: Mersey Primacy: 1	A12NE (NW)	546	5	373984 397155
58	**OS Water Network Lines** Watercourse Form: Canal Watercourse Length: 3699.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 1	A14SW (SE)	549	5	374932 396611
59	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 240.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A9NW (SE)	656	5	374924 396420
60	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 74.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SE (N)	674	5	374461 397551
61	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 218.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A14NE (E)	677	5	375129 396907
62	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 112.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Boyle Brook Catchment Name: Mersey Primacy: 1	A12NE (NW)	685	5	373832 397164
63	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 461.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SW (NW)	699	5	374137 397500
64	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 201.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18NW (N)	724	5	374406 397599

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
65	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 35.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18NW (N)	724	5	374406 397599
66	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 649.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18NW (N)	749	5	374379 397622
67	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 10.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Boyle Brook Catchment Name: Mersey Primacy: 1	A12NW (NW)	791	5	373726 397186
68	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 21.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A8SE (S)	805	5	374684 396107
69	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 96.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A9NW (SE)	810	5	375053 396335
70	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 157.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	814	5	373892 397466
71	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 112.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A9NW (SE)	822	5	375126 396405
72	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 18.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A14NE (E)	848	5	375290 397011
73	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 59.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A14NE (E)	856	5	375284 397080

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
74	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 101.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18NE (N)	887	5	374492 397764
75	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 67.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bent Lanes Brook Catchment Name: Mersey Primacy: 1	A8SE (S)	893	5	374676 396014
76	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6715.0 Watercourse Level: Underground Permanent: True Watercourse Name: Bent Lanes Brook Catchment Name: Mersey Primacy: 1	A8SE (S)	893	5	374676 396014
77	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 319.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Manchester Ship Canal Catchment Name: Mersey Primacy: 1	A7SE (SW)	896	5	374067 396069
78	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 33.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bent Lanes Brook Catchment Name: Mersey Primacy: 1	A7SE (SW)	896	5	374067 396069
79	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 17.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bent Lanes Brook Catchment Name: Mersey Primacy: 1	A7SE (SW)	913	5	374087 396042
80	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.7 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Bent Lanes Brook Catchment Name: Mersey Primacy: 1	A7SE (SW)	922	5	374097 396028
81	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 502.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bent Lanes Brook Catchment Name: Mersey Primacy: 1	A7SE (SW)	923	5	374098 396026
82	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 412.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A9NE (SE)	925	5	375233 396380

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 124.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Bent Lanes Brook Catchment Name: Mersey Primacy: 1	A8SE (S)	930	5	374631 395965
84	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18NW (N)	953	5	374416 397829
85	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 54.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18NW (N)	956	5	374413 397832
86	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17NE (NW)	967	5	373818 397605
87	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17NE (NW)	974	5	373814 397612
88	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 307.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17NE (NW)	976	5	373803 397605
89	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18NW (N)	994	5	374372 397868
90	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18NW (N)	997	5	374369 397870
91	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17NE (NW)	1000	5	373802 397636

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
92	**BGS Recorded Landfill Sites** Site Name: Peel Green Road Works Location: MANCHESTER, Gt Manchester Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Positioned by the supplier Boundary Accuracy: Moderate	A14NW (NE)	571	-	374975 397108
93	**BGS Recorded Landfill Sites** Site Name: H Wood Ltd Location: New Hall Farm, Liverpool Rd, ECCLES, Gt Manchester Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Derived	A19SW (NE)	582	-	374901 397249
94	**Historical Landfill Sites** Licence Holder: Ollerton Developments Limited Location: Liverpool Road, Eccles, Salteye Brook Name: Victoria Tip Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD16553 First Input Date: 1st July 1986 Last Input Date: 31st December 1994 Specified Waste Type: Deposited Waste included Inert, Industrial and Commercial Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4200/9158 BGS Ref: Not Supplied Other Ref: RD/LIC/420/86, GDO E021	A13NE (NE)	0	2	374453 396877
95	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Barton Aerodrome, Liverpool Road, Eccles, Manchester Name: Fox Glen Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD17893 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: E104	A13NW (NW)	296	2	374181 396992
96	**Historical Landfill Sites** Licence Holder: White Reclamation Limited Location: Liverpool Road, Peel Green, Eccles, Salford Name: New Hall Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD16544 First Input Date: 31st December 1945 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert, Industrial and Special Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4200/9296 BGS Ref: Not Supplied Other Ref: RD/LIC/104/77, E043	A14NW (NE)	566	2	374918 397200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
97	**Historical Landfill Sites** Licence Holder: Divisional Manager Location: Peel Green Road, Eccles Name: Eccles Effluent Treatment Works Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD17882 First Input Date: 31st December 1970 Last Input Date: 31st December 1993 Specified Waste Type: Deposited Waste included Inert, Commercial and Household Waste, and Liquid Sludge EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4200/9085 BGS Ref: Not Supplied Other Ref: RD/LIC/386/85, E012	A14NW (NE)	572	2	374959 397143
98	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Manchester, Greater Manchester Name: Eccles Corporation Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD32098 First Input Date: 31st December 1969 Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: 691 Other Ref: Not Supplied	A14NW (NE)	572	2	374976 397108
99	**Historical Landfill Sites** Licence Holder: Not Supplied Location: New Hall Farm, Liverpool Road, Eccles, Greater Manchester Name: H. Wood Limited Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD32099 First Input Date: 31st December 1940 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Industrial Waste and Liquid Sludge EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: 692 Other Ref: Not Supplied	A19SW (NE)	584	2	374902 397250
100	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Greater Manchester Name: Boysnope Wharf Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD16587 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: E061	A7NE (SW)	769	2	374014 396247
101	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Greater Manchester Name: Bent Lanes Brook Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD16604 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: H061	A8SE (S)	984	2	374691 395923

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
102	**Licensed Waste Management Facilities (Locations)** Licence Number: 53845 Location: New Hall Farm, Liverpool Road, Eccles, Manchester, M30 7LJ Operator Name: White Recycling Ltd Operator Location: Not Supplied Authority: Environment Agency - North West Region, South Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Revoked** Issued: 30th June 1994 Last Modified: 2nd December 2013 Expires: Not Supplied Suspended: Not Supplied Revoked: 22nd April 2015 Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	799	2	375045 397413
103	**Licensed Waste Management Facilities (Locations)** Licence Number: 50526 Location: United Utilities Industrial Ltd, Rivers Lane, Urmston, Manchester, M41 7JB Operator Name: United Utilities Water Industrial Ltd Operator Location: Not Supplied Authority: Environment Agency - North West Region, South Area Site Category: Treatment - Biological **Licence Status: To PPC** Issued: 3rd January 2008 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: EP3031LB Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	816	2	375057 396329
104	**Licensed Waste Management Facilities (Locations)** Licence Number: 400848 Location: Land To The Rear Of Tunnel Farm, Barton Moss Road, Eccles, Manchester, M30 7RQ Operator Name: Ineos Upstream Ltd Operator Location: Not Supplied Authority: Environment Agency - North West Region, South Area Site Category: Mining Waste Operations **Licence Status: Transferred** Issued: 20th November 2013 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Manually positioned to the road within the address or location	A12NW (W)	900	2	373602 397169
	Local Authority Landfill Coverage Name: Salford Metropolitan District Council - Has no landfill data to supply		0	3	374453 396877
	Local Authority Landfill Coverage Name: Trafford Metropolitan Borough Council - Has not been able to supply Landfill data		468	6	374636 396447
105	**Potentially Infilled Land (Non-Water)** Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A13SE (S)	178	-	374472 396701
106	**Potentially Infilled Land (Non-Water)** Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12NE (NW)	552	-	373971 397144
107	**Potentially Infilled Land (Non-Water)** Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19SW (NE)	717	-	375000 397339
108	**Potentially Infilled Land (Non-Water)** Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A8SW (S)	731	-	374269 396171
109	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1909	A13SE (SE)	126	-	374568 396825

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
110	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SE (SE)	172	-	374584 396766
111	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A13NW (N)	189	-	374413 397062
112	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1929	A13NW (N)	217	-	374379 397081
113	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A13NW (W)	236	-	374220 396907
114	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A13SW (W)	249	-	374219 396794
115	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A13SW (W)	265	-	374189 396868
116	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1909	A13SE (SE)	302	-	374624 396628
117	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A13SE (E)	308	-	374753 396812
118	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A13NE (NE)	359	-	374653 397175
119	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1896	A13NE (NE)	360	-	374772 397043
120	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A8NE (S)	365	-	374580 396536
121	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A13SE (SE)	380	-	374648 396552
122	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A12NE (W)	439	-	374032 396997
123	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A14NW (NE)	442	-	374858 397055
124	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A18SE (NE)	460	-	374761 397219
125	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A8NE (SE)	529	-	374736 396431
126	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A12NE (W)	531	-	373939 397006
127	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A14NW (E)	582	-	374991 397098
128	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1909	A9NW (SE)	648	-	374972 396490
129	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (S)	667	-	374359 396218
130	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A12NE (W)	675	-	373784 396957

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
131	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1909	A18SE (NE)	680	-	374744 397491
132	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1896	A14NE (E)	685	-	375137 396886
133	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A7NE (SW)	734	-	374047 396266
134	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A19SW (NE)	761	-	375085 397300
135	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1896	A9NW (SE)	769	-	375114 396485
136	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1930	A14SE (E)	776	-	375217 396743
137	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A9NE (SE)	794	-	375142 396483
138	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A19SW (NE)	825	-	375124 397356
139	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7SE (SW)	854	-	374015 396145
140	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7SE (SW)	883	-	374108 396065
141	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8SE (S)	952	-	374664 395950

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
142	**Registered Landfill Sites** Licence Holder: Ollerton Developments Ltd Licence Reference: 00420/M01 Site Location: Victoria Tip, Liverpool Road, Eccles, Manchester, Greater Manchester Licence Easting: 374500 Licence Northing: 396900 Operator Location: Ollerton Grange, Chelford Road, KNUTSFORD, Cheshire, WA16 8RD Authority: Environment Agency - North West Region, South Area Site Category: Landfill Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st June 1986 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Ceramic Materials Construction Ind. Wastes Glass Ind. Non-Haz. Inert, Non-Flammable Ind. Non-Haz. Potentially Combustible Metals Similar Non Leachate Forming Materials Soil,Clay,Sand, Stone,Brick,Concrete,Slate Prohibited Waste: Animal Flesh Chemical Waste Of Any Nature Fibreglass Foodstuffs Liquid Wastes Paper/Cardboard Waste Plasterboard Plastics Sawdust Sludge Wastes Textiles Vegetable Matter Waste Forming Polluting Leachate Wood	A13NE (NE)	52	2	374500 396900
143	**Registered Landfill Sites** Licence Holder: H Wood (Patricroft) Ltd Licence Reference: 00104/77 Site Location: New Hall Farm; Liverpool Road, Peel Green, Eccles, Manchester, Greater Manchester, M30 7lj Licence Easting: 374950 Licence Northing: 397300 Operator Location: Liverpool Road, Peel Green, Eccles, Manchester, Greater Manchester, M30 7lj Authority: Environment Agency - North West Region, South Area Site Category: Landfill Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Record supersededSuperseded Dated: 23rd March 1982 Preceded By Licence: Not Given Superseded By Licence: 00104/M02/T01 Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Construction And Demolition Wastes Foundry Sand Ind. Non-Haz. Inert, Non-Flammable	A19SW (NE)	653	2	374950 397300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
144	**Registered Landfill Sites** Licence Holder: N.W.W.A. (Eastern Division) Licence Reference: 00386/85/M6 Site Location: Eccles E.T.Works, Peel Green Road, Eccles, Manchester, Greater Manchester Licence Easting: 375300 Licence Northing: 397100 Operator Location: Dawson House, Liverpool Road, Great Sankey, Warrington, Cheshire, Wa5 3lw Authority: Environment Agency - North West Region, South Area Site Category: Landfill Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: Waste produced/controlled by licence holder Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st September 1992 Preceded By Licence: 00386/85/M3 Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Gmwda Group 1 - Non/V.Slow Decomp.Wast Weathered Tar/Bitumen Prohibited Waste: Ash, Clinker Boiler Scale, Slag Glass,Pottery,China,Enamel,Ceram. Mica Mineral Processing Wastes Silica, Carbon, Kieselguhr Waste N.O.S.	A14NE (E)	876	2	375300 397100
144	**Registered Landfill Sites** Licence Holder: N.W.W.A. (Eastern Division) Licence Reference: 00386/85/M3 Site Location: Eccles E.T.Works, Peel Green Road, Eccles, Manchester, Greater Manchester Licence Easting: 375300 Licence Northing: 397100 Operator Location: Oakland House, Talbot Road, Old Trafford, TRAFFORD, Greater Manchester, M16 0QF Authority: Environment Agency - North West Region, South Area Site Category: Landfill Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: Waste produced/controlled by licence holder Status: Record supersededSuperseded Dated: 11th September 1985 Preceded By Licence: Not Given Superseded By Licence: 00386/85/M6 Positional Accuracy: Approximate location provided by supplier Boundary Accuracy: Not Applicable Authorised Waste: Construction And Demolition Wastes Sewage	A14NE (E)	876	2	375300 397100
145	**Registered Waste Transfer Sites** Licence Holder: White Reclamation Ltd Licence Reference: 00104/M02/T01 Site Location: New Hall Farm; Liverpool Road, Peel Green, Eccles, Manchester, Greater Manchester, M30 7lj Operator Location: As Site Address Authority: Environment Agency - North West Region, South Area Site Category: Transfer Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Site Closed Dated: 5th April 1982 Preceded By Licence: 00104/77 Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Ind. Non-Haz. Potentially Combustible	A19SW (NE)	653	2	374950 397300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
146	**Registered Waste Treatment or Disposal Sites** Licence Holder: White Reclamation Ltd Licence Reference: 00818/M01 Site Location: Liverpool Road, Peel Green, Eccles, MANCHESTER, Greater Manchester, M30 7LJ Operator Location: As Site Address Authority: Environment Agency - North West Region, South Area Site Category: Scrapyard - with Transfer Station Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 23rd March 2000 Preceded By Licence: 00818 Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Any No-Haz. Ferrous/Non-Ferrous Metal - Including Bonded Asbestos - But Empty Used Packages/Containers/Drums With < 1% Residue & Household & Commercial Waste Industrial Waste Maximum Waste Permitted By Licence Soils / Subsoils These Residues May Include Special Waste (As In Epa 1990:S62 Of 1996 Regs) Prohibited Waste: Bulk Powder Cont'Rs/Packages With Res. Of Subs With Any Haz.Code (H9,H10,H11,H12) Cont'Rs/Packages With Res. Of Subs With Haz.Code H14 - Ecotoxic Containers/Packages With Res. Of List I Substances In Eec Directive 80/68/Eec Containers/Packages With Res. Of Subs With Any Haz.Code In (H1, H2, H3a) Containers/Packages With Res. Of Subs In S5 Env.Prot(Prescribed Subs/Procs Regs'91) Drummed Waste Fibrous Forms Of Asbestos Hazardous Wastes Non-Solid Waste Special Waste (As In Epa 1990:S62 Of 1996 Regs) Waste Contaminated With Pcbs/Pcts Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval: Cont'Rs/Packages With Res. Of Subs With Any Haz.Code In (H3b,H4,H5,H6,H7,H8)	A19SW (NE)	723	2	375000 397350
146	**Registered Waste Treatment or Disposal Sites** Licence Holder: White Reclamation Ltd Licence Reference: 00818 Site Location: Liverpool Road, Peel Green, Eccles, MANCHESTER, Greater Manchester, M30 7LJ Operator Location: As Site Address Authority: Environment Agency - North West Region, South Area Site Category: Scrapyard - with Transfer Station Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 1st June 1994 Preceded By Licence: Not Given Superseded By Licence: 00818/M01 Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Asbestos Sheet/Piping - Comp./Bonded Carbides/Acetylides In Veh'S Only Gmwda Group 1 - Non/V.Slow Decomp.Wast Gmwda Group 2 - Slow Decomp./Slight So Gmwda Group 3 - Most Items Max.Waste Permitted By Licence Various Non-Ferrous Metal/Cpds Prohibited Waste: Explosive Waste Liquid Waste N.O.S. Press'D Containers Or Waste Therein Waste N.O.S Whether/Not Pack./Pre-Trt Waste Reacting Violently With Water	A19SW (NE)	723	2	375000 397350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Triassic Rocks (Undifferentiated)	A13NE (NE)	0	1	374453 396877
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NE)	0	1	374453 396877
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (E)	47	1	374500 396877
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 200 - 300 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NE (W)	470	1	374000 397000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 60 - 80 mg/kg	A18SW (N)	508	1	374378 397380
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 60 - 80 mg/kg	A18SE (N)	623	1	374453 397500
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: 200 - 300 mg/kg Nickel Concentration: 60 - 80 mg/kg	A17SE (NW)	631	1	374000 397315

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 120 - 180 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 80 - 100 mg/kg	A12NE (W)	660	1	373805 397000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (SE)	666	1	375000 396497
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SW (NE)	723	1	375000 397350
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: 600 - 1200 mg/kg Nickel Concentration: 60 - 80 mg/kg	A17SE (NW)	771	1	374000 397500
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SE (S)	936	1	374778 396000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 120 - 180 mg/kg Lead Concentration: 300 - 600 mg/kg Nickel Concentration: 80 - 100 mg/kg	A12NW (W)	954	1	373500 396877

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: 600 - 1200 mg/kg Nickel Concentration: 60 - 80 mg/kg	A12NW (W)	962	1	373500 397000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 200 - 300 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SE (SW)	988	1	374000 396000
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 375250, 396750 Soil Sample Type: Topsoil Sample Area: Manchester Arsenic Measured Concentration: 17.90 mg/kg Cadmium Measured Concentration: 0.90 mg/kg Chromium Measured Concentration: 78.20 mg/kg Lead Measured Concentration: 87.30 mg/kg Nickel Measured Concentration: 25.80 mg/kg	A14SE (E)	807	1	375250 396750
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 375330, 397150 Soil Sample Type: Topsoil Sample Area: Manchester Arsenic Measured Concentration: 13.10 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 60.00 mg/kg Lead Measured Concentration: 216.10 mg/kg Nickel Measured Concentration: 33.40 mg/kg	A14NE (E)	919	1	375330 397150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Urban Soil Chemistry Averages Source: British Geological Survey, National Geoscience Information Service Sample Area: Manchester Count Id: 300 Arsenic Minimum Concentration: 3.00 mg/kg Arsenic Average Concentration: 28.00 mg/kg Arsenic Maximum Concentration: 1008.00 mg/kg Cadmium Minimum Concentration: 0.30 mg/kg Cadmium Average Concentration: 1.40 mg/kg Cadmium Maximum Concentration: 80.30 mg/kg Chromium Minimum Concentration: 29.00 mg/kg Chromium Average Concentration: 92.00 mg/kg Chromium Maximum Concentration: 1252.00 mg/kg Lead Minimum Concentration: 20.00 mg/kg Lead Average Concentration: 270.00 mg/kg Lead Maximum Concentration: 2687.00 mg/kg Nickel Minimum Concentration: 5.00 mg/kg Nickel Average Concentration: 32.00 mg/kg Nickel Maximum Concentration: 137.00 mg/kg	A13NE (E)	247	1	374700 396877
	Coal Mining Affected Areas Description: 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. Contact details are included in the Useful Contacts section of this report.	A13NE (NE)	0	7	374453 396877
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	374453 396877
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	89	1	374411 396956
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	374453 396877
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	84	1	374410 396949
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	106	1	374396 396966
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	374453 396877
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	374453 396877
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	374453 396877
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	84	1	374410 396949
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	89	1	374411 396956

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	180	1	374355 396727
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	374453 396877
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	89	1	374411 396956
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	106	1	374396 396966
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	374453 396877
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	374453 396877

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
147	**Contemporary Trade Directory Entries** Name: Airport Garage Barton Ltd Location: Eccles, M30 7RX Classification: Mot Testing Centres **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	164	-	374312 396959
148	**Contemporary Trade Directory Entries** Name: C P X Location: Liverpool Rd, Eccles, Manchester, M30 7RT Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13NW (W)	202	-	374254 396906
149	**Contemporary Trade Directory Entries** Name: Pendlewood Location: Barton Airport, Eccles, Manchester, M30 7SA Classification: Furniture Manufacturers - Home & Office **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (N)	231	-	374370 397092
149	**Contemporary Trade Directory Entries** Name: Touchwood Joiners Location: Barton Airport, Eccles, Manchester, M30 7SA Classification: Joinery Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (N)	231	-	374370 397092
150	**Contemporary Trade Directory Entries** Name: Barton Aerodrome Operations Ltd Location: Barton Airport, Eccles, MANCHESTER, M30 7SA Classification: Airports **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (N)	318	-	374396 397190
151	**Contemporary Trade Directory Entries** Name: Universal Container Services Location: Liverpool Road, Eccles, Manchester, M30 7RT Classification: Container Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (SW)	550	-	373967 396621
152	**Contemporary Trade Directory Entries** Name: A & C Sheet Metal Ltd Location: Barton Moss Road, Eccles, Manchester, M30 7RL Classification: Sheet Metal Work **Status: Active** Positional Accuracy: Automatically positioned to the address	A12SE (W)	550	-	373904 396855
152	**Contemporary Trade Directory Entries** Name: Walsh Engineering Location: Barton Moss Road, Eccles, Manchester, M30 7RL Classification: Diesel Engine Equipment & Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A12SE (W)	562	-	373892 396874
153	**Contemporary Trade Directory Entries** Name: Plasmet Location: Barton Moss Road, Eccles, Manchester, M30 7RL Classification: Metal Workers **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NE (W)	607	-	373847 396901
154	**Contemporary Trade Directory Entries** Name: A & C Sheet Metal Ltd Location: Barton Moss Rd, Eccles, Manchester, M30 7RL Classification: Sheet Metal Work **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A12NW (W)	759	-	373697 396940
155	**Contemporary Trade Directory Entries** Name: Leathertech Location: 25, Booth Drive, Urmston, Manchester, M41 8PF Classification: Furniture - Repairing & Restoring **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	812	-	374929 396221
156	**Contemporary Trade Directory Entries** Name: Branopac Ltd Location: Liverpool Rd, Eccles, Manchester, M30 7RT Classification: Packaging Materials Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A7NW (SW)	826	-	373756 396436

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
157	**Contemporary Trade Directory Entries** Name: Superior Air Solutions Ltd Location: 14, Booth Drive, Urmston, Manchester, M41 8PF Classification: Air Conditioning & Refrigeration Contractors **Status: Active** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	863	-	374910 396146
158	**Contemporary Trade Directory Entries** Name: Mopsy Daisy Location: 2, Woodlands Avenue, Eccles, Manchester, M30 7GN Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	948	-	375096 397573
159	**Contemporary Trade Directory Entries** Name: Thermaelectric Location: 2e, New Hall Avenue, Eccles, Manchester, M30 7LE Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	980	-	375182 397533
160	**Fuel Station Entries** Name: Airport Garage Location: Liverpool Road , Eccles , Manchester, Greater Manchester, M30 7RX Brand: POWER Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Manually positioned to the address or location	A13NW (NW)	150	-	374330 396962
161	**Points of Interest - Commercial Services** Name: Airport Garage (Barton) Ltd Location: Liverpool Road, Eccles, Manchester, M30 7RX Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NW (NW)	150	8	374330 396962
161	**Points of Interest - Commercial Services** Name: Airport Garage Barton Ltd Location: 816 Liverpool Road, Eccles, M30 7RX Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NW (NW)	164	8	374311 396959
162	**Points of Interest - Commercial Services** Name: A & C Sheet Metal Ltd Location: Barton Moss Road, Eccles, Manchester, M30 7RL Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A12SE (W)	550	8	373904 396855
162	**Points of Interest - Commercial Services** Name: Plasmet Location: Barton Moss Road, Eccles, Manchester, M30 7RL Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A12NE (W)	607	8	373847 396901
163	**Points of Interest - Commercial Services** Name: Scrap Yard Location: M30 Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A19SW (NE)	701	8	374976 397343
163	**Points of Interest - Commercial Services** Name: Scrap Yard Location: Not Supplied Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	707	8	374980 397349
163	**Points of Interest - Commercial Services** Name: Scrap Yard Location: M30 Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	756	8	375022 397374
164	**Points of Interest - Manufacturing and Production** Name: Works Location: M30 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NW (NW)	189	8	374343 397030

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
164	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NW (NW)	190	8	374342 397031
165	**Points of Interest - Manufacturing and Production** Name: Tanks Location: M30 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	427	8	374048 396745
165	**Points of Interest - Manufacturing and Production** Name: Tanks Location: M30 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SE (SW)	429	8	374060 396707
165	**Points of Interest - Manufacturing and Production** Name: Tank Location: M30 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SE (W)	438	8	374039 396736
165	**Points of Interest - Manufacturing and Production** Name: Tank Location: M30 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SE (W)	442	8	374036 396733
165	**Points of Interest - Manufacturing and Production** Name: Tank Location: M30 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A12SE (W)	445	8	374034 396729
166	**Points of Interest - Manufacturing and Production** Name: Tanks Location: M30 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	467	8	373987 396856
167	**Points of Interest - Manufacturing and Production** Name: Tank Location: M30 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SE (SW)	512	8	374005 396631
167	**Points of Interest - Manufacturing and Production** Name: Tanks Location: M30 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SE (SW)	539	8	374005 396579
168	**Points of Interest - Manufacturing and Production** Name: Works Location: M30 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	558	8	373896 396862
168	**Points of Interest - Manufacturing and Production** Name: Works Location: M30 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12NE (W)	606	8	373849 396908
168	**Points of Interest - Manufacturing and Production** Name: Tank Location: M30 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	627	8	373827 396859

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
169	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	585	8	374797 396405
170	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	654	8	374937 396438
170	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	696	8	374969 396411
170	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	736	8	374997 396382
171	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SW (SE)	667	8	375050 396580
171	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SW (SE)	701	8	375089 396583
171	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SW (E)	704	8	375110 396626
172	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	690	8	375048 396529
173	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	725	8	375091 396533
173	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	772	8	375141 396528
174	**Points of Interest - Manufacturing and Production** Name: Tank Location: M30 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	744	8	375007 397374
175	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	747	8	375154 396619

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
175	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	773	8	375192 396650
175	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	777	8	375204 396680
175	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	817	8	375243 396671
175	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	858	8	375282 396657
176	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (SE)	767	8	375156 396571
176	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (SE)	802	8	375183 396545
176	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	809	8	375176 396516
176	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	812	8	375212 396591
176	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	821	8	375235 396628
176	**Points of Interest - Manufacturing and Production** Name: Tanks Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	849	8	375243 396566
176	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	858	8	375269 396614
176	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	892	8	375286 396558

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
176	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	894	8	375272 396519
176	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	900	8	375304 396586
177	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	775	8	375023 396353
177	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	778	8	375051 396381
178	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	785	8	375086 396414
178	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	853	8	375137 396369
178	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9NE (SE)	870	8	375142 396347
178	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	877	8	375135 396326
178	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	894	8	375171 396346
178	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	896	8	375119 396278
178	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	937	8	375214 396332
178	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9NE (SE)	954	8	375218 396308

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
179	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	882	8	375080 396258
179	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	920	8	375118 396242
179	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	963	8	375155 396219
180	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	901	8	375318 396625
180	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	939	8	375342 396576
181	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	933	8	375324 396543
181	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	937	8	375312 396503
181	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	991	8	375365 396490
181	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	991	8	375367 396494
181	**Points of Interest - Manufacturing and Production** Name: Tanks Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9NE (SE)	1000	8	375376 396494
182	**Points of Interest - Manufacturing and Production** Name: W Dixon & K Smith Location: Barton Moss Road, Eccles, Manchester, M30 7RQ Category: Farming Class Code: Arable Farming Positional Accuracy: Positioned to address or location	A17SW (NW)	939	8	373590 397247
182	**Points of Interest - Manufacturing and Production** Name: W Dixon Location: Tunnel Farm, Barton Moss Road, Eccles, Manchester, M30 7RQ Category: Farming Class Code: Arable Farming Positional Accuracy: Positioned to address or location	A17SW (NW)	939	8	373590 397247

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
183	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	940	8	375370 396674
183	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	941	8	375355 396612
183	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	980	8	375408 396660
183	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (E)	994	8	375404 396590
184	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	961	8	375212 396288
184	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	978	8	375251 396313
185	**Points of Interest - Manufacturing and Production** Name: J Stringer & Sons Location: Park Hall Farm, Liverpool Road, Eccles, Manchester, M30 7RJ Category: Farming Class Code: Arable Farming Positional Accuracy: Positioned to address or location	A7NW (SW)	962	8	373666 396325
185	**Points of Interest - Manufacturing and Production** Name: J Stringer & Sons Location: Park Hall Farm, Liverpool Road, Eccles, Manchester, M30 7RJ Category: Farming Class Code: Arable Farming Positional Accuracy: Positioned to address or location	A7NW (SW)	963	8	373665 396325
186	**Points of Interest - Manufacturing and Production** Name: Tank Location: M41 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NE (SE)	972	8	375186 396240
187	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	992	8	375186 397545
188	**Points of Interest - Public Infrastructure** Name: Spoil Heap Location: M30 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	54	8	374423 396833
189	**Points of Interest - Public Infrastructure** Name: Spoil Heap Location: M30 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	92	8	374530 396827

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
190	**Points of Interest - Public Infrastructure** Name: Airport Garage Location: Liverpool Road, Eccles, Manchester, M30 7RX Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13NW (NW)	150	8	374330 396962
191	**Points of Interest - Public Infrastructure** Name: Refuse Tip Location: M30 Category: Infrastructure and Facilities Class Code: Refuse Disposal Facilities Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	212	8	374642 396782
192	**Points of Interest - Public Infrastructure** Name: Lancashire Aero Club Location: Barton Airport, Eccles, Manchester, M30 7SA Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A13NW (N)	231	8	374370 397092
192	**Points of Interest - Public Infrastructure** Name: Barton Aerodrome Operations Ltd Location: Barton Airport, Eccles, Manchester, M30 7SA Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A13NW (N)	318	8	374396 397190
192	**Points of Interest - Public Infrastructure** Name: City Airport & Heliport Location: Barton Airport, Eccles, Manchester, M30 7SA Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A13NW (N)	318	8	374396 397190
192	**Points of Interest - Public Infrastructure** Name: Barton Aerodrome Location: M30 Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A13NW (N)	319	8	374397 397191
193	**Points of Interest - Public Infrastructure** Name: City Airport Location: Liverpool Road, Manchester, M30 7SA Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A13NE (N)	254	8	374491 397128
194	**Points of Interest - Public Infrastructure** Name: Spoil Heap Location: M30 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	310	8	374686 397081
195	**Points of Interest - Public Infrastructure** Name: Sluices Location: M41 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	519	8	374812 396503
195	**Points of Interest - Public Infrastructure** Name: Sluice Location: M41 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	533	8	374818 396490
196	**Points of Interest - Public Infrastructure** Name: Spoil Heap Location: M30 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A14NW (NE)	599	8	374975 397171
197	**Points of Interest - Public Infrastructure** Name: Cemetery Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A18SE (N)	618	8	374670 397456

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
197	**Points of Interest - Public Infrastructure** Name: Cemetery Location: M30 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A18SE (N)	618	8	374670 397456
198	**Points of Interest - Public Infrastructure** Name: Sewage Works (Disused) Location: M41 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	685	8	374634 396217
199	**Points of Interest - Public Infrastructure** Name: White Recyling Ltd Location: New Hall, Liverpool Road, Eccles, Manchester, M30 7LJ Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A19SW (NE)	802	8	375030 397434
200	**Points of Interest - Public Infrastructure** Name: Cemetery Location: M30 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	865	8	374862 397639
200	**Points of Interest - Public Infrastructure** Name: Cemetery Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	874	8	374878 397641
200	**Points of Interest - Public Infrastructure** Name: Crematorium Location: M30 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to address or location	A19NW (NE)	950	8	374863 397734
200	**Points of Interest - Public Infrastructure** Name: Crematorium Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	966	8	374886 397741
201	**Points of Interest - Public Infrastructure** Name: Spoil Heap Location: M30 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	871	8	375247 397236
202	**Points of Interest - Public Infrastructure** Name: Sewage Works (Disused) Location: M41 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	872	8	374413 396007
202	**Points of Interest - Public Infrastructure** Name: Sewage Works (Disused) Location: M41 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A8SW (S)	973	8	374400 395906
203	**Points of Interest - Public Infrastructure** Name: Sewage Works Location: M41 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A9NE (SE)	904	8	375239 396432
204	**Points of Interest - Public Infrastructure** Name: Sewage Works (Disused) Location: M41 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A8SW (S)	979	8	374392 395901

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
205	**Points of Interest - Public Infrastructure** Name: Sewage Works Location: M41 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A9NE (E)	989	8	375378 396529

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
206	**Areas of Adopted Green Belt** Authority: Salford City Council Plan Name: City Of Salford Unitary Development Plan **Status: Adopted** Plan Date: 21st June 2006	A13NW (W)	192	9	374266 396918

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Bolton Metropolitan Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
Warrington Borough Council - Environmental Health Department	March 2015	Annually
Salford City Council - Environmental Health Department	November 2013	Annual Rolling Update
Trafford Metropolitan Borough Council - Renewal and Environmental Protection	November 2013	Annual Rolling Update
Wigan Metropolitan Borough Council - Environmental Services	October 2017	Annual Rolling Update
Discharge Consents		
Environment Agency - North West Region	April 2019	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - North West Region	March 2013	Annual Rolling Update
Integrated Pollution Controls		
Environment Agency - North West Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - North West Region	April 2019	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Warrington Borough Council - Environmental Health Department	February 2015	Variable
Bolton Metropolitan Borough Council - Environmental Health Department	July 2014	Variable
Wigan Metropolitan Borough Council - Environmental Services	March 2014	Variable
Salford City Council - Environmental Health Department	March 2015	Variable
Trafford Metropolitan Borough Council - Environmental Health Department	October 2014	Variable
Local Authority Pollution Prevention and Controls		
Warrington Borough Council - Environmental Health Department	February 2015	Not Applicable
Bolton Metropolitan Borough Council - Environmental Health Department	July 2014	Not Applicable
Trafford Metropolitan Borough Council - Environmental Health Department	July 2015	Annual Rolling Update
Wigan Metropolitan Borough Council - Environmental Services	March 2014	Annual Rolling Update
Salford City Council - Environmental Health Department	March 2015	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Warrington Borough Council - Environmental Health Department	February 2015	Variable
Bolton Metropolitan Borough Council - Environmental Health Department	July 2014	Variable
Wigan Metropolitan Borough Council - Environmental Services	March 2014	Variable
Salford City Council - Environmental Health Department	March 2015	Variable
Trafford Metropolitan Borough Council - Environmental Health Department	October 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	January 2019	
Pollution Incidents to Controlled Waters		
Environment Agency - North West Region	January 2000	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - North West Region	March 2013	Annual Rolling Update
Prosecutions Relating to Controlled Waters		
Environment Agency - North West Region	March 2013	Annual Rolling Update
Registered Radioactive Substances		
Environment Agency - North West Region	June 2016	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - North West Region - South Area	April 2019	Quarterly
Water Abstractions		
Environment Agency - North West Region	July 2019	Quarterly

Agency & Hydrological	Version	Update Cycle
Water Industry Act Referrals Environment Agency - North West Region	October 2017	Quarterly
Groundwater Vulnerability Map Environment Agency - Head Office	June 2018	Annually
Bedrock Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Superficial Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Source Protection Zones Environment Agency - Head Office	July 2019	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	May 2019	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	May 2019	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	May 2019	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	May 2019	Quarterly
Flood Defences Environment Agency - Head Office	May 2019	Quarterly
OS Water Network Lines Ordnance Survey	April 2019	Quarterly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water Suitability Environment Agency - Head Office	October 2013	Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	July 2019	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - North West Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - North West Region - South Area	July 2018	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - North West Region - South Area	April 2019	Quarterly
Local Authority Landfill Coverage		
Bolton Metropolitan Borough Council	May 2000	Not Applicable
Salford City Council - Environmental Health Department	May 2000	Not Applicable
Trafford Metropolitan Borough Council - Environmental Health Department	May 2000	Not Applicable
Warrington Borough Council - Environmental Health Department	May 2000	Not Applicable
Wigan Metropolitan Borough Council - Environmental Services	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Bolton Metropolitan Borough Council	May 2000	Not Applicable
Salford City Council - Environmental Health Department	May 2000	Not Applicable
Trafford Metropolitan Borough Council - Environmental Health Department	May 2000	Not Applicable
Warrington Borough Council - Environmental Health Department	May 2000	Not Applicable
Wigan Metropolitan Borough Council - Environmental Services	May 2000	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Environment Agency - North West Region - South Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - North West Region - South Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - North West Region - South Area	March 2003	Not Applicable
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Trafford Metropolitan Borough Council	April 2016	Variable
Bolton Metropolitan Borough Council - Planning Department	February 2016	Variable
Wigan Metropolitan Borough Council - The Planning Department	January 2016	Variable
Salford City Council	June 2016	Variable
Warrington Borough Council - Environmental and Regeneration	June 2016	Variable
Planning Hazardous Substance Consents		
Trafford Metropolitan Borough Council	April 2016	Variable
Bolton Metropolitan Borough Council - Planning Department	February 2016	Variable
Wigan Metropolitan Borough Council - The Planning Department	January 2016	Variable
Salford City Council	June 2016	Variable
Warrington Borough Council - Environmental and Regeneration	June 2016	Variable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2019	Bi-Annually
BGS Urban Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Urban Soil Chemistry Averages British Geological Survey - National Geoscience Information Service	October 2015	Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	Annually

Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	April 2019	Quarterly
Fuel Station Entries Catalist Ltd - Experian	May 2019	Quarterly
Gas Pipelines National Grid	July 2014	
Points of Interest - Commercial Services PointX	July 2019	Quarterly
Points of Interest - Education and Health PointX	July 2019	Quarterly
Points of Interest - Manufacturing and Production PointX	July 2019	Quarterly
Points of Interest - Public Infrastructure PointX	July 2019	Quarterly
Points of Interest - Recreational and Environmental PointX	July 2019	Quarterly
Underground Electrical Cables National Grid	December 2015	

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural England	August 2018	Bi-Annually
Areas of Adopted Green Belt		
Bolton Metropolitan Borough Council	March 2019	As notified
Salford City Council	March 2019	As notified
Trafford Metropolitan Borough Council	March 2019	As notified
Warrington Borough Council	March 2019	As notified
Wigan Metropolitan Borough Council	March 2019	As notified
Areas of Unadopted Green Belt		
Bolton Metropolitan Borough Council	March 2019	As notified
Salford City Council	March 2019	As notified
Trafford Metropolitan Borough Council	March 2019	As notified
Warrington Borough Council	March 2019	As notified
Wigan Metropolitan Borough Council	March 2019	As notified
Areas of Outstanding Natural Beauty		
Natural England	June 2019	Bi-Annually
Environmentally Sensitive Areas		
Natural England	January 2017	
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Natural England	March 2019	Bi-Annually
Marine Nature Reserves		
Natural England	July 2019	Bi-Annually
National Nature Reserves		
Natural England	July 2019	Bi-Annually
National Parks		
Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones		
Environment Agency - Head Office	December 2017	Bi-Annually
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	
Ramsar Sites		
Natural England	April 2019	Bi-Annually
Sites of Special Scientific Interest		
Natural England	March 2019	Bi-Annually
Special Areas of Conservation		
Natural England	June 2019	Bi-Annually
Special Protection Areas		
Natural England	April 2019	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Salford City Council - Environmental Health Department** Crompton House, 100 Chorley Road, Swinton, Manchester, Greater Manchester, M27 2ES	Telephone: 0161 7370551 Fax: 0161 728 1956 Website: www.salford.gov.uk
4	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
5	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	**Trafford Metropolitan Borough Council - Environmental Health Department** P O Box 14, Trafford Town Hall, Talbot Road, Stretford, Greater Manchester, M32 0YJ	Telephone: 0161 912 4566 Fax: 0161 873 7783 Website: www.trafford.gov.uk
7	**The Coal Authority - Property Searches** 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
8	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
9	**Salford City Council** Crompton House, 100 Chorley Road, Swinton, Manchester, Greater Manchester, M27 2AD	Telephone: 0161 794 4711 Fax: 0161 727 7162 Website: www.salford.gov.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

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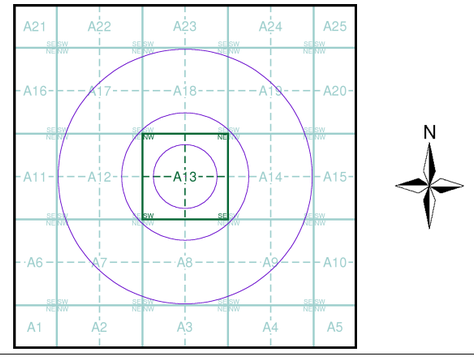
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1848	3
Cheshire	1:10,560	1881 - 1882	4
Lancashire And Furness	1:10,560	1896	5
Cheshire	1:10,560	1899	6
Lancashire And Furness	1:10,560	1909	7
Cheshire	1:10,560	1911	8
Cheshire	1:10,560	1911	9
Cheshire	1:10,560	1911	10
Lancashire And Furness	1:10,560	1929 - 1930	11
Lancashire And Furness	1:10,560	1929	12
Cheshire	1:10,560	1938 - 1951	13
Lancashire And Furness	1:10,560	1938	14
Lancashire And Furness	1:10,560	1951	15
Cheshire	1:10,560	1951	16
Ordnance Survey Plan	1:10,000	1955 - 1956	17
Ordnance Survey Plan	1:10,000	1959	18
Ordnance Survey Plan	1:10,000	1971 - 1979	19
Manchester	1:25,000	1975	20
Ordnance Survey Plan	1:10,000	1982 - 1984	21
Ordnance Survey Plan	1:10,000	1990	22
10K Raster Mapping	1:10,000	1999	23
10K Raster Mapping	1:10,000	2006	24
VectorMap Local	1:10,000	2019	25

Historical Map - Slice A



Order Details

Order Number: 214988853_1_1
Customer Ref: 193237
National Grid Reference: 374450, 396880
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

1, Avroe Road, Eccles, MANCHESTER, M30 7WH

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Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Fireproof Building
- Prominent Fireproof Building
- Non-fireproof Building
- Non-fireproof Building (non-dwelling)
- Factory, mill, and flour mill, with chimneys
- Factory, mill, and flour mill, without chimneys
- Power Station, drawn to scale (эл.ст.)
- Hydroelectric Power Station (ГЭС)
- Radio Station, drawn to scale
- Telephone Station, drawn to scale
- Abandoned Open-pit Mine or Quarry
- Open-pit Salt Mine (сол.)
- Pit (−1,5)
- Oil Deposit or Well (нефть)
- Oil Seepage (нефть)
- Tailings Pile (+7.0 отвал)
- Fuel Storage Tanks (скл. гор.)
- Natural Gas Tank (газг.)
- Bench Mark (125.4 / 125.1)
- Drill Hole (бур.)
- Burial Mound (+2.0)
- Triangulation Point on Burial Mound (+1.2 67.8)
- Single-track Railroad (Fill, раз., Cut, платф.)
- Double-track Railroad and Station Building (Small Bridge, ст., Tunnel, тун., Pipe (Culvert))
- Coniferous Forest (сосна 24 0.30)
- Deciduous Forest (клен 12 0.20)
- Mixed Forest (ель береза 20 0.25)
- Lawns
- Citrus Orchard
- Wet Ground
- Scattered Vegetation

243,8 — Values for prominent elevations

186.0 — Numbers for spot elevations, depth soundings, contour lines, etc.

0,2 — Velocity of the current, width of river bed, depth of river

180/12 180/12 — Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	ъ (–)
Д д (D)	Л л (L)	У у (U)	ы (Y)
Е е (E)	М м (M)	Ф ф (F)	ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Partly Demolished Buildings
- Demolished Buildings
- Built-Up Area with Fireproof Buildings Predominant
- Built-Up Area with Non-Fireproof Buildings Predominant
- Individual Fireproof Building
- Prominent Industrial Building
- Individual Dwelling, Fireproof
- Ruins of an Individual Dwelling
- Factory or Mill Chimney
- Factory or Mill with Chimney (бум.)
- Factory or Mill without Chimney (скип.)
- Mine or Open Pit Mine (медн.)
- Operating Shaft or Mine (кам. уг.)
- Non-Operating Shaft or Mine
- Salt Mine (сол.)
- Tailings Pile
- Pit (−1.7)
- Stone Quarry (гл. пес. кам.)
- Gas Pump or Service Station
- Fuel Storage or Natural Gas Tank
- Oil or Natural Gas Derrick
- Small Hydroelectric Power Station
- Power Station
- Transformer Station (б.тр.)
- Cemetery
- Burial Mound (height in metres) (+8.1)
- Triangulation Point on Burial Mound (95.7)
- Triangulation Point (92.6)
- Bench Mark (52.1)
- Bench Mark (monumented) (71.1)
- Telegraph Office
- Telephone Station
- Radio Station
- Radio Tower
- Airfield or Seaplane Base
- Landing Strip
- Main Highway (Cut, Fill, Km Post, Plantings, Telegraph/Telephone Lines)
- Highway under Construction
- Improved Dirt Road (former truck road) (Width of Road 6, Steep Grade)
- Double-track Railroad with First Class Station (Small Bridge, ст., Pipe (Culvert), Tunnel)
- Dismantled Railroad
- Railroad Under Construction
- Shore Embankment
- River or Ditch with Embankment (+2.4)
- Direction and velocity of current (Water Gauge, 0.2, 135.1, Water Level Mark)
- Well (К. 125.0 гл.8м (г.-сол.))
- Water Reservoir or Rain Water Pit (вдхр.)
- Spring (156.2 кл.)
- Isobath with value (20)
- Heavy (Index) Contour Line
- Contour Line and Value (20)
- Half Contour Line
- Spot Elevation Value (347.1)
- Coniferous
- Deciduous
- Mixed
- Scrub

Key to Numbers on Mapping

SJ79_Manchester

No.	Description
2	Airfield/Airport
204	Sewage Works

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Historical Mapping & Photography included:

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Lancashire And Furness	1:10,560	1848	3
Cheshire	1:10,560	1881 - 1882	4
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Cheshire	1:10,560	1911	9
Cheshire	1:10,560	1911	10
Lancashire And Furness	1:10,560	1929 - 1930	11
Lancashire And Furness	1:10,560	1929	12
Cheshire	1:10,560	1938 - 1951	13
Lancashire And Furness	1:10,560	1938	14
Lancashire And Furness	1:10,560	1951	15
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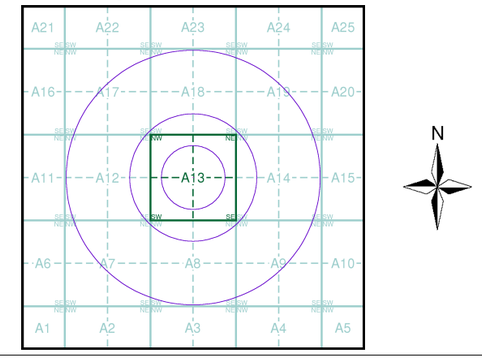
Ordnance Survey Plan	1:10,000	1955 - 1956	17
Ordnance Survey Plan	1:10,000	1959	18
Ordnance Survey Plan	1:10,000	1971 - 1979	19
Manchester	1:25,000	1975	20
Ordnance Survey Plan	1:10,000	1982 - 1984	21
Ordnance Survey Plan	1:10,000	1990	22
10K Raster Mapping	1:10,000	1999	23
10K Raster Mapping	1:10,000	2006	24
VectorMap Local	1:10,000	2019	25

Russian Map - Slice A



Order Details

Order Number:	214988853_1_1
Customer Ref:	193237
National Grid Reference:	374450, 396880
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

1, Avroe Road, Eccles, MANCHESTER, M30 7WH

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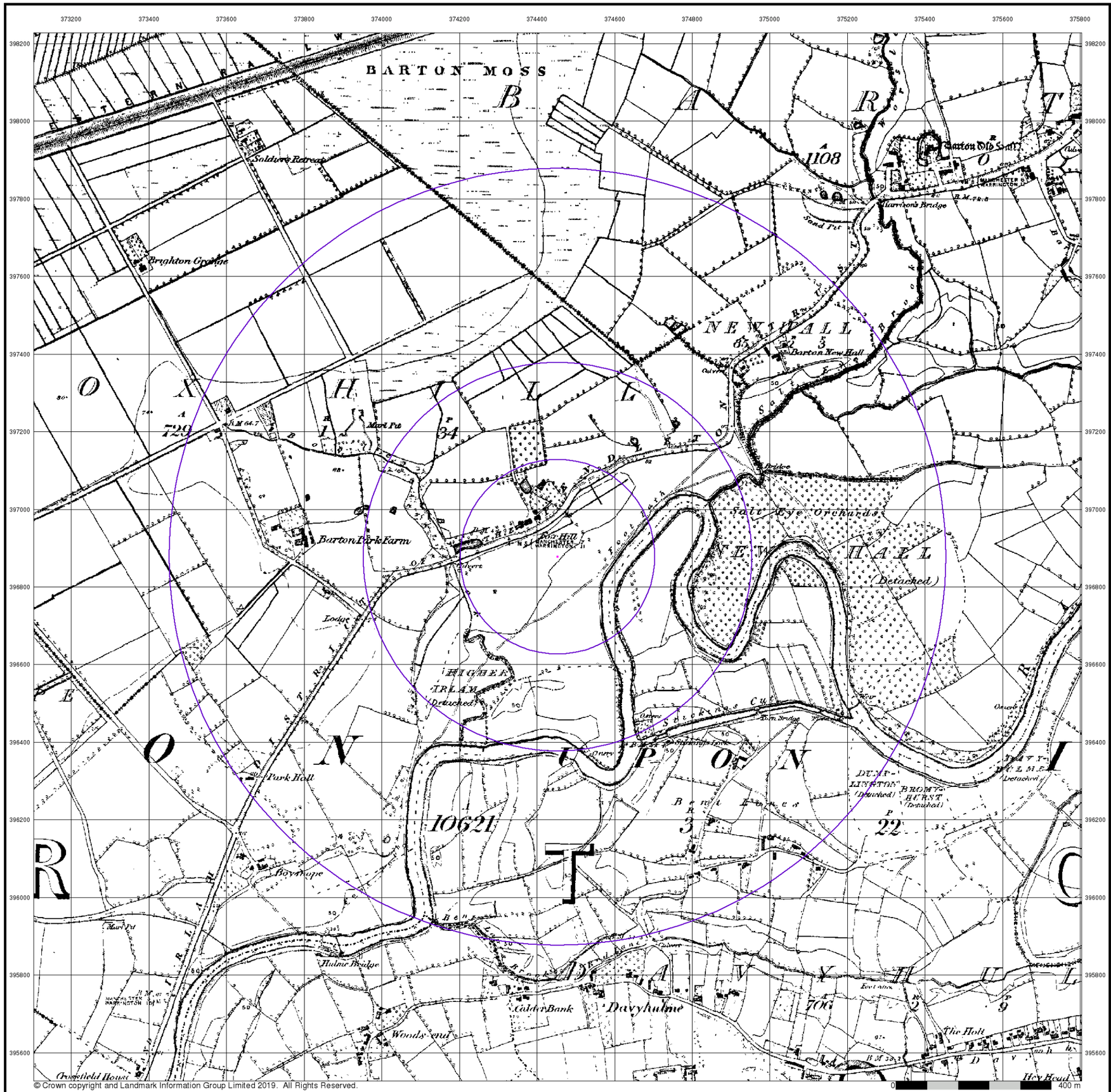
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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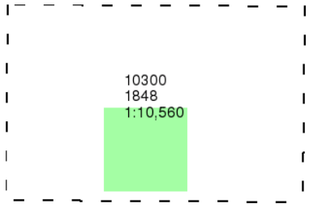
Lancashire And Furness

Published 1848

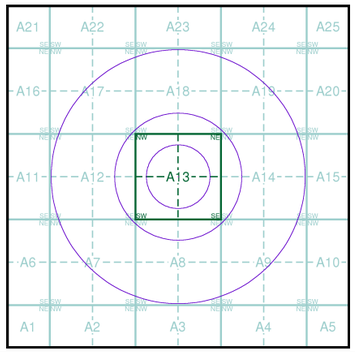
Source map scale - 1:10,560

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 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 1:10,560 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)



Historical Map - Slice A



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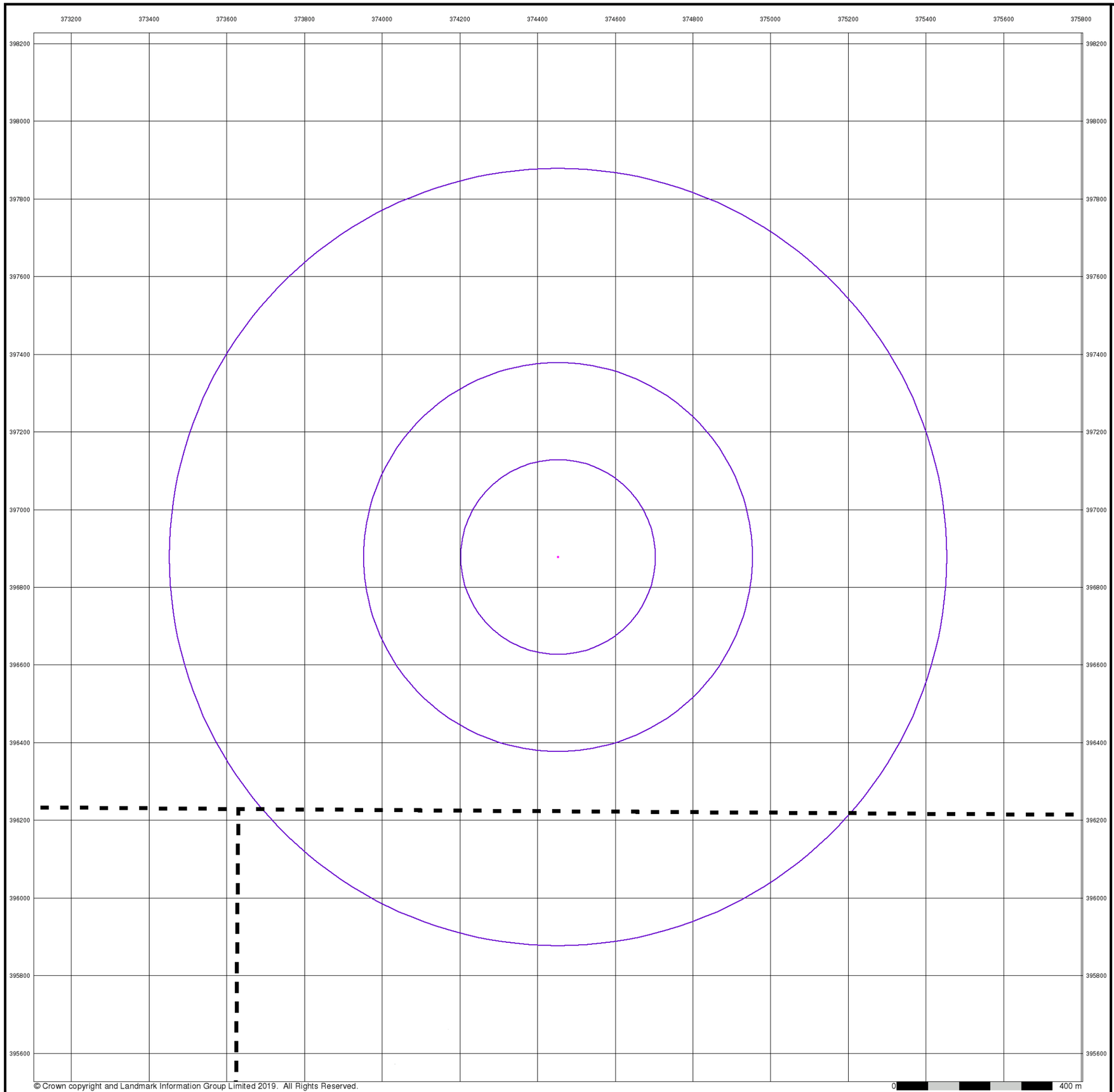

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Cheshire

Published 1881 - 1882

Source map scale - 1:10,560

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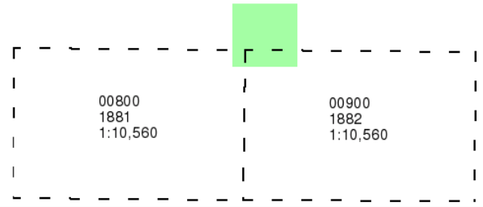
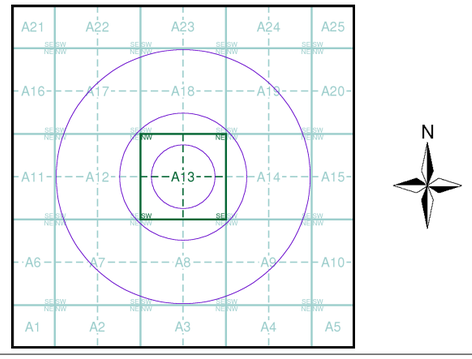


Historical Map - Slice A



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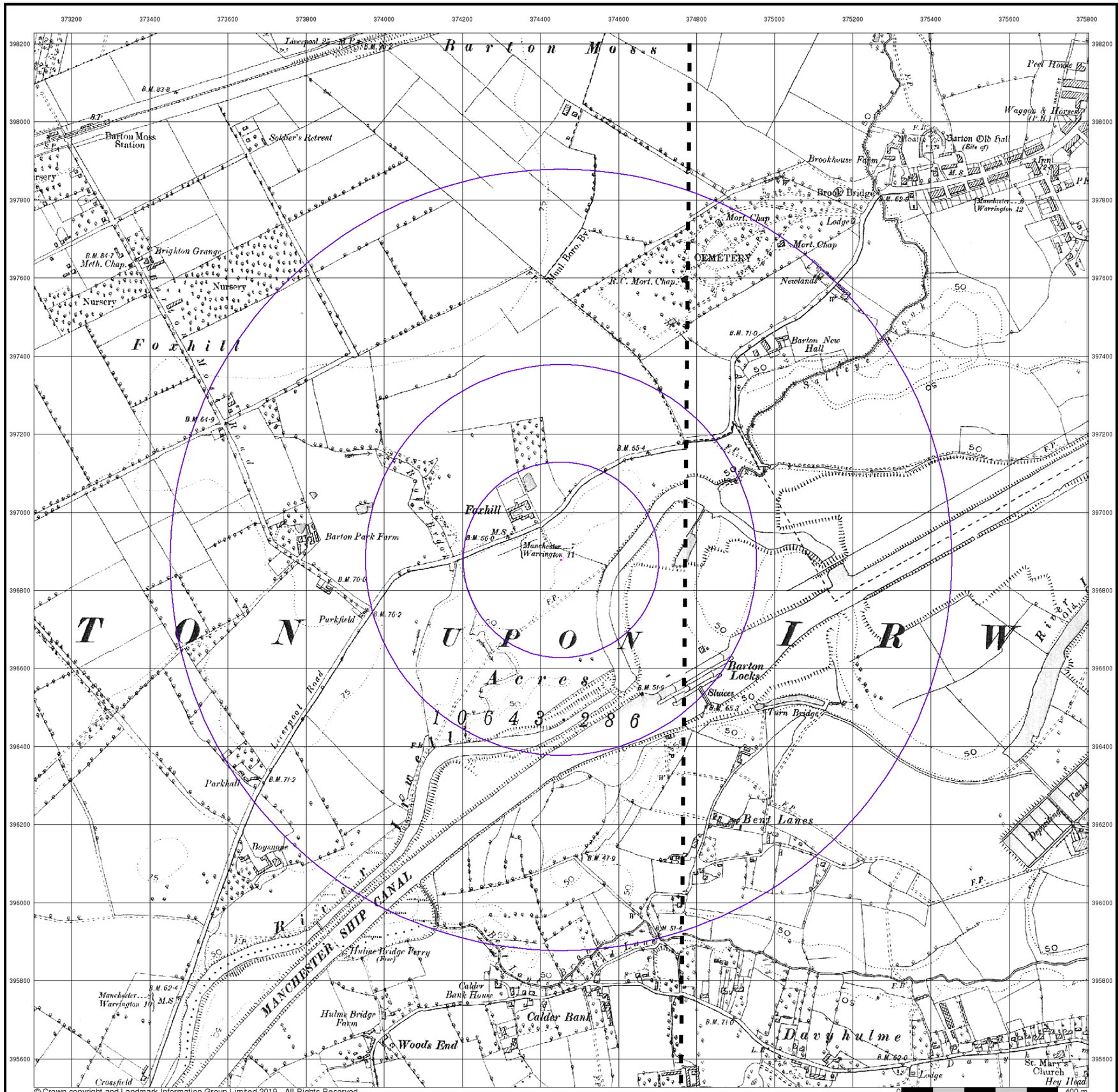

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Lancashire And Furness

Published 1896

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 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 1:10,560 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.

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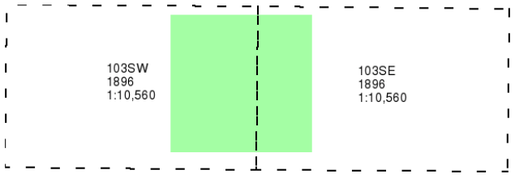
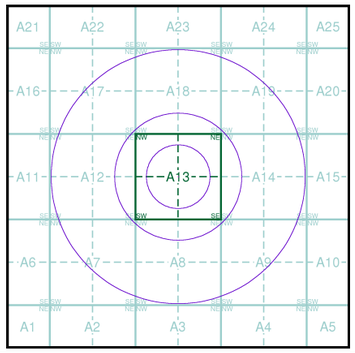


Historical Map - Slice A



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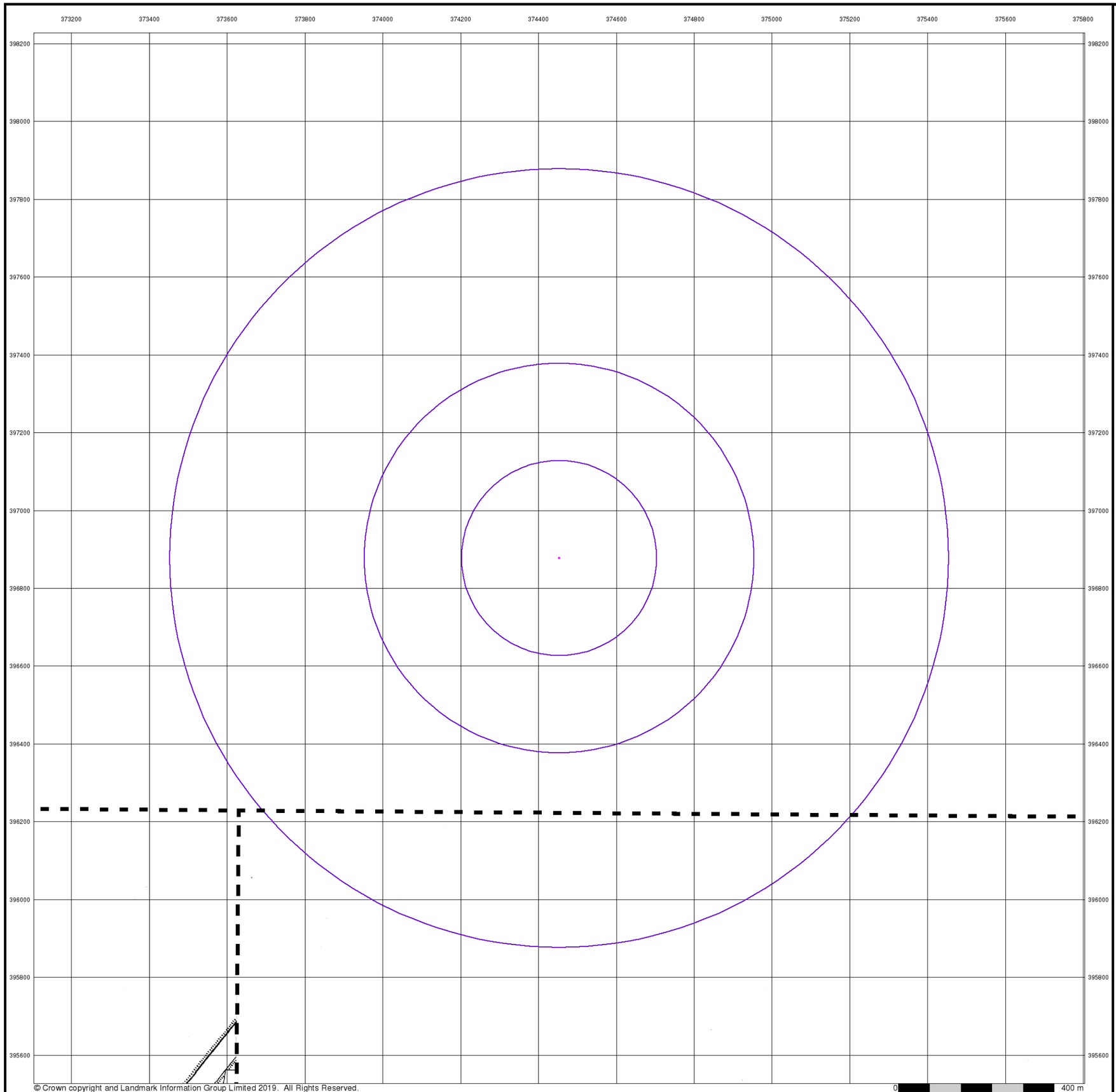

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LANDMARK INFORMATION GROUP®

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 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 1:10,560 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.

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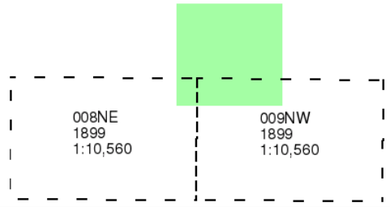
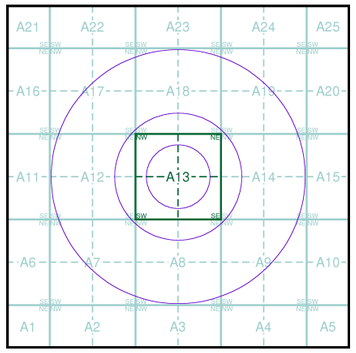


Historical Map - Slice A



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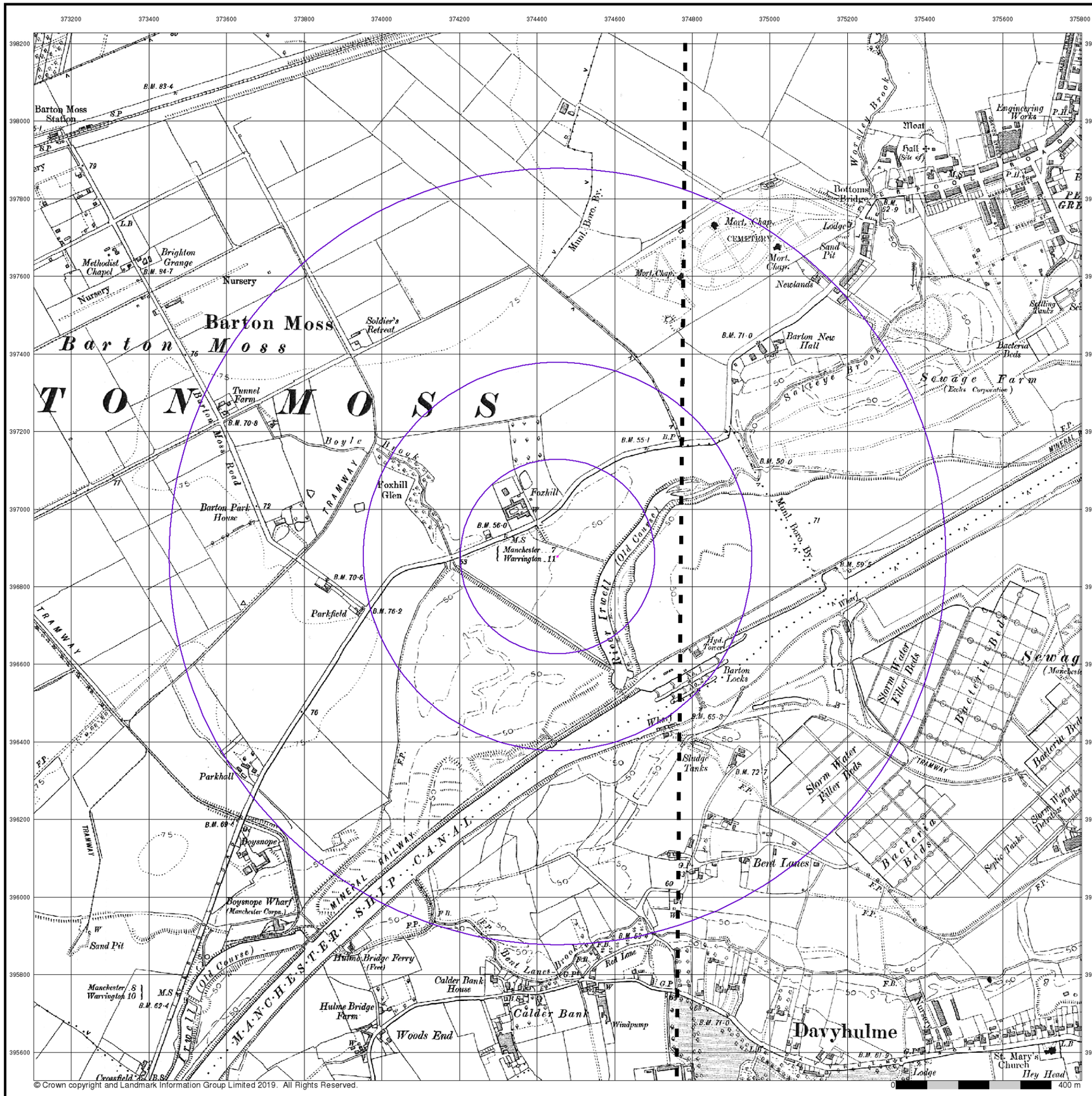

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Lancashire And Furness

Published 1909

Source map scale - 1:10,560

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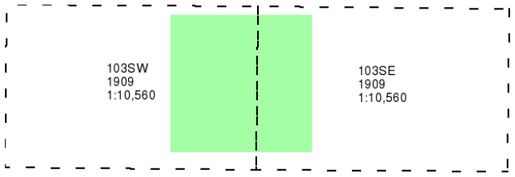
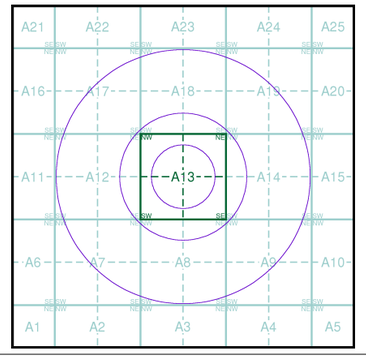


Historical Map - Slice A



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Customer Ref:	193237
National Grid Reference:	374450, 396880
Slice:	A
Site Area (Ha):	0.01
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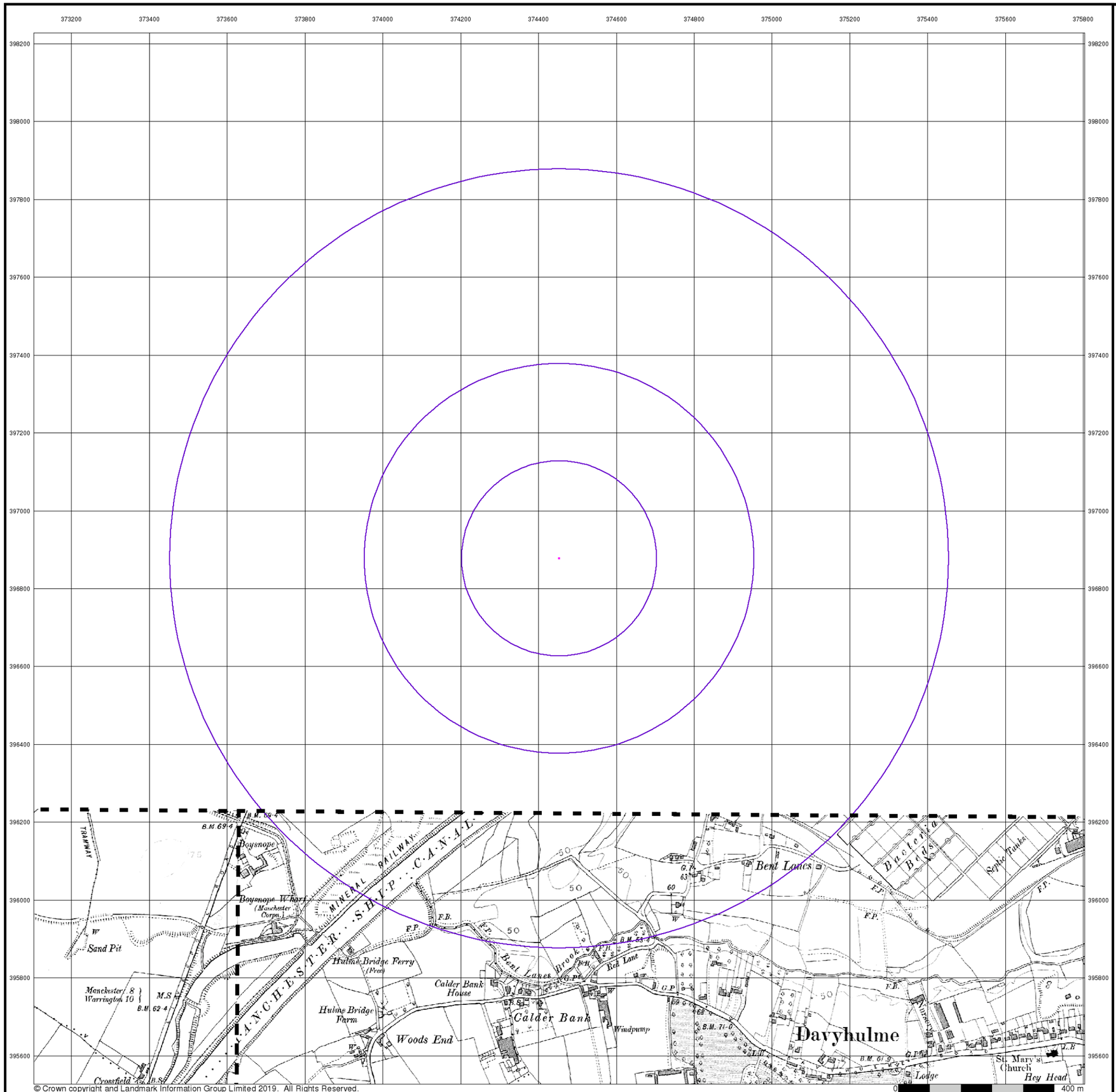

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LANDMARK INFORMATION GROUP®

Cheshire

Published 1911

Source map scale - 1:10,560

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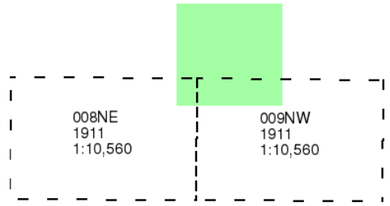

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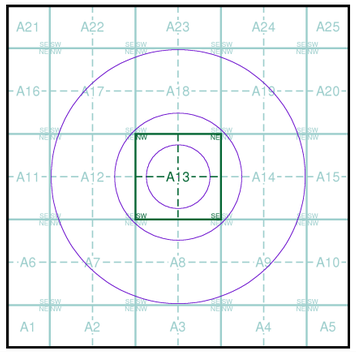

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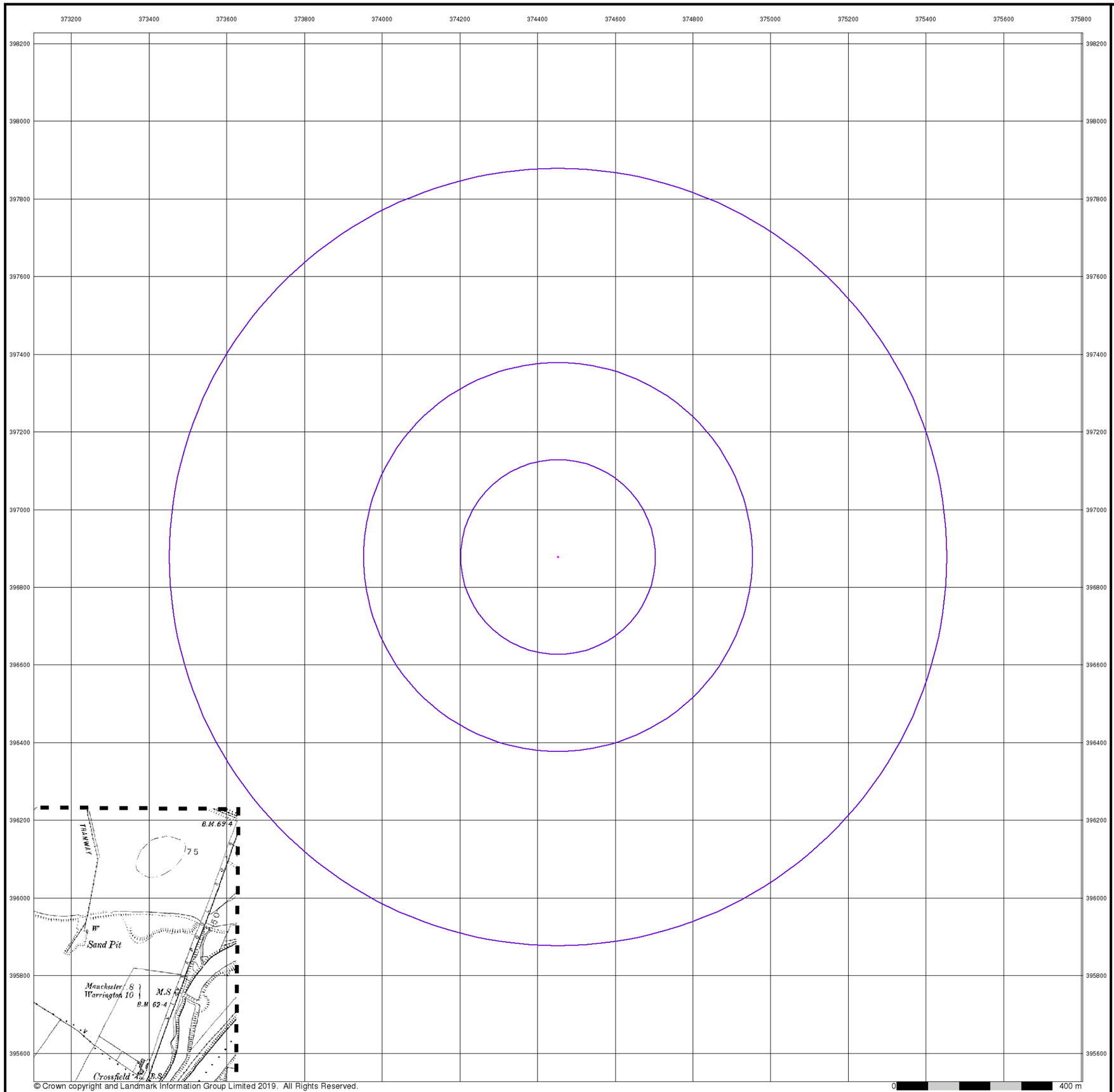

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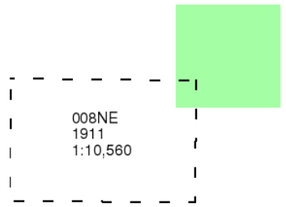

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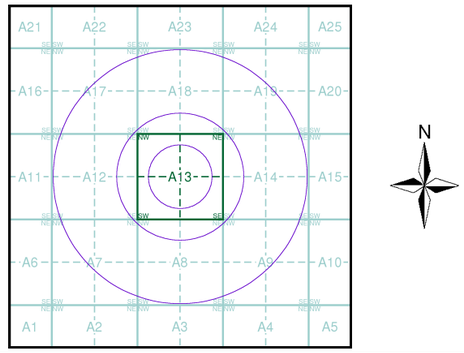

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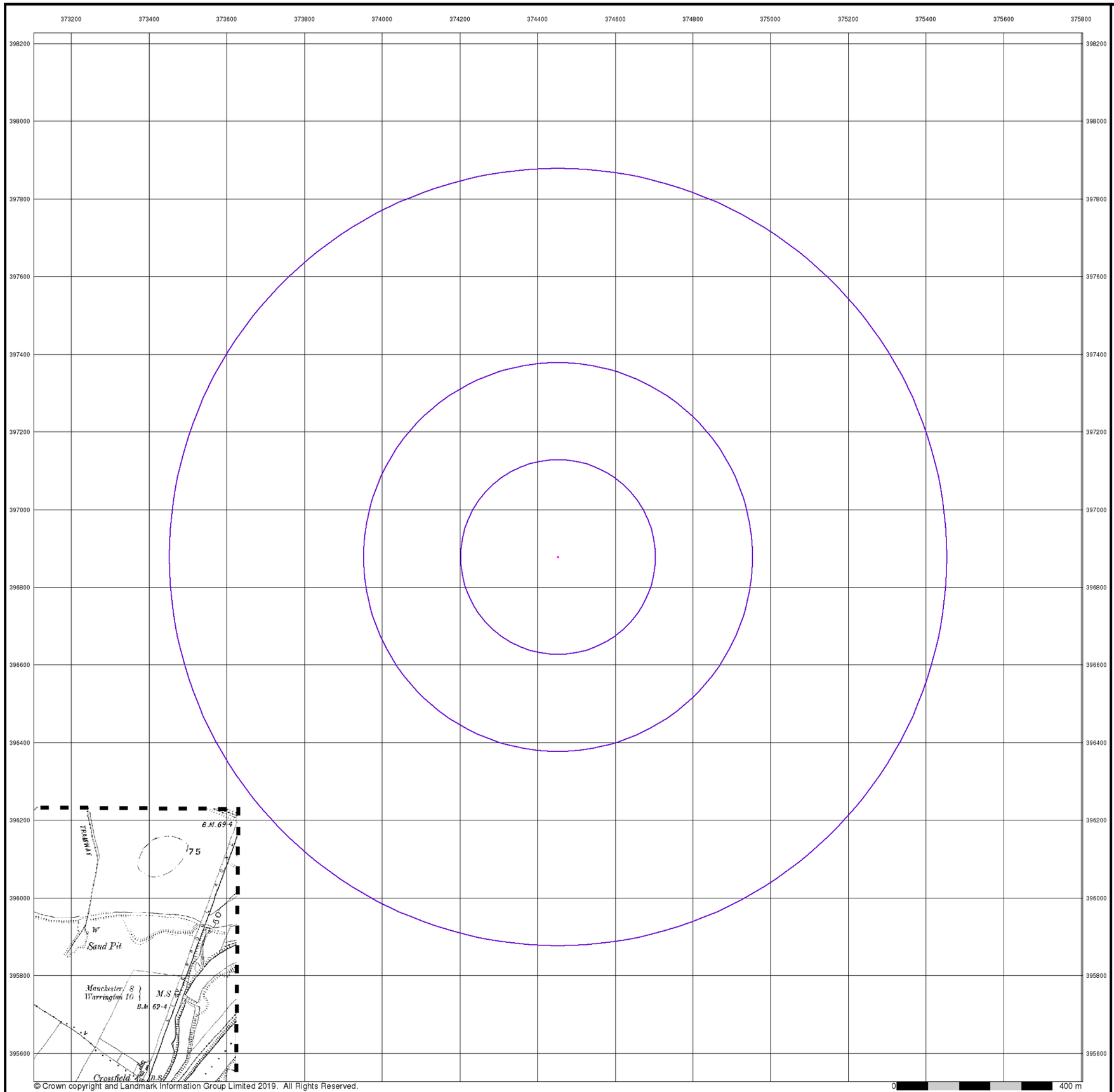

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Cheshire

Published 1911

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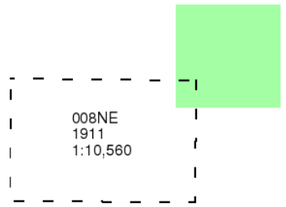

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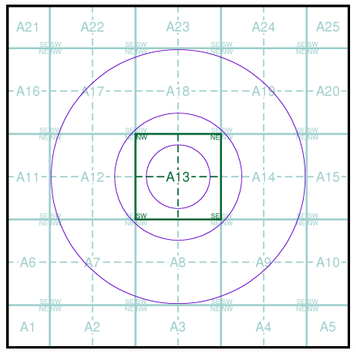

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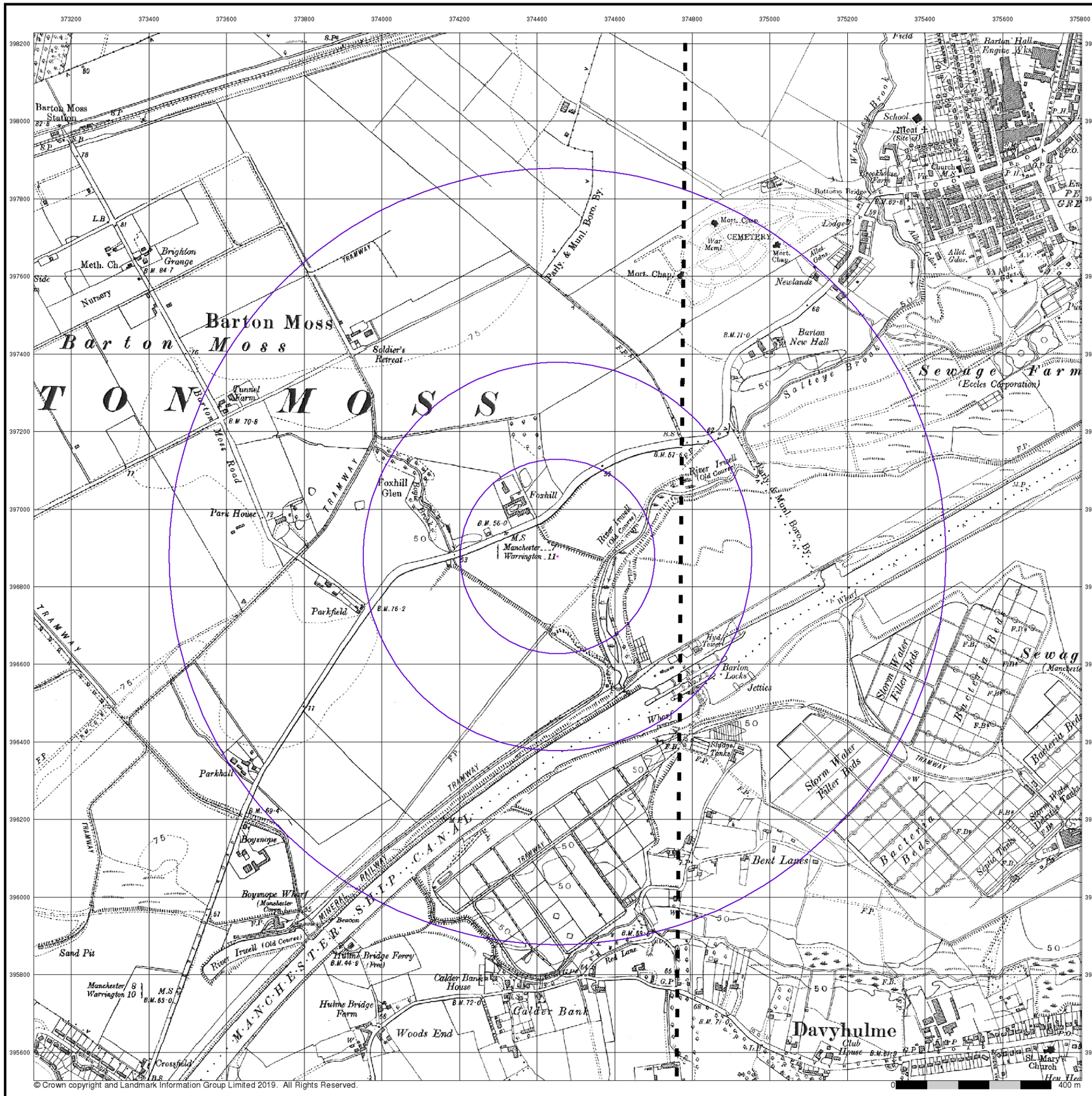

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Lancashire And Furness

Published 1929 - 1930

Source map scale - 1:10,560

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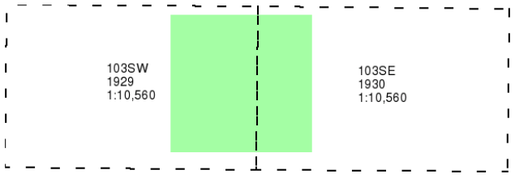

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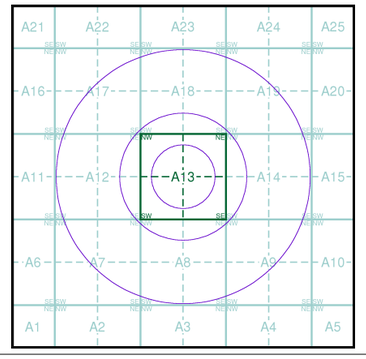

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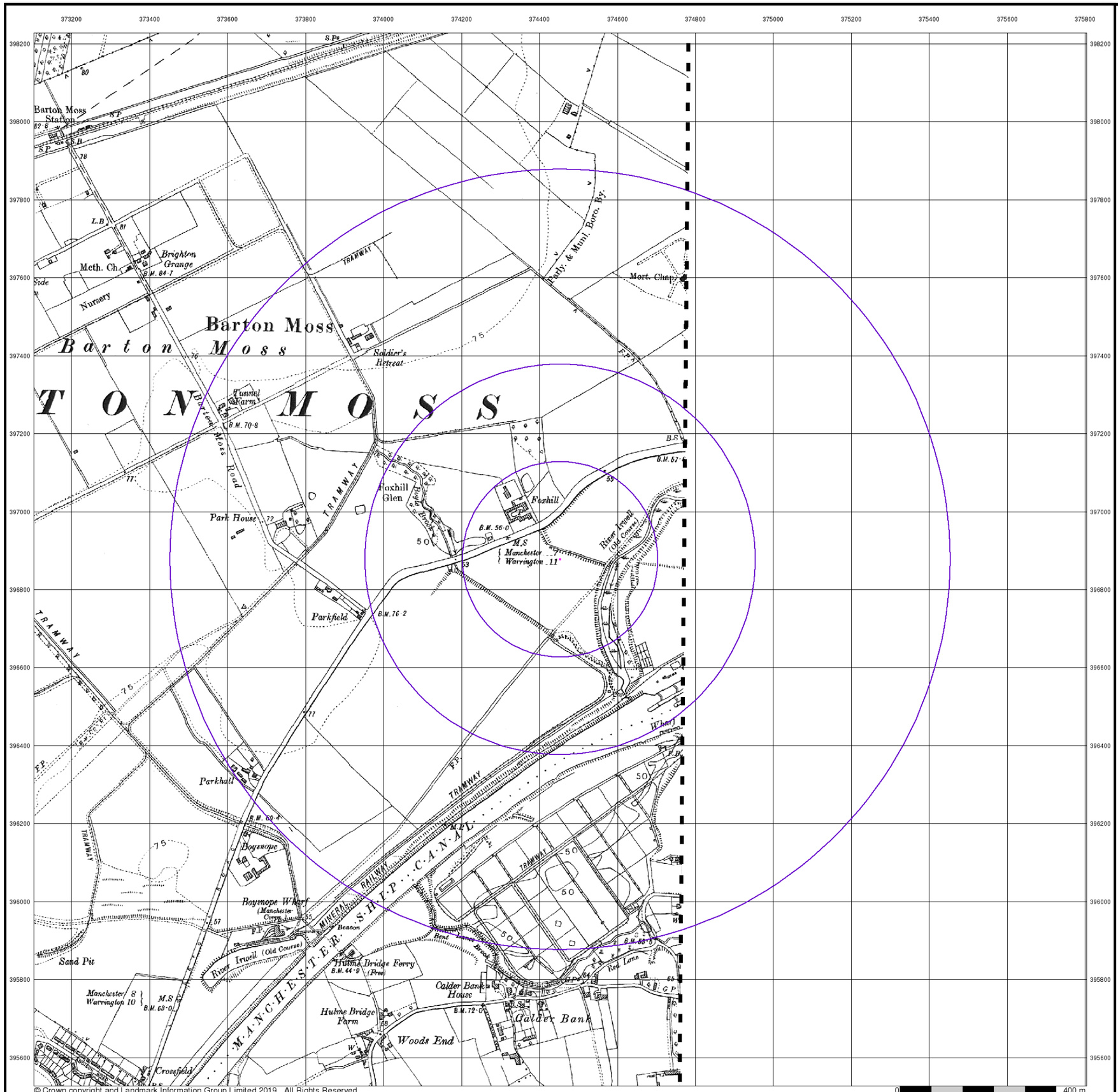

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LANDMARK INFORMATION GROUP®

Lancashire And Furness

Published 1929

Source map scale - 1:10,560

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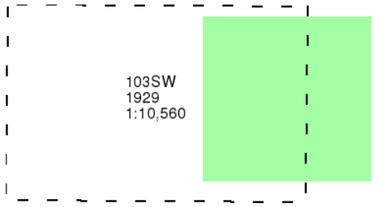
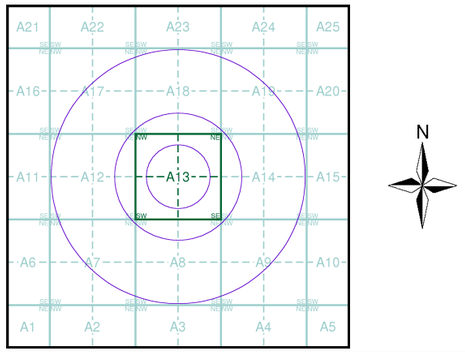


Historical Map - Slice A



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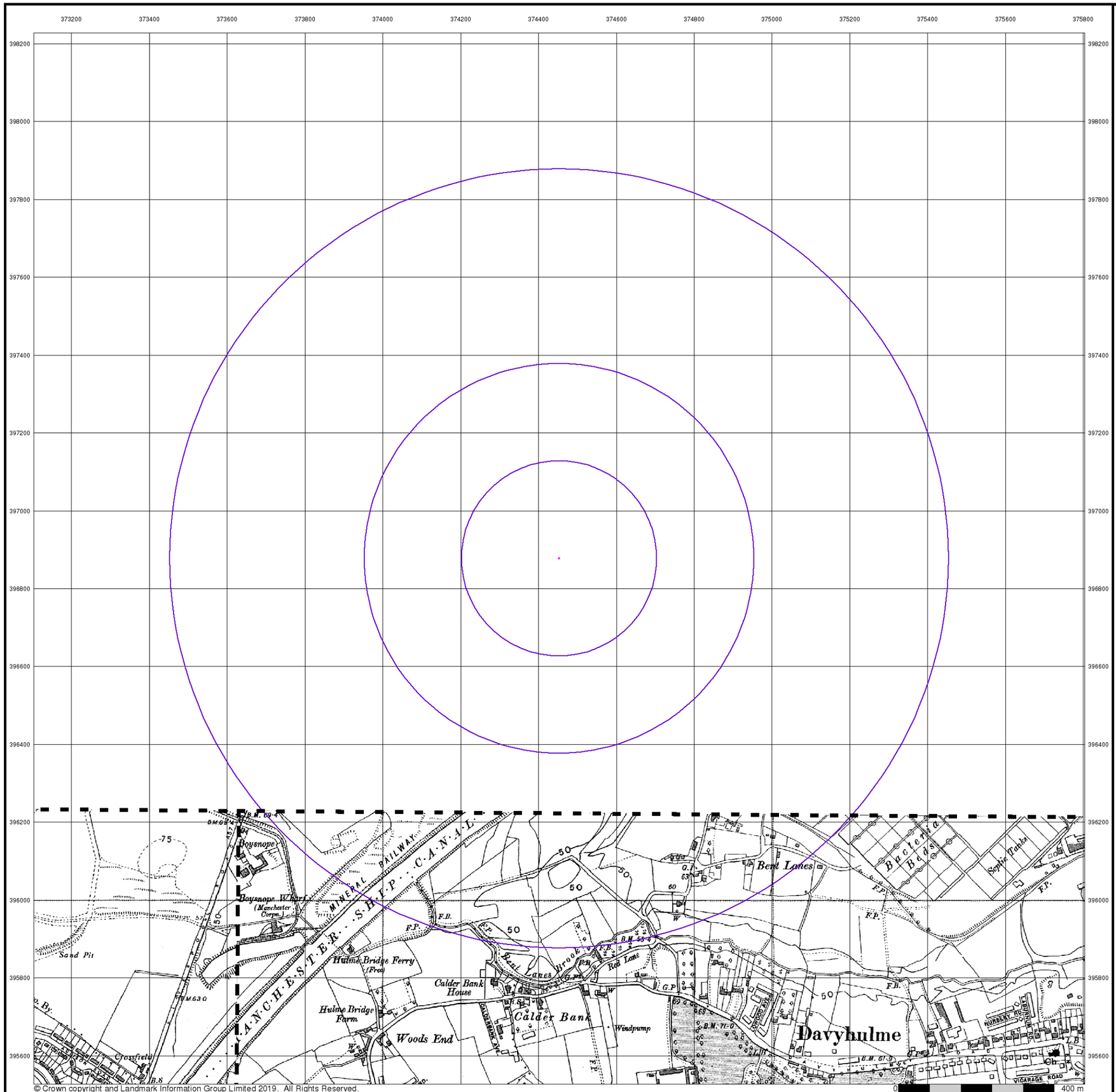

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LANDMARK INFORMATION GROUP®

Cheshire

Published 1938 - 1951

Source map scale - 1:10,560

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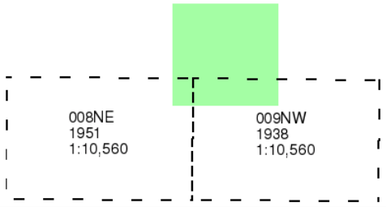
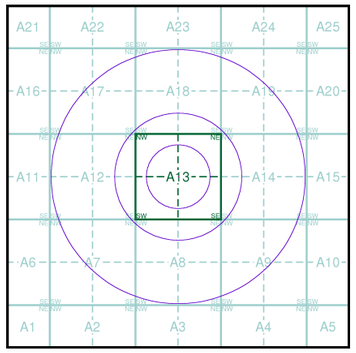


Historical Map - Slice A



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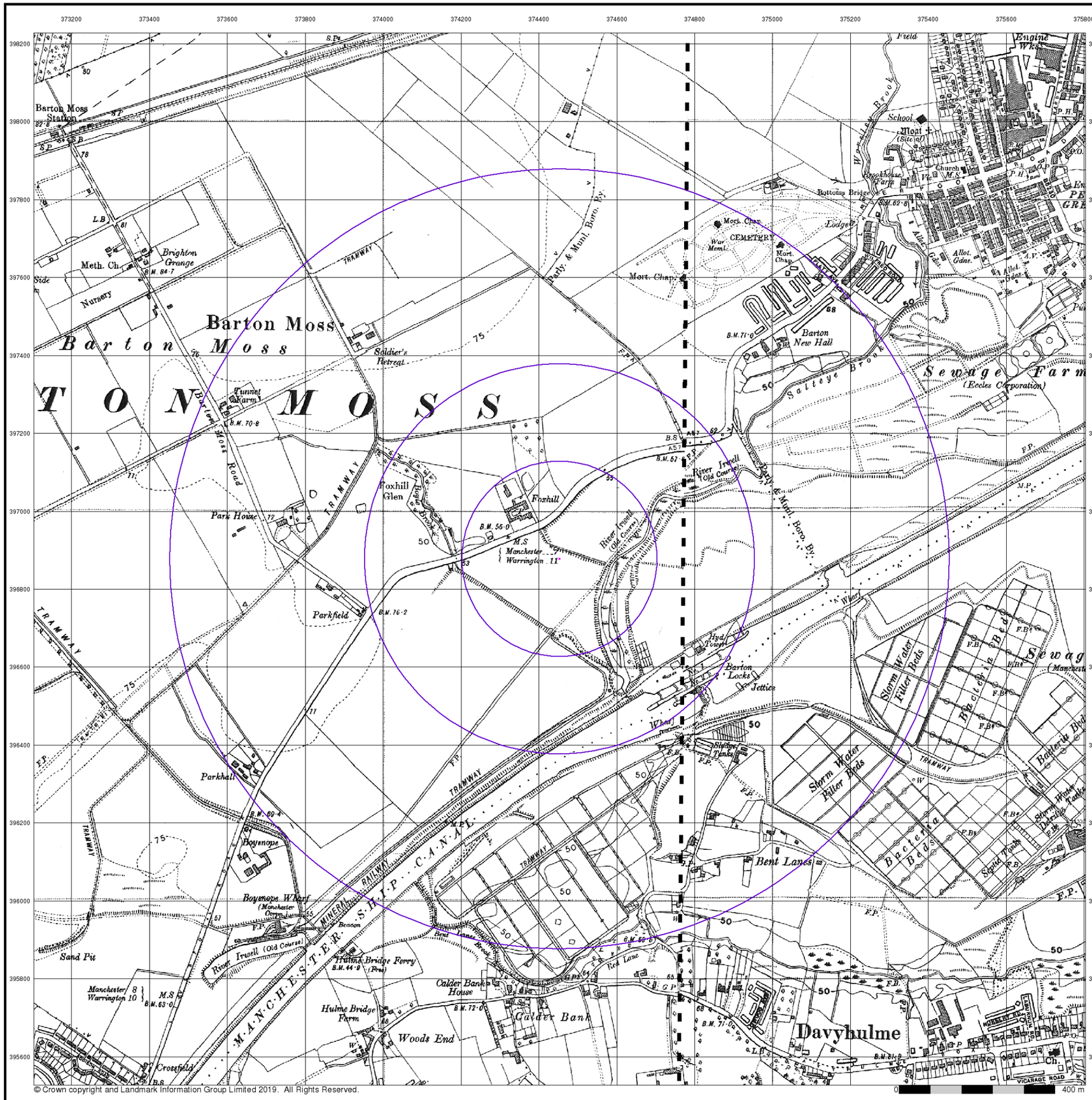

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Lancashire And Furness

Published 1938

Source map scale - 1:10,560

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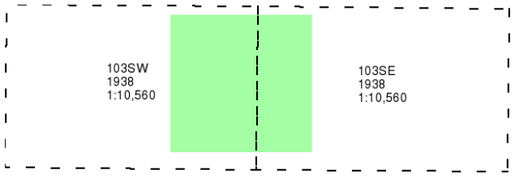
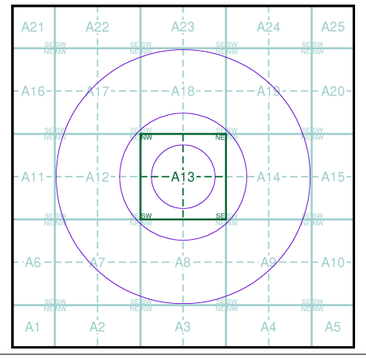


Historical Map - Slice A



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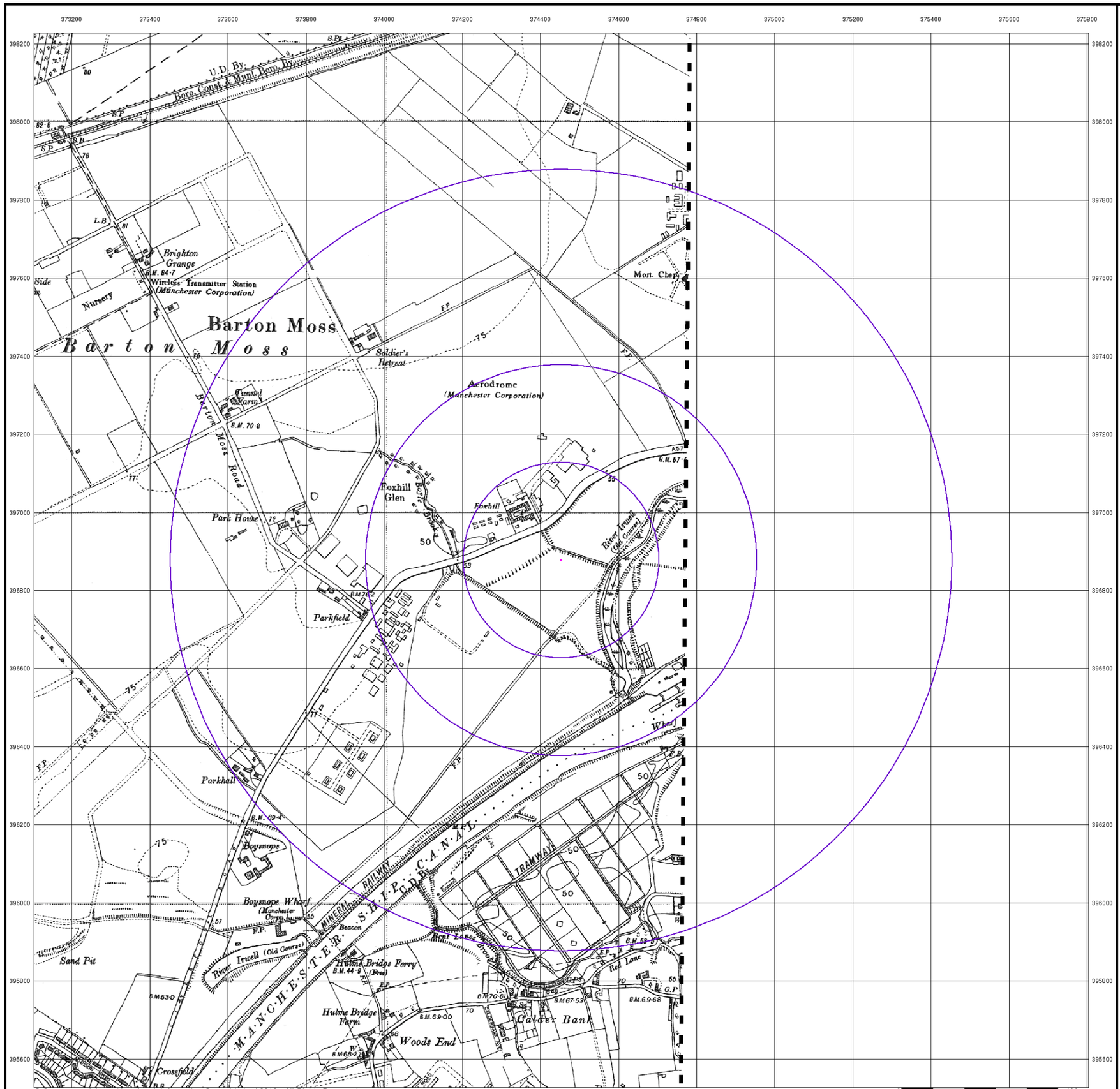

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Lancashire And Furness

Published 1951

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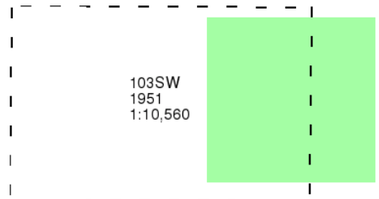

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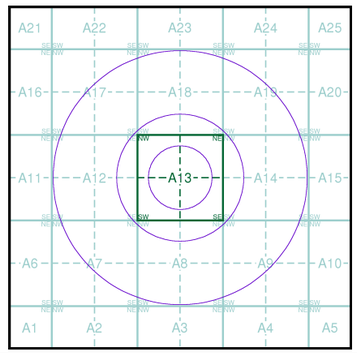

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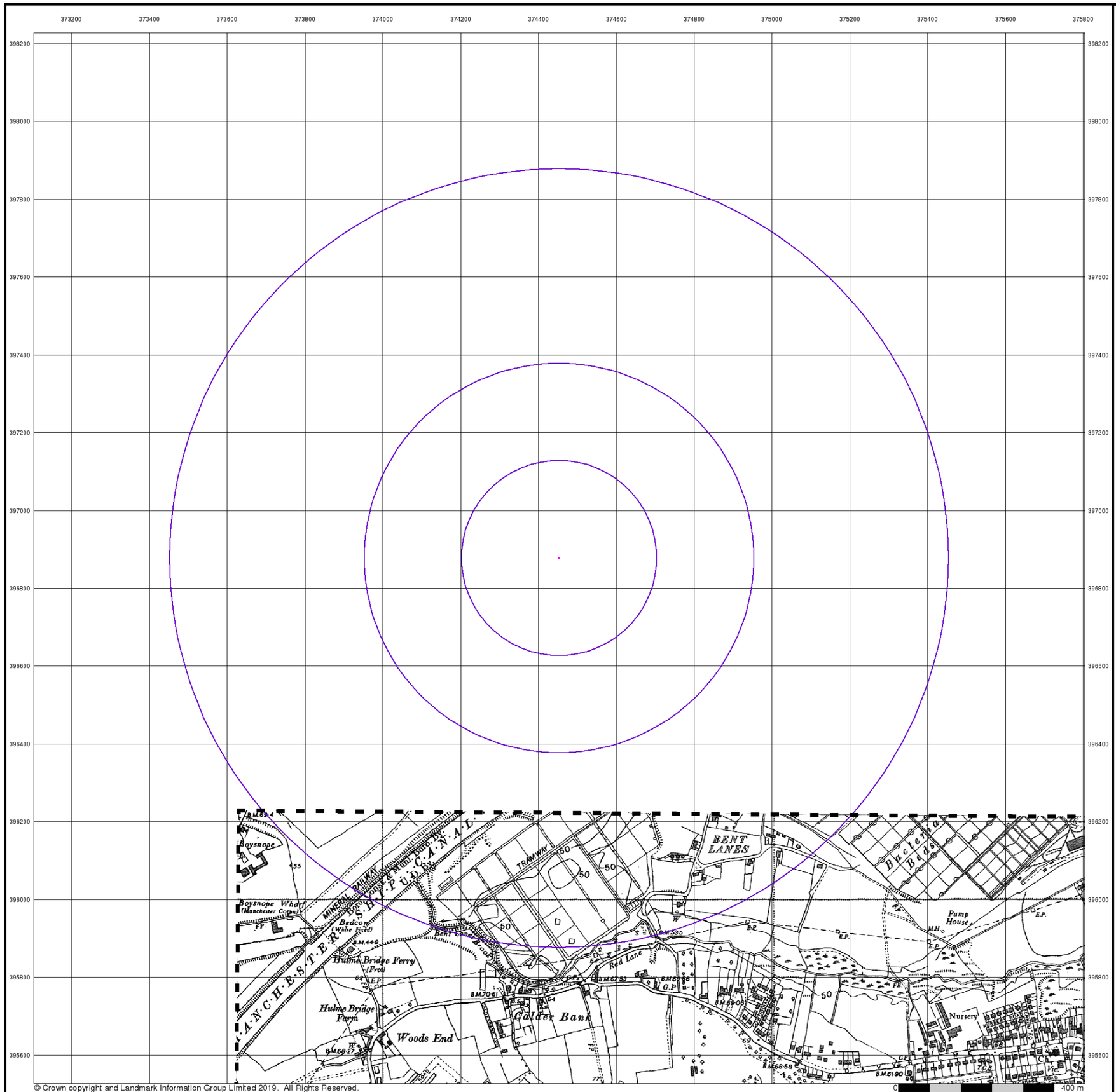

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LANDMARK INFORMATION GROUP®

Cheshire

Published 1951

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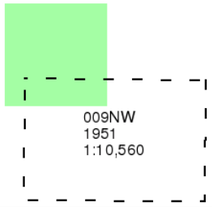

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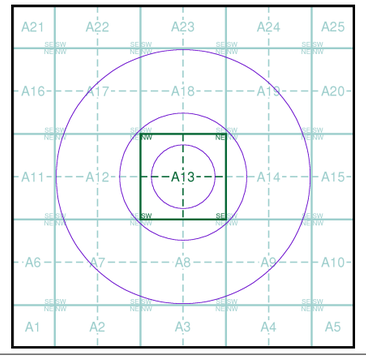

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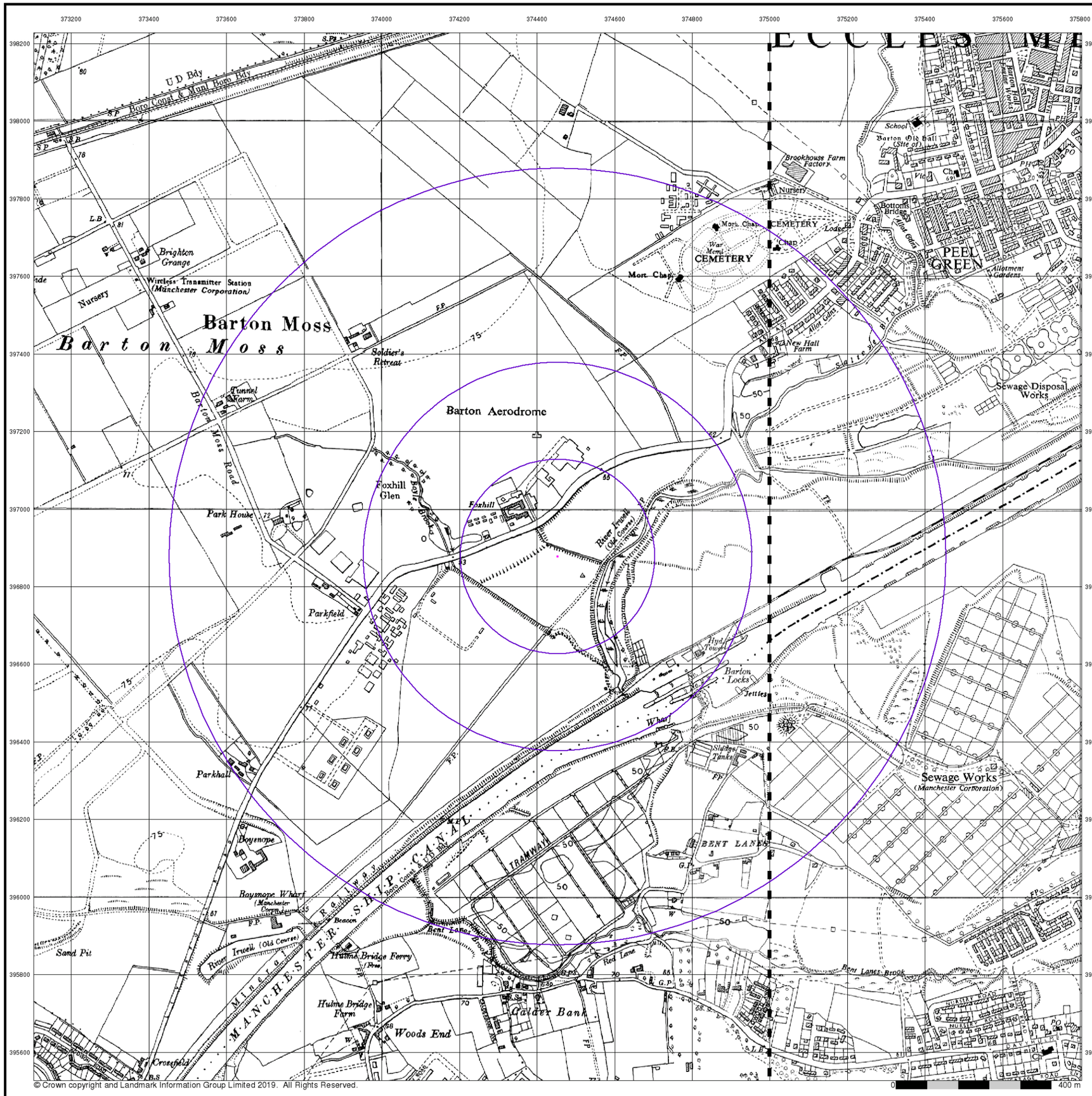

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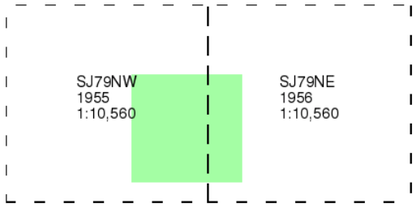
Ordnance Survey Plan

Published 1955 - 1956

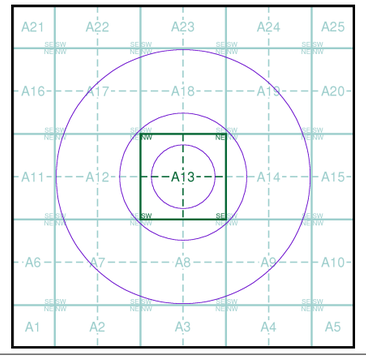
Source map scale - 1:10,000

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 1:10,560 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 1:10,560 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)



Historical Map - Slice A



Order Details

Order Number:	214988853_1_1
Customer Ref:	193237
National Grid Reference:	374450, 396880
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

1, Avroe Road, Eccles, MANCHESTER, M30 7WH

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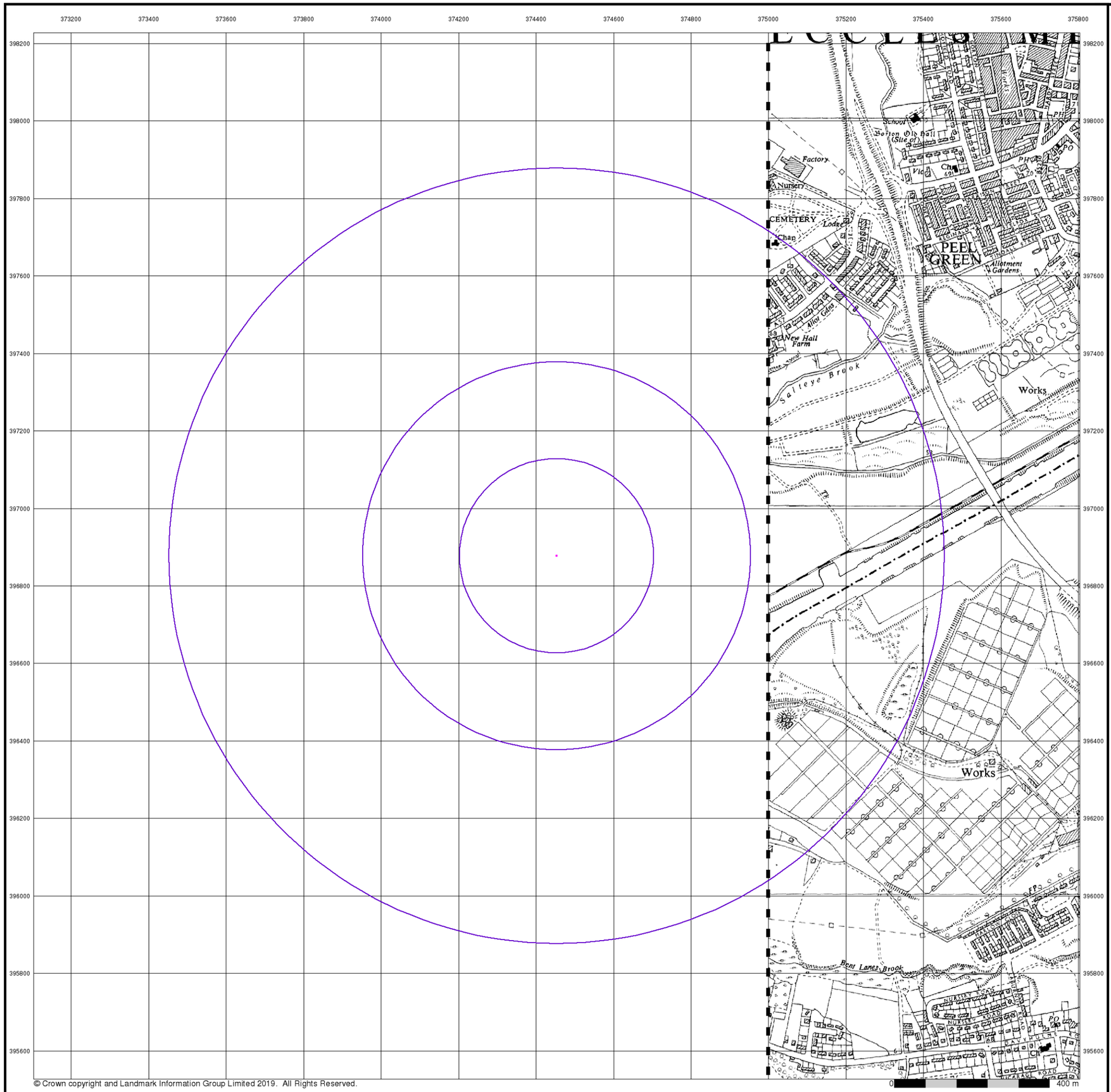
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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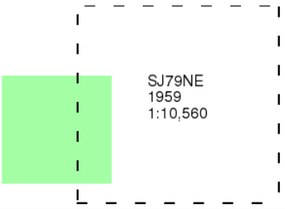
Ordnance Survey Plan

Published 1959

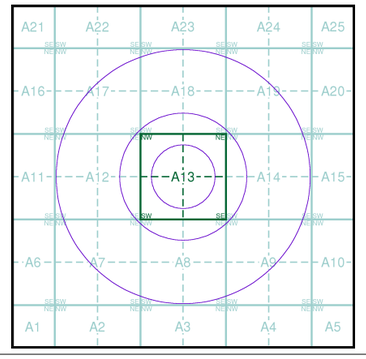
Source map scale - 1:10,000

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 1:10,560 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 1:10,560 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)



Historical Map - Slice A



Order Details

Order Number:	214988853_1_1
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National Grid Reference:	374450, 396880
Slice:	A
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Search Buffer (m):	1000

Site Details

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Ordnance Survey Plan

Published 1971 - 1979

Source map scale - 1:10,000

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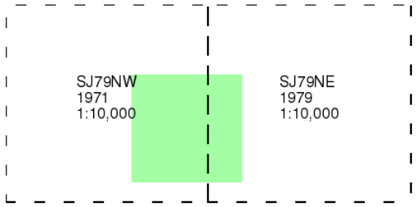
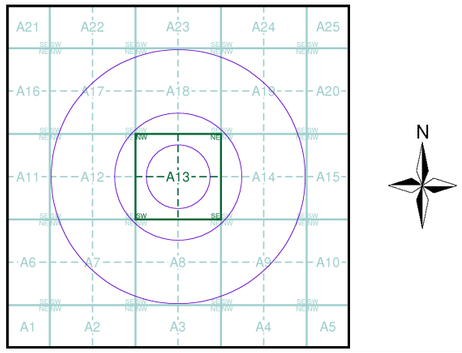
Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	214988853_1_1
Customer Ref:	193237
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Slice:	A
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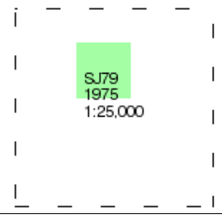
Manchester

Published 1975

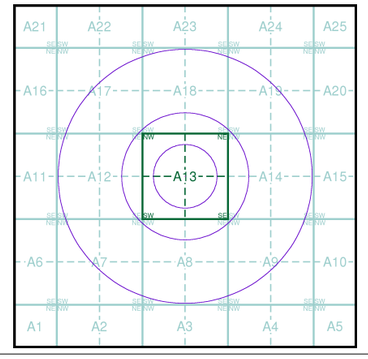
Source map scale - 1:25,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



Order Details

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Ordnance Survey Plan

Published 1982 - 1984

Source map scale - 1:10,000

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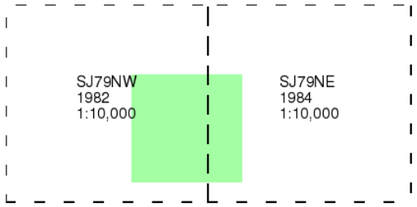
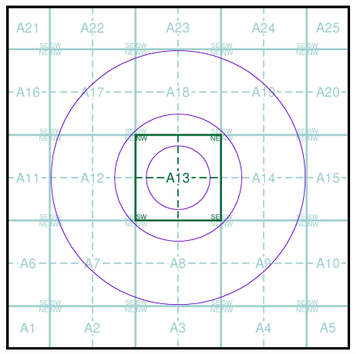


Historical Map - Slice A



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Search Buffer (m):	1000

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Ordnance Survey Plan

Published 1990

Source map scale - 1:10,000

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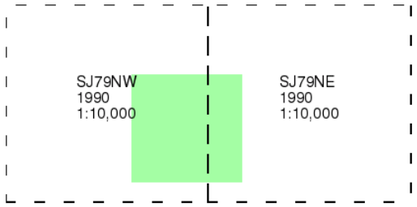
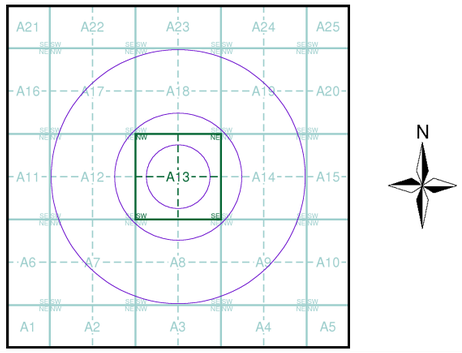


Historical Map - Slice A



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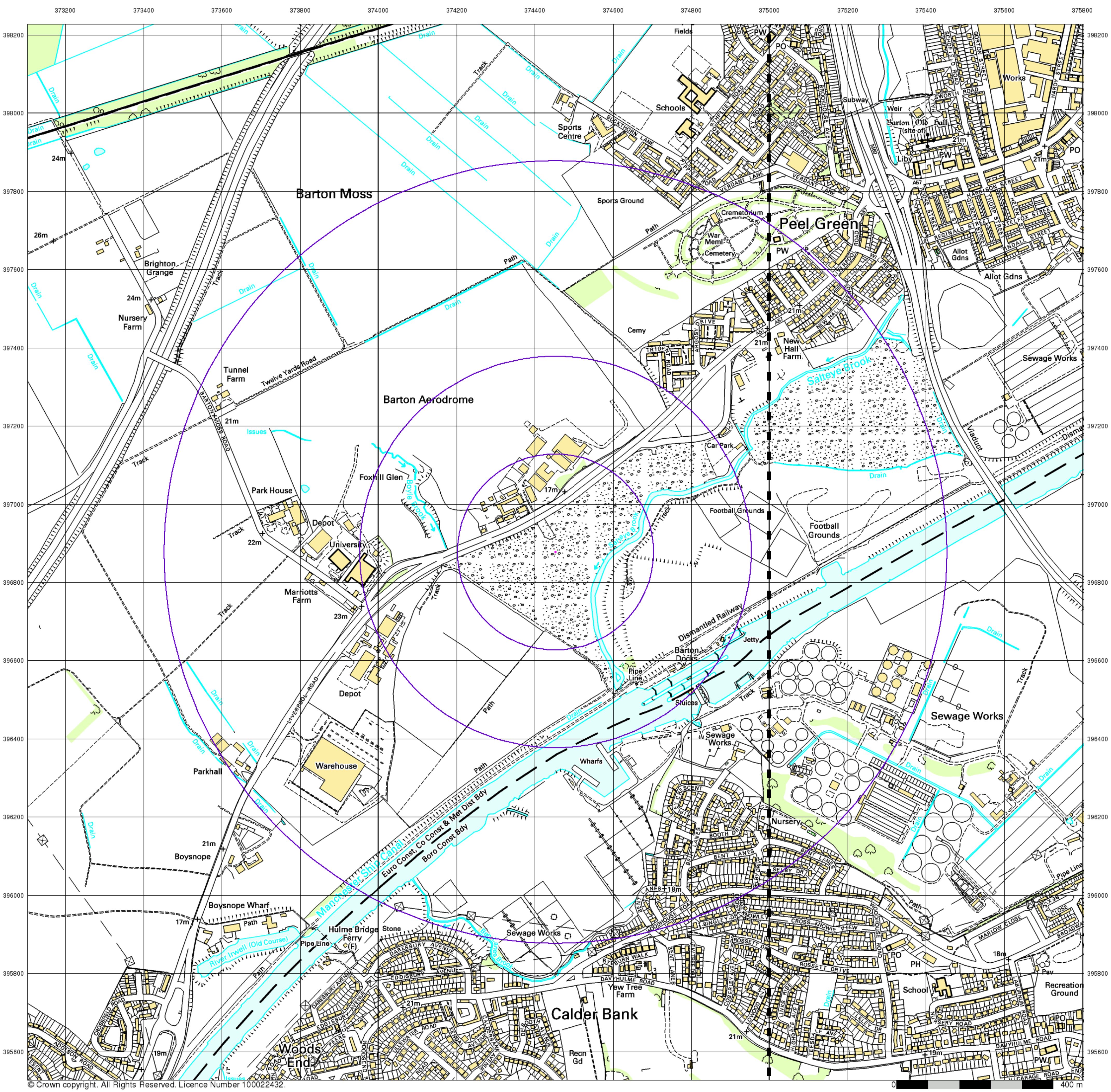


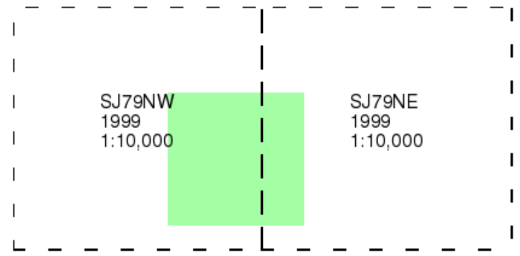
10k Raster Mapping

Published 1999

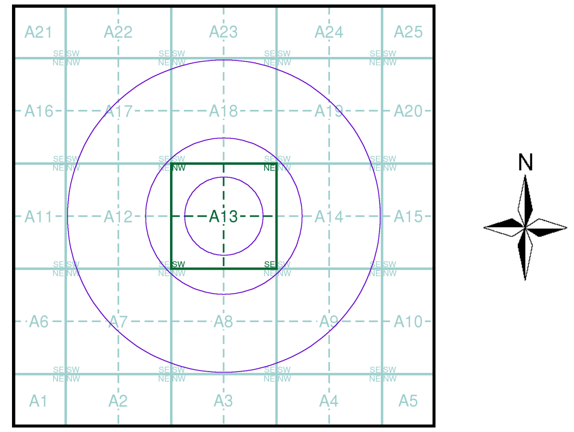
Source map scale - 1:10,000

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: 214988853_1_1
Customer Ref: 193237
National Grid Reference: 374450, 396880
Slice: A
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Site Details

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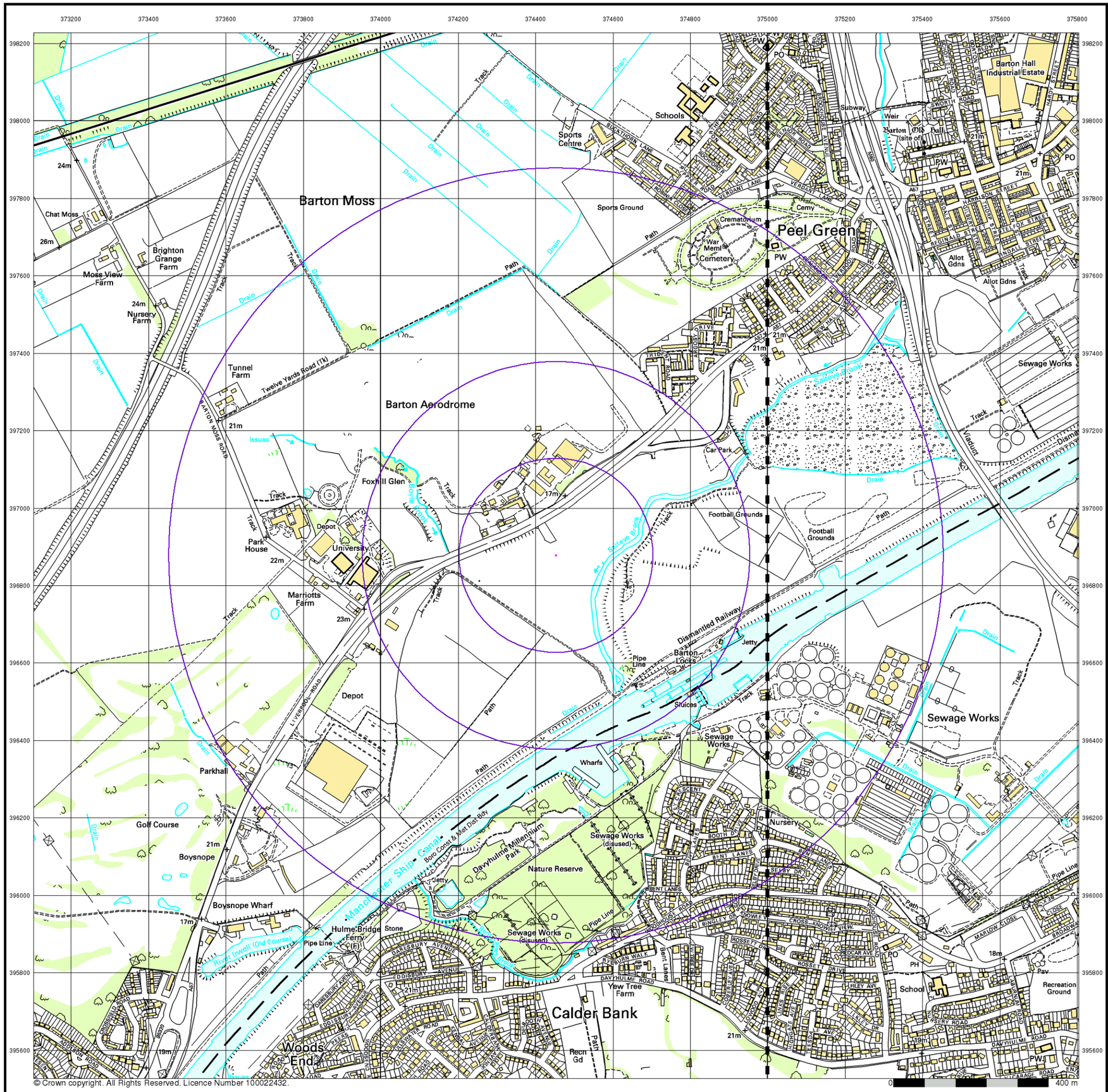

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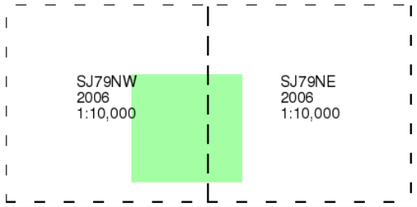
10k Raster Mapping

Published 2006

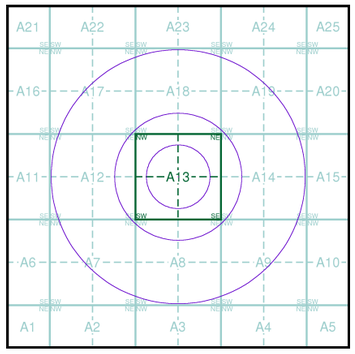
Source map scale - 1:10,000

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:	214988853_1_1
Customer Ref:	193237
National Grid Reference:	374450, 396880
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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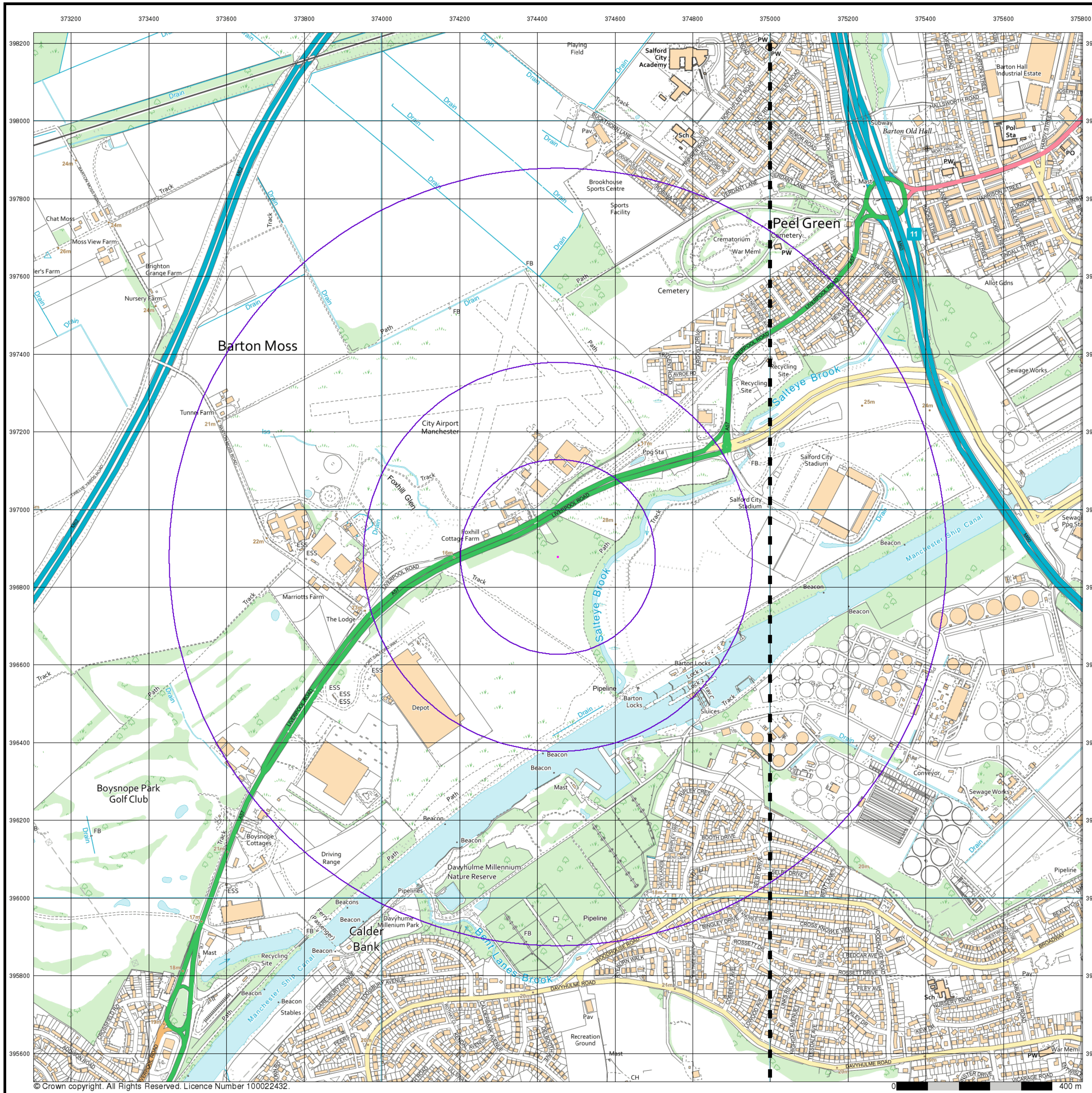


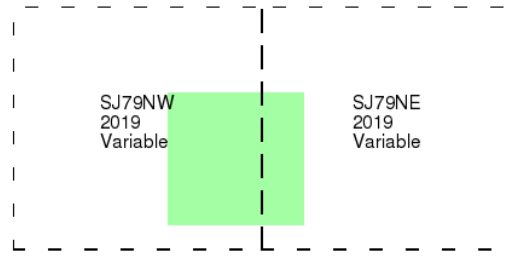
VectorMap Local

Published 2019

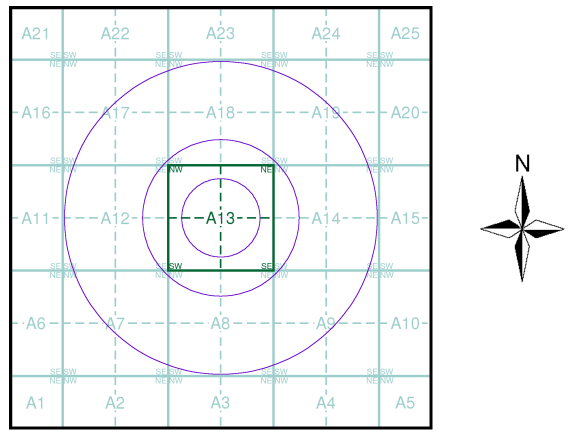
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice A



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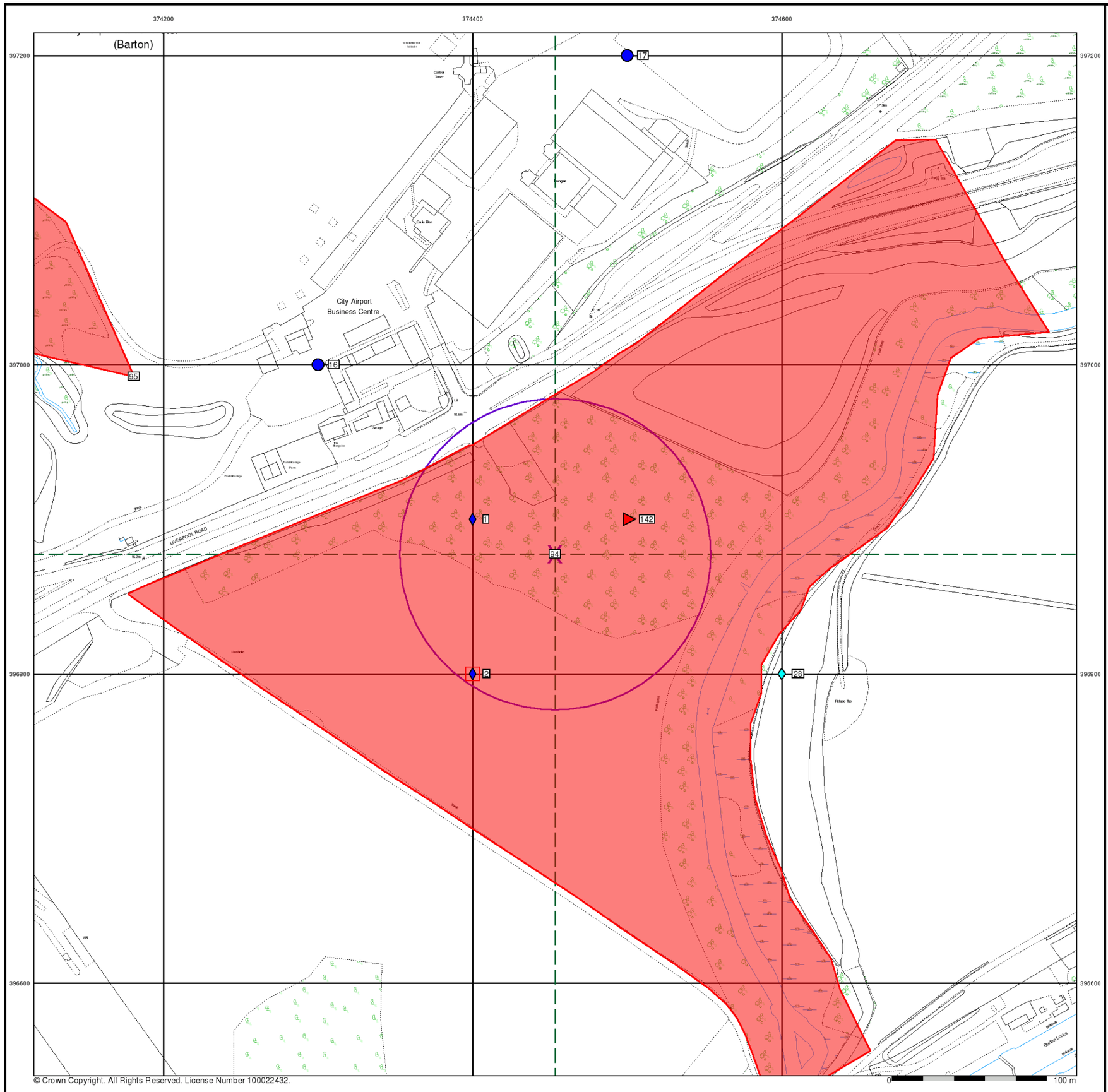

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

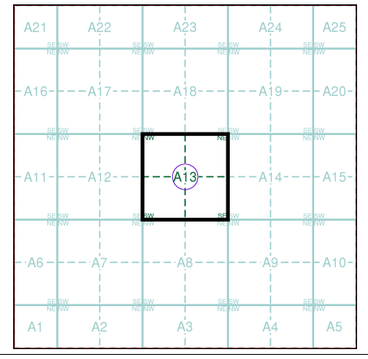
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A13



Order Details

Order Number:	214988853_1_1
Customer Ref:	193237
National Grid Reference:	374450, 396880
Slice:	A
Site Area (Ha):	0.01
Plot Buffer (m):	100

Site Details

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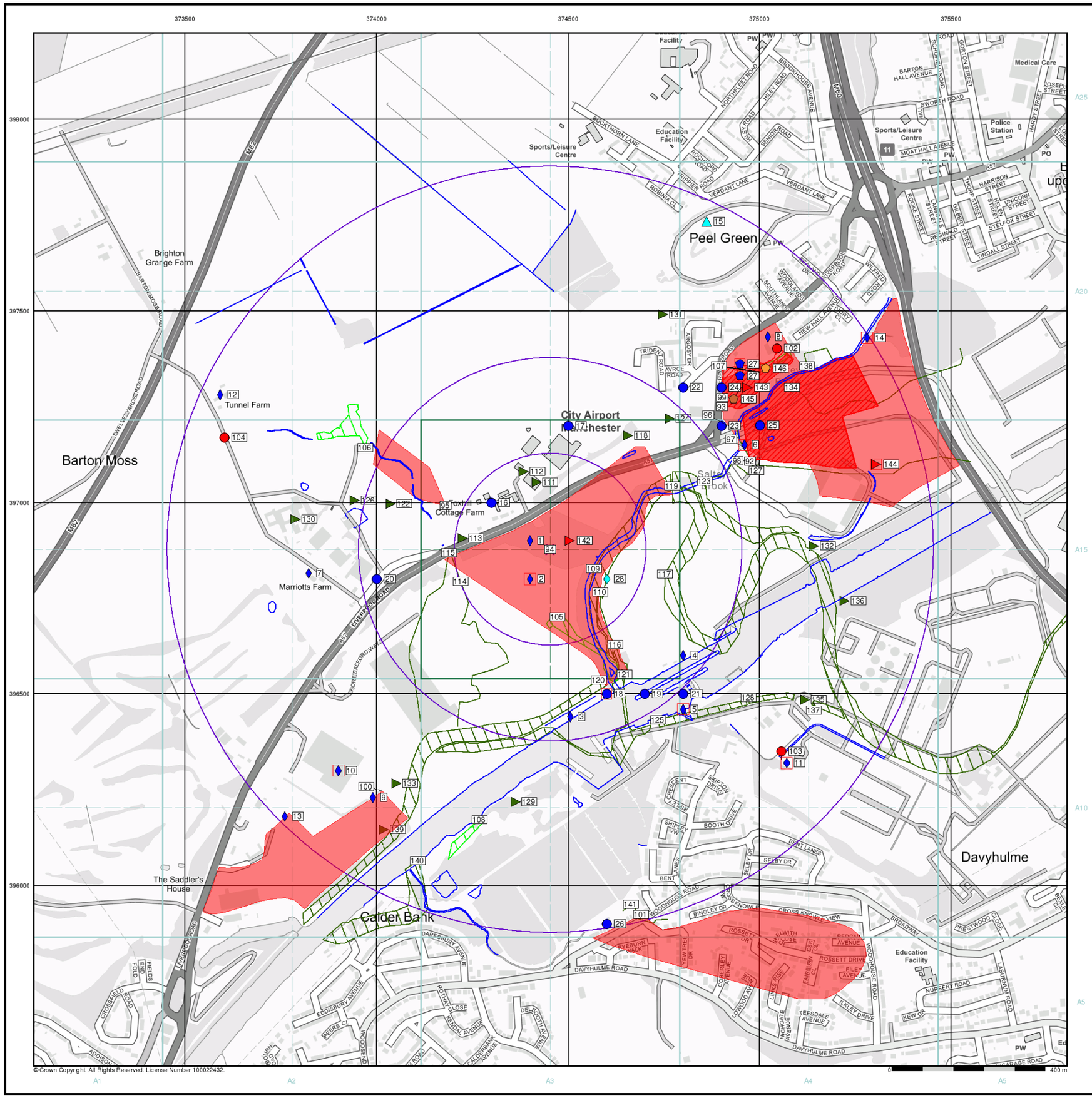

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General

Specified Site
Specified Buffer(s)
Bearing Reference Point
Map ID
Several of Type at Location

Agency and Hydrological

Contaminated Land Register Entry or Notice (Location)
Contaminated Land Register Entry or Notice
Discharge Consent
Enforcement or Prohibition Notice
Integrated Pollution Control
Integrated Pollution Prevention Control
Local Authority Integrated Pollution Prevention and Control
Local Authority Pollution Prevention and Control
Local Authority Pollution Prevention and Control Enforcement
Pollution Incident to Controlled Waters
Prosecution Relating to Authorised Processes
Prosecution Relating to Controlled Waters
Registered Radioactive Substance
River Network or Water Feature
River Quality Sampling Point
Substantiated Pollution Incident Register
Water Abstraction
Water Industry Act Referral

Hazardous Substances

COMAH Site
Explosive Site
NIHHS Site
Planning Hazardous Substance Consent
Planning Hazardous Substance Enforcement

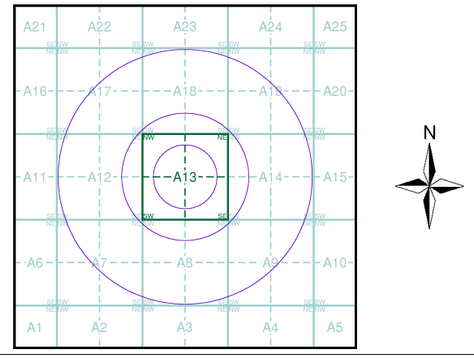
Geological

BGS Recorded Mineral Site

Waste

BGS Recorded Landfill Site (Location)
BGS Recorded Landfill Site
EA Historic Landfill (Buffered Point)
EA Historic Landfill (Polygon)
Integrated Pollution Control Registered Waste Site
Licensed Waste Management Facility (Landfill Boundary)
Licensed Waste Management Facility (Location)
Local Authority Recorded Landfill Site (Location)
Local Authority Recorded Landfill Site
Potentially Infilled Land (Non-water)
Potentially Infilled Land (Non-water)
Potentially Infilled Land (Non-water)
Potentially Infilled Land (Water)
Potentially Infilled Land (Water)
Potentially Infilled Land (Water)
Registered Landfill Site
Registered Landfill Site (Location)
Registered Landfill Site (Point Buffered to 100m)
Registered Landfill Site (Point Buffered to 250m)
Registered Waste Transfer Site (Location)
Registered Waste Transfer Site
Registered Waste Treatment or Disposal Site (Location)
Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



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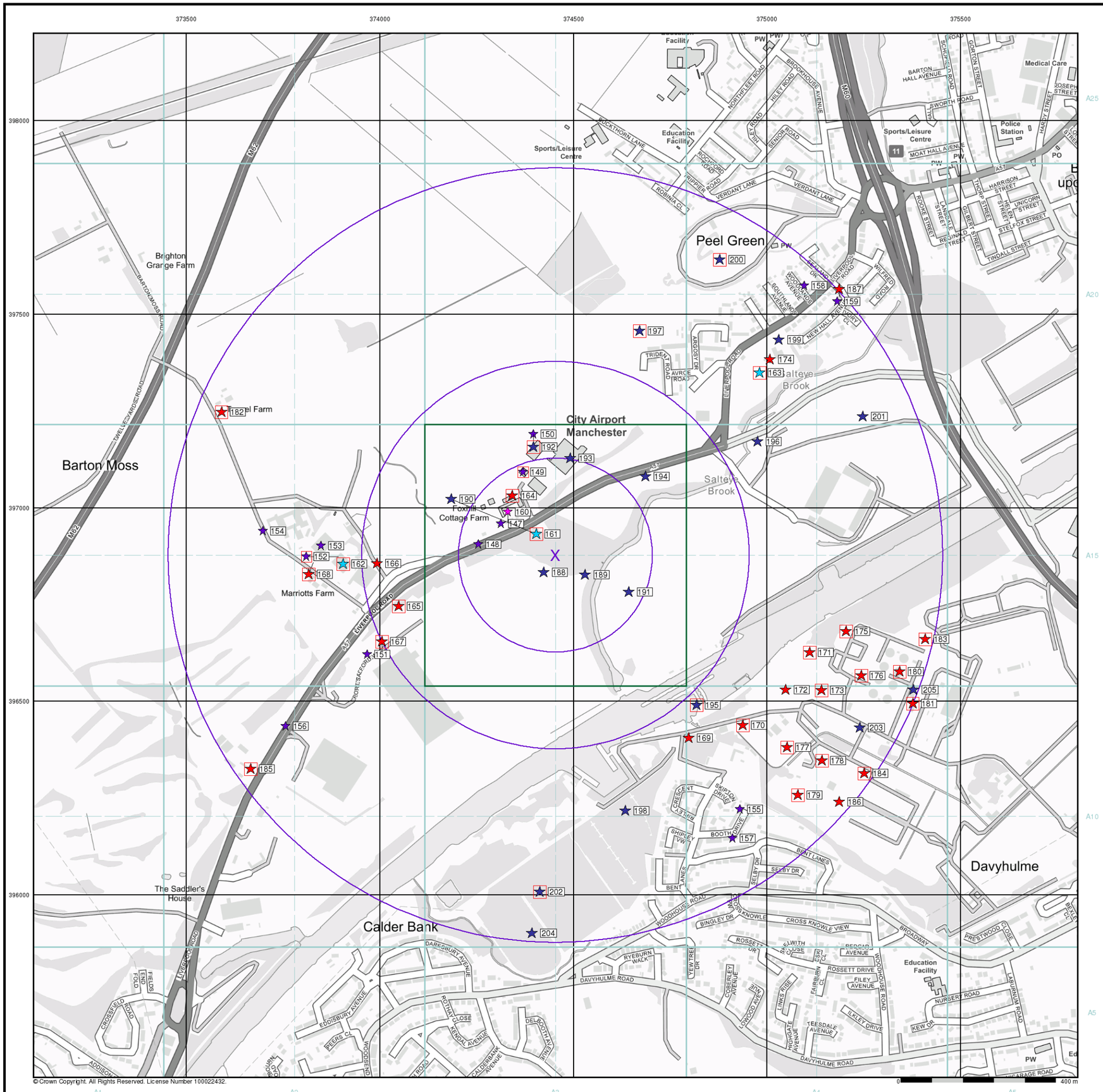

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Industrial Land Use Map

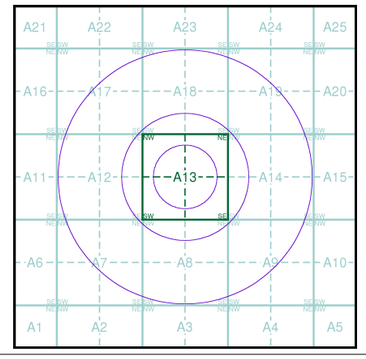
General

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

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

Order Number:	214988853_1_1
Customer Ref:	193237
National Grid Reference:	374450, 396880
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

1, Avroe Road, Eccles, MANCHESTER, M30 7WH

Landmark INFORMATION GROUP

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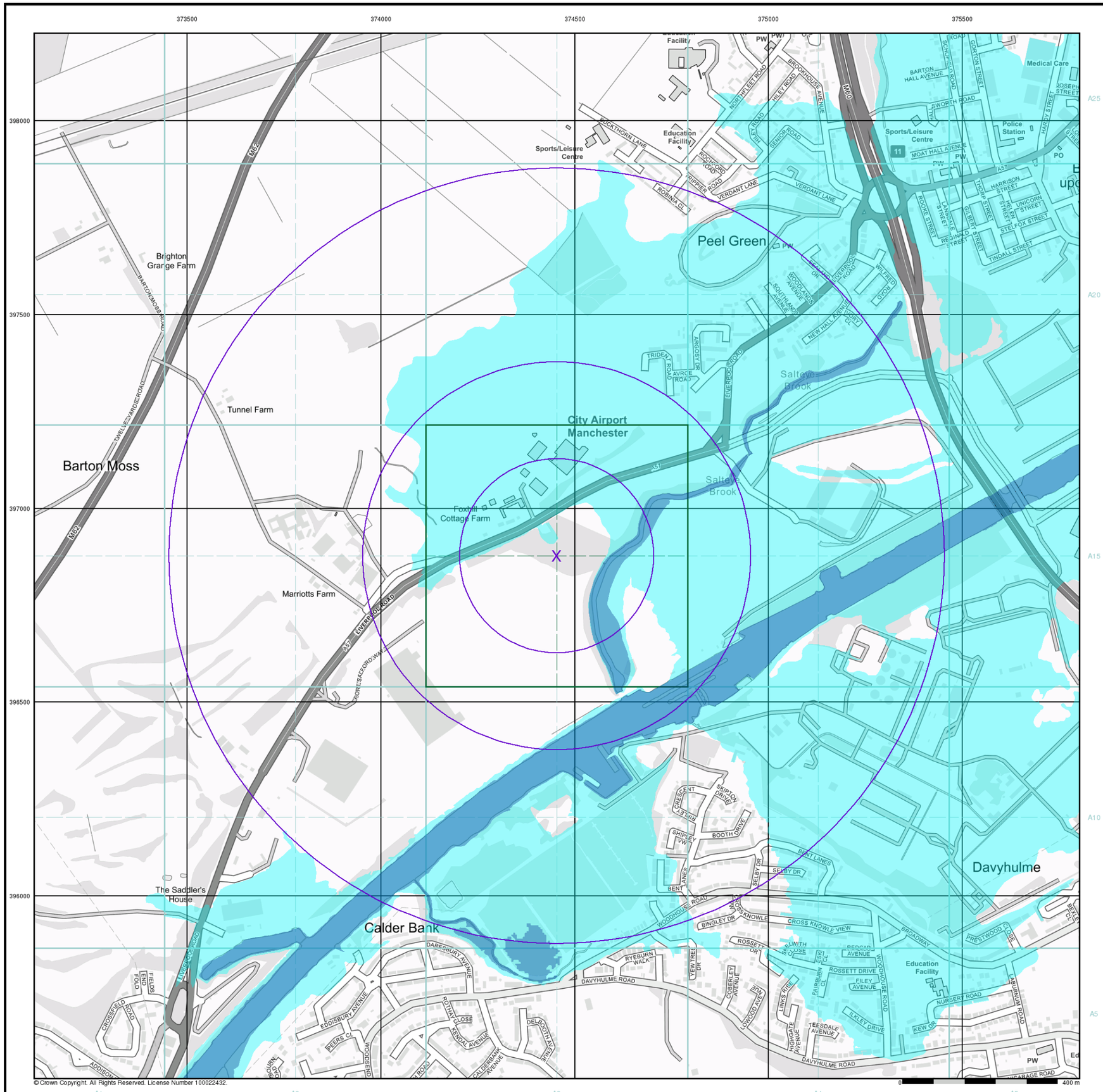
Web: www.envirocheck.co.uk



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LANDMARK INFORMATION GROUP®

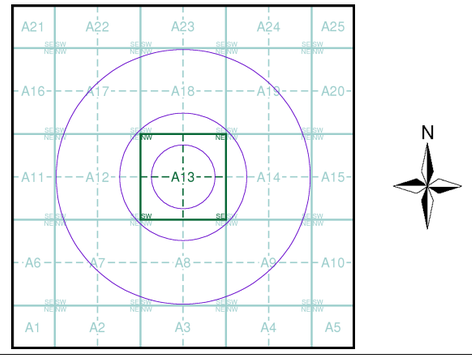
General

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

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



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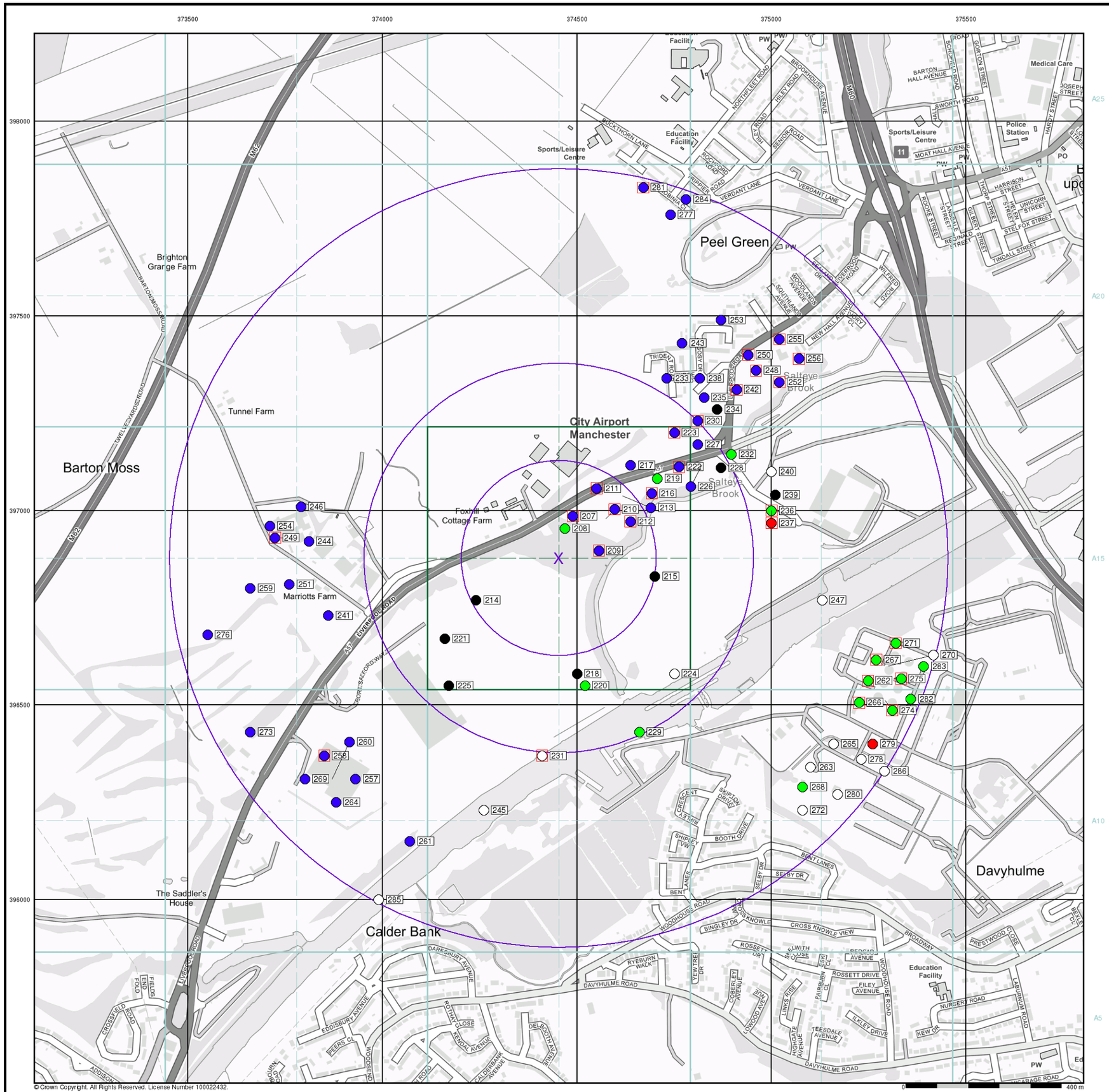

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LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

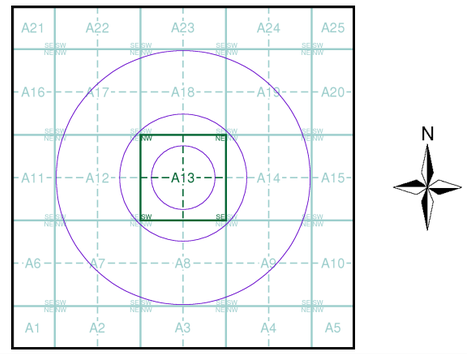
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



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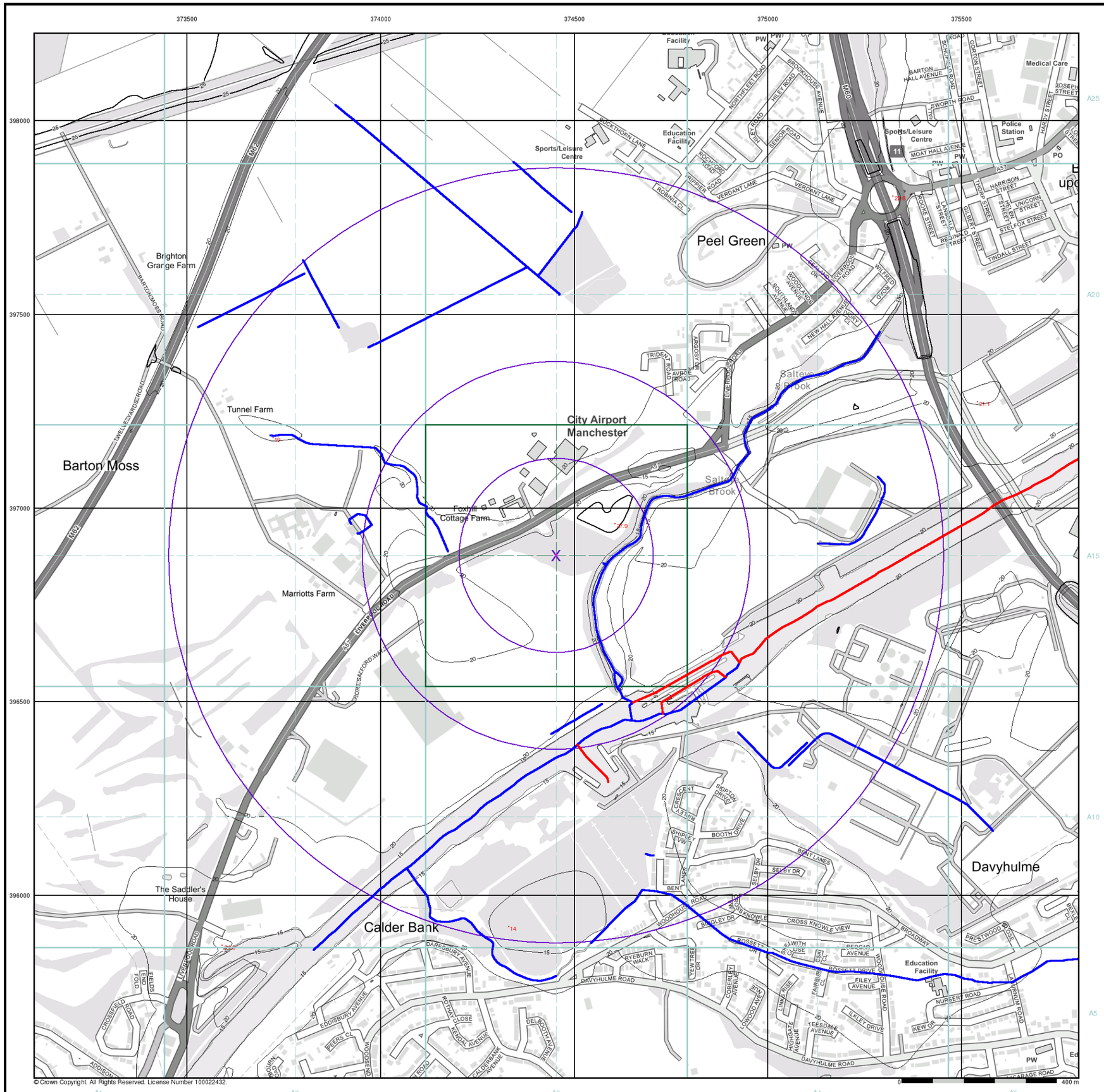

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LANDMARK INFORMATION GROUP®

General

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

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

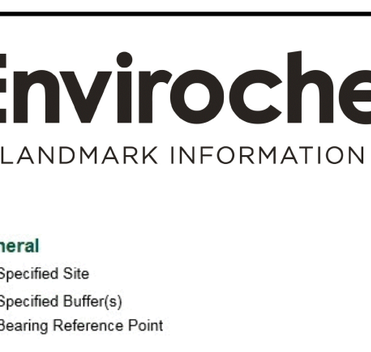
Standard Contour 105 100 95

Master Contour

Spot Height 167.3

- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



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

Risk of Flooding from Surface Water

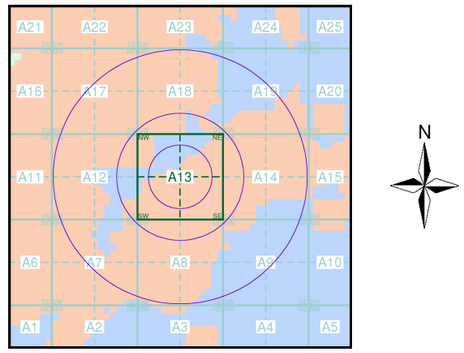
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



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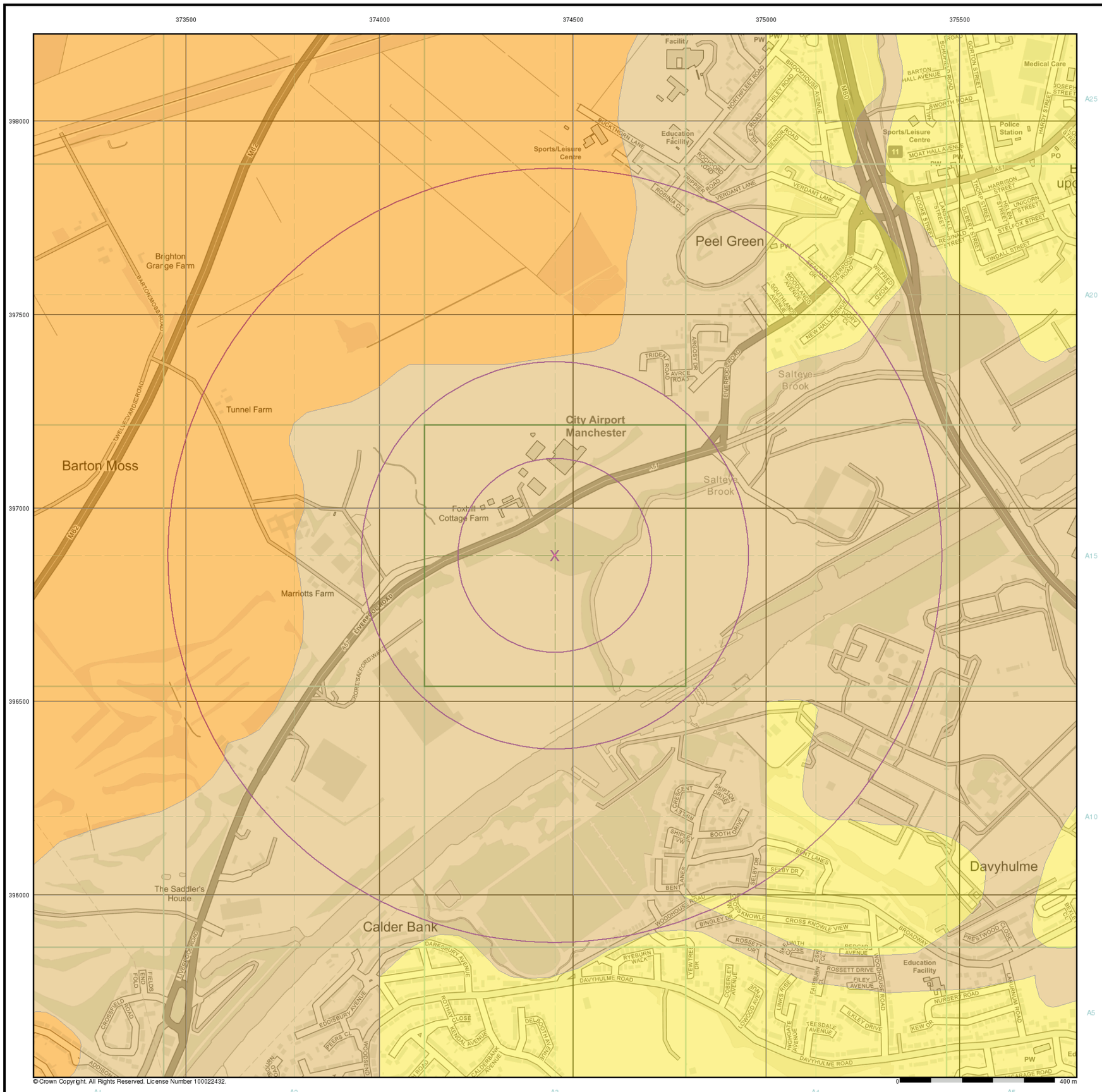

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LANDMARK INFORMATION GROUP®

General

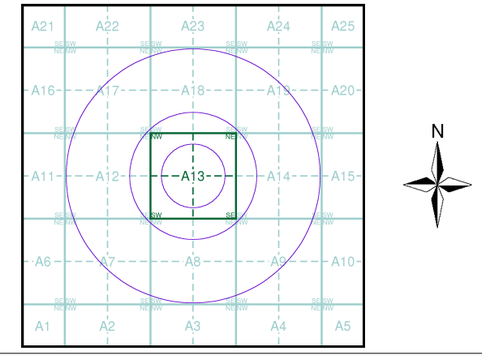
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



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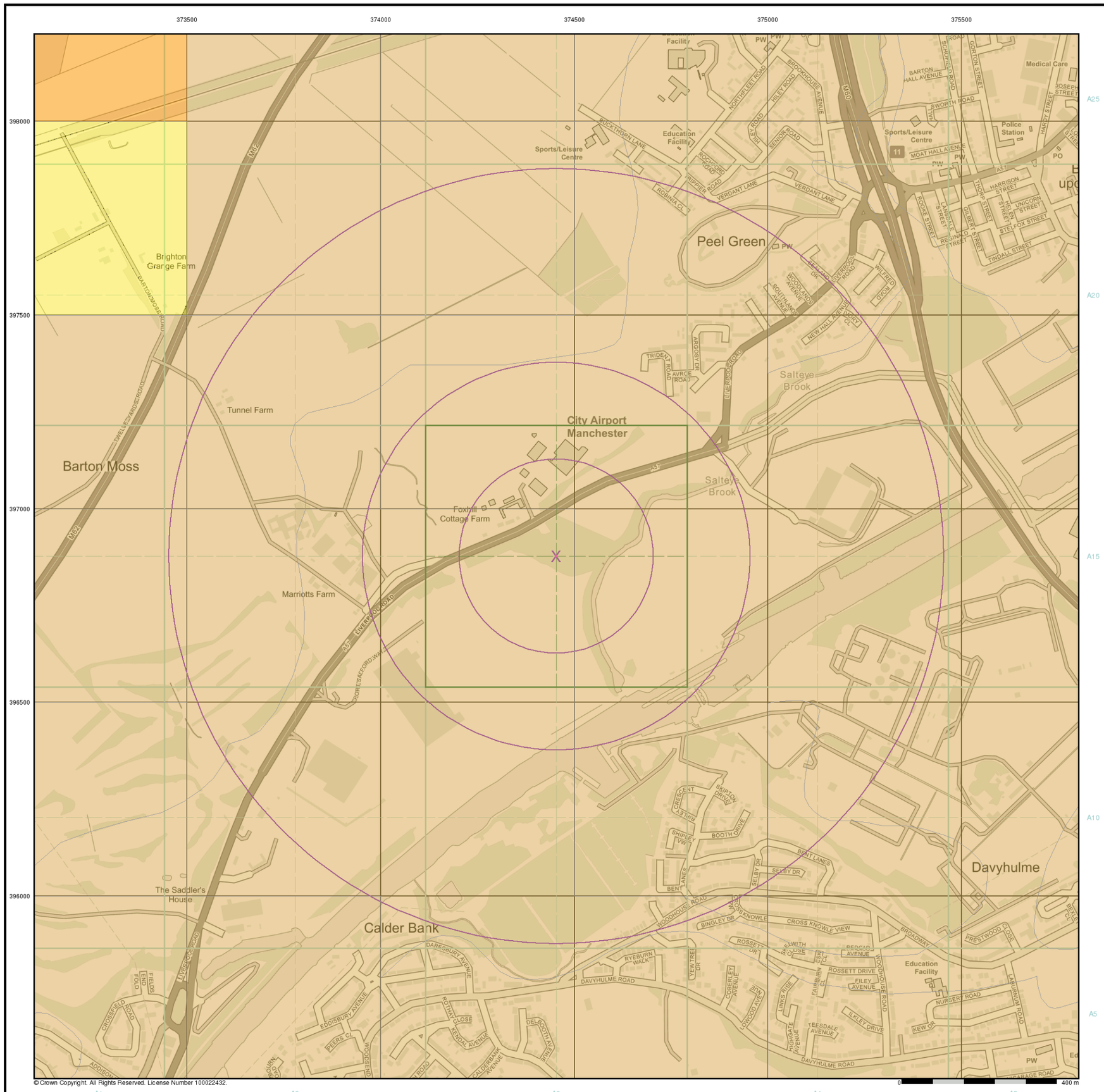

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LANDMARK INFORMATION GROUP®

General

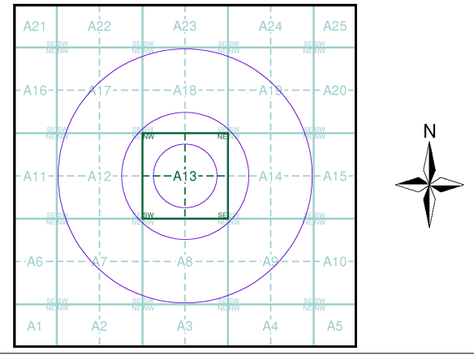
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

- < 1.8
- 1.8 - 2.2
- 2.2 - 3.0
- > 3.0

Estimated Soil Chemistry Cadmium - Slice A



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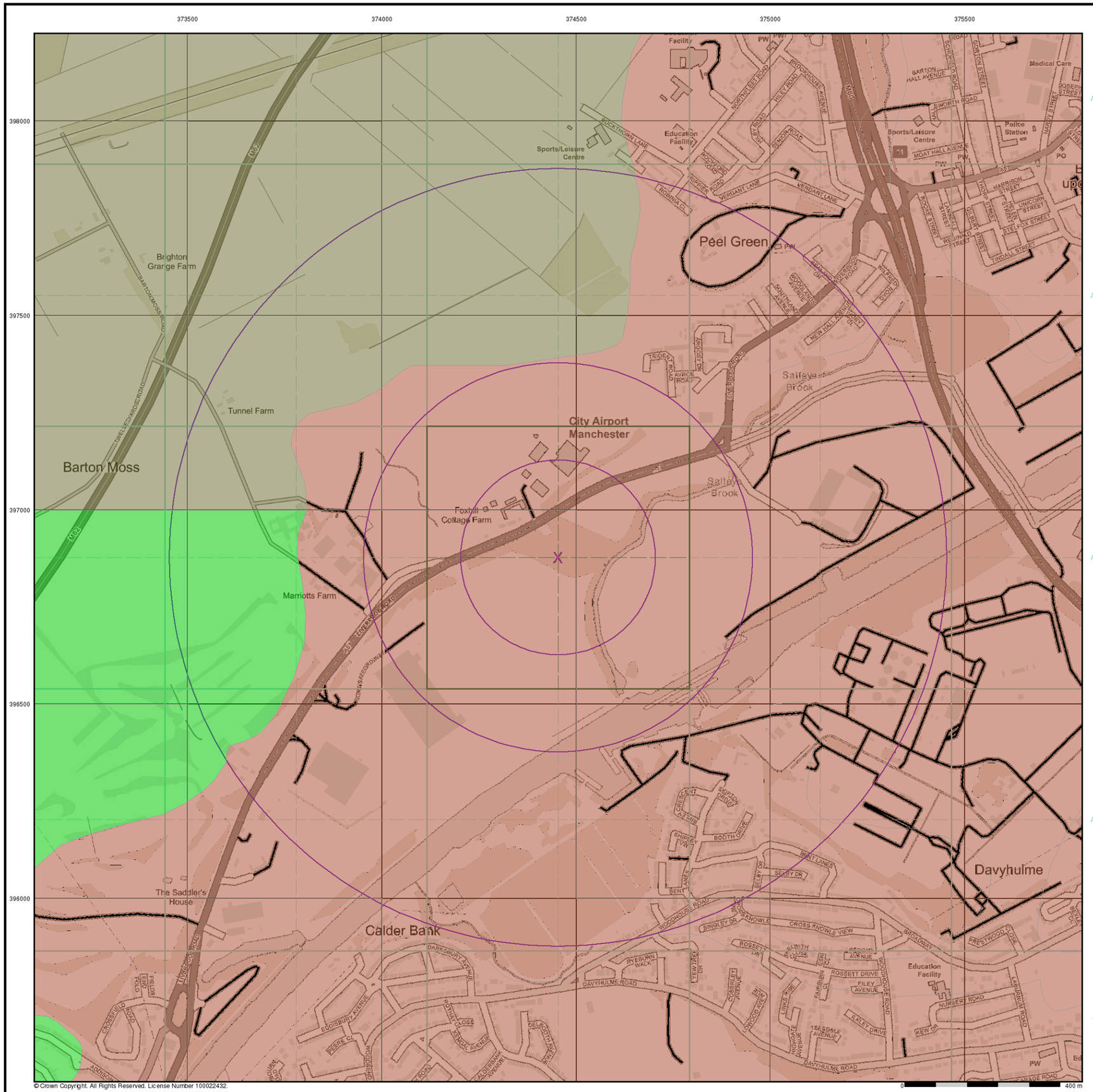

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General

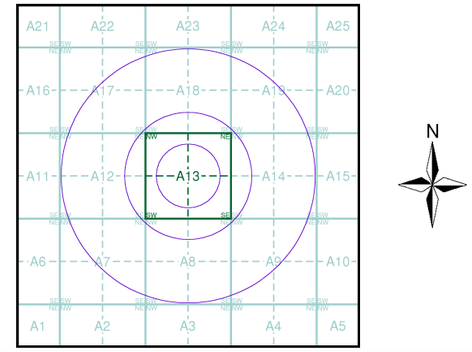
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



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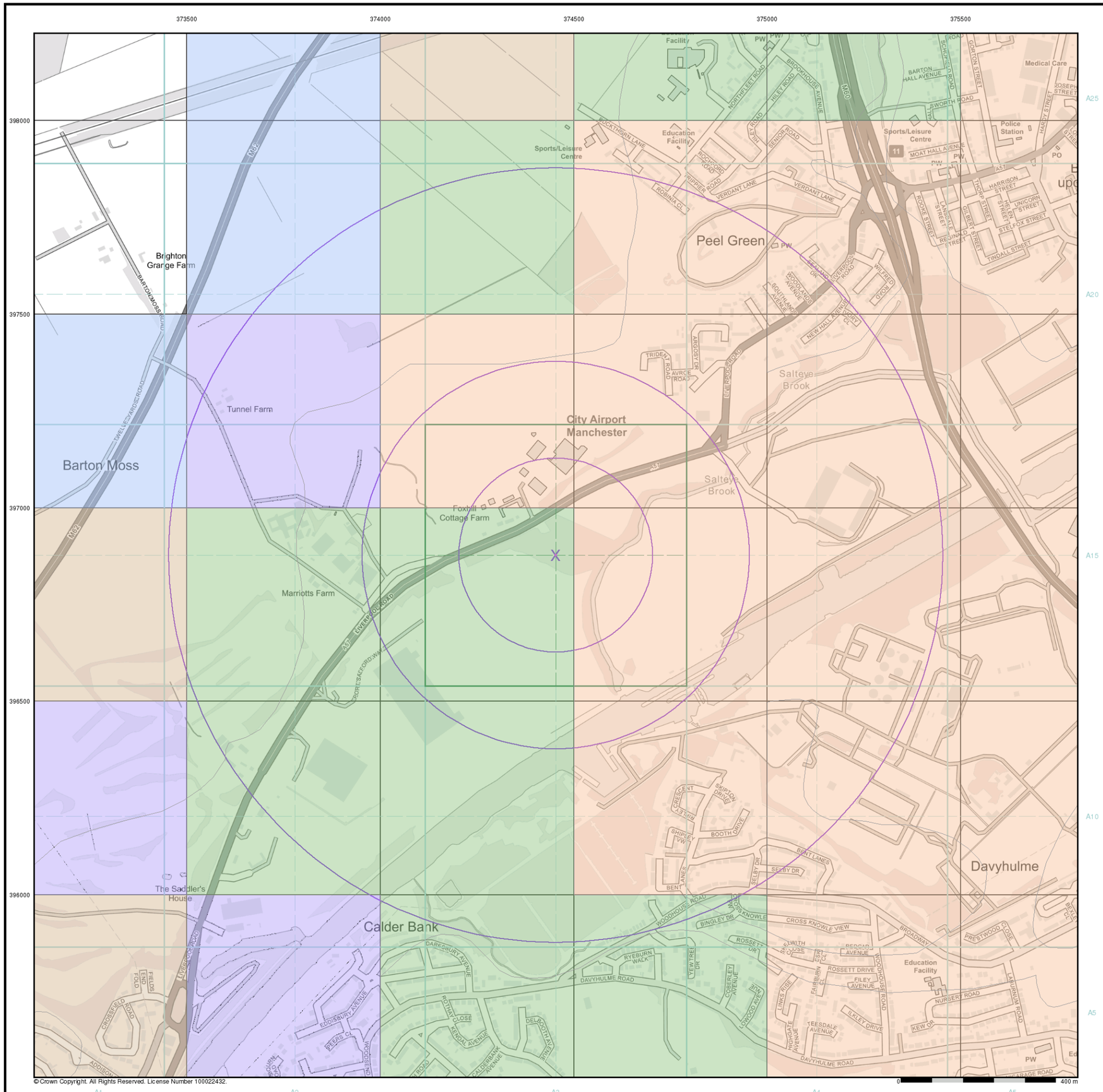

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General

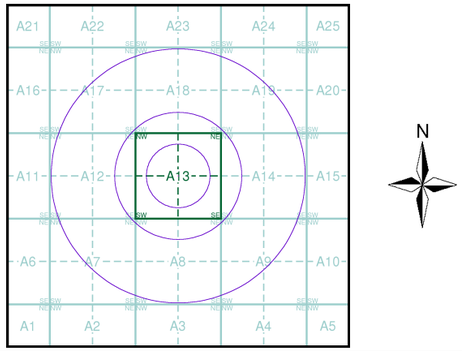
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



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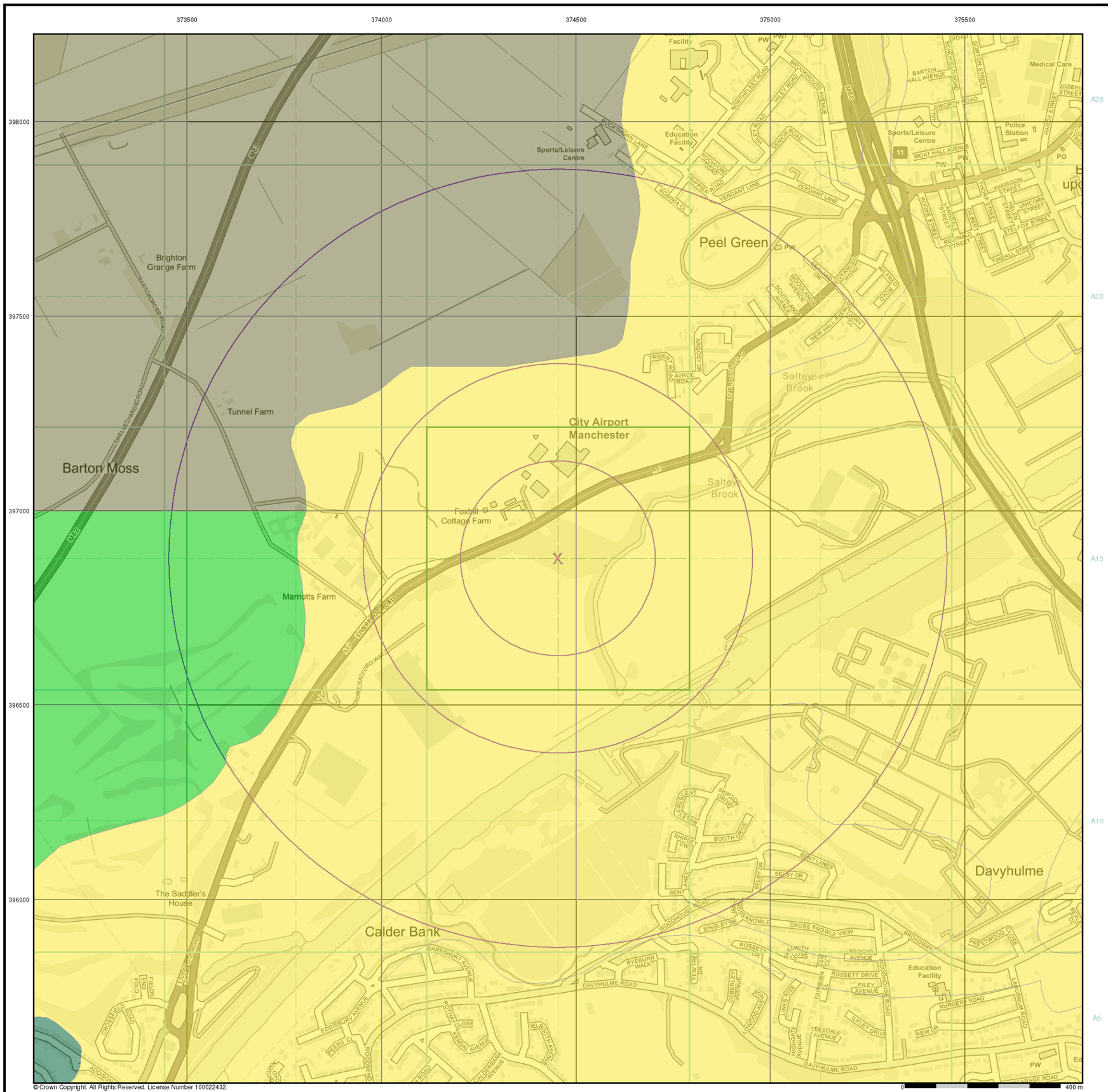

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LANDMARK INFORMATION GROUP®

General

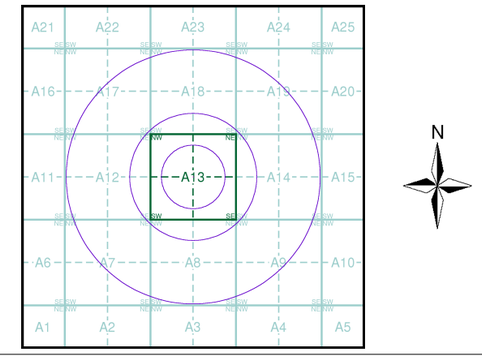
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



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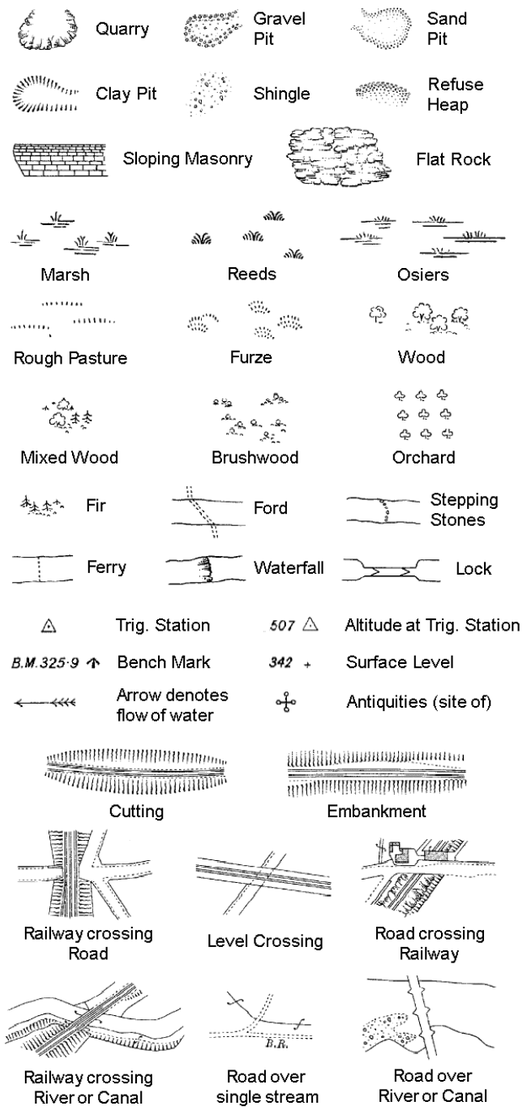
Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)

County & Civil Parish Boundary

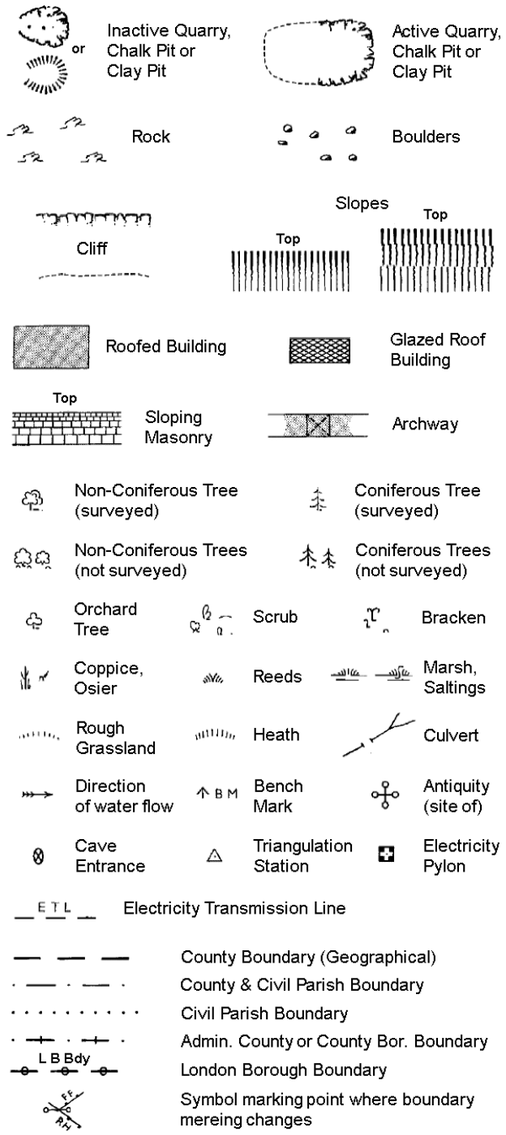
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

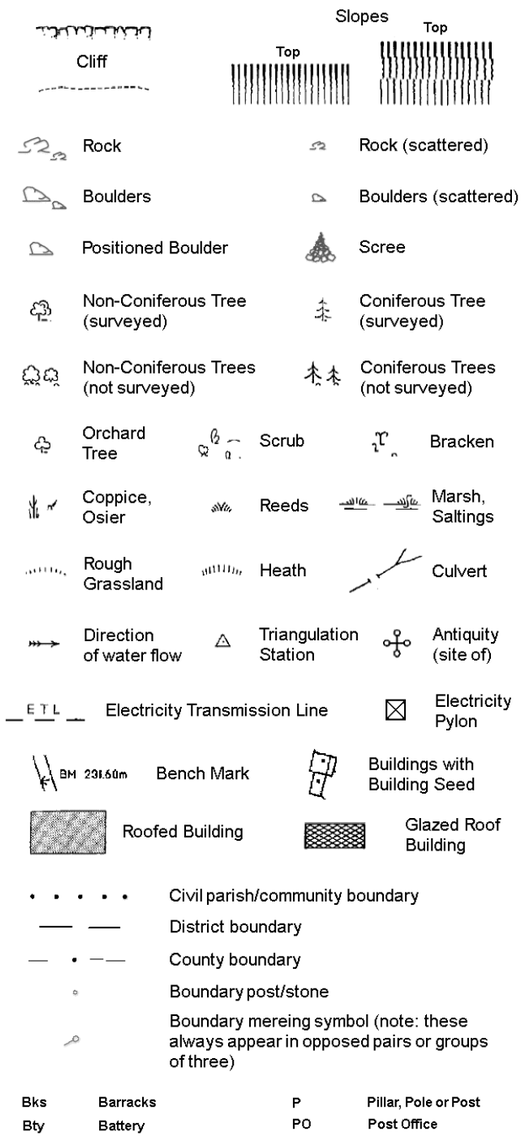
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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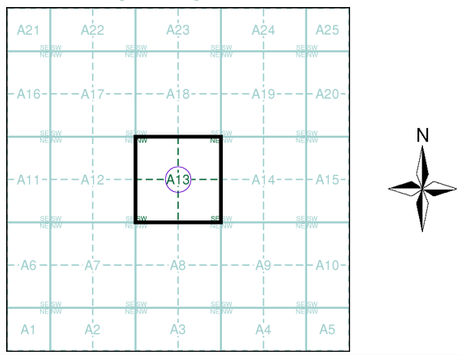
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:2,500	1890 - 1896	2
Lancashire And Furness	1:2,500	1908	3
Lancashire And Furness	1:2,500	1928 - 1929	4
Lancashire And Furness	1:2,500	1937 - 1939	5
Ordnance Survey Plan	1:2,500	1959 - 1969	6
Ordnance Survey Plan	1:1,250	1966 - 1967	7
Additional SIMs	1:1,250	1966 - 1975	8
Ordnance Survey Plan	1:2,500	1968	9
Large-Scale National Grid Data	1:1,250	1992	10
Large-Scale National Grid Data	1:1,250	1994	11
Historical Aerial Photography	1:2,500	2000	12

Historical Map - Segment A13



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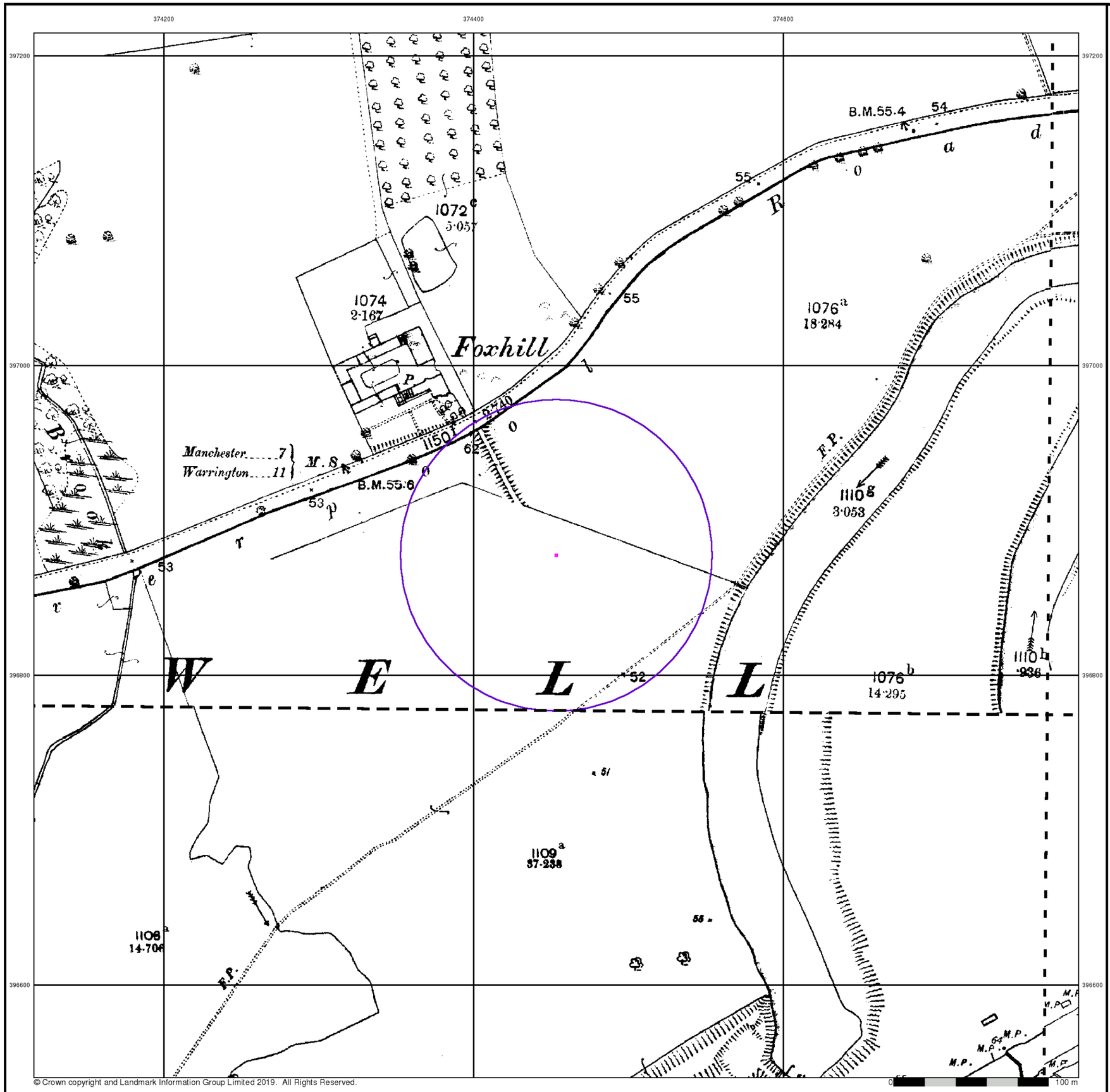

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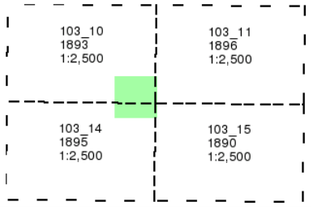
Lancashire And Furness

Published 1890 - 1896

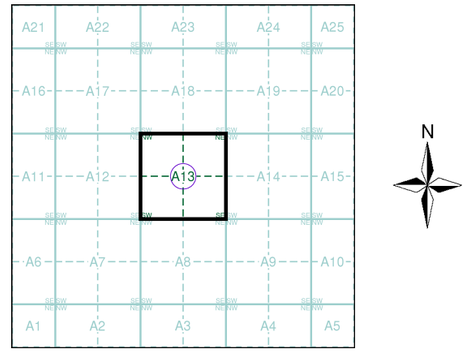
Source map scale - 1:2,500

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 and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

Map Name(s) and Date(s)



Historical Map - Segment A13



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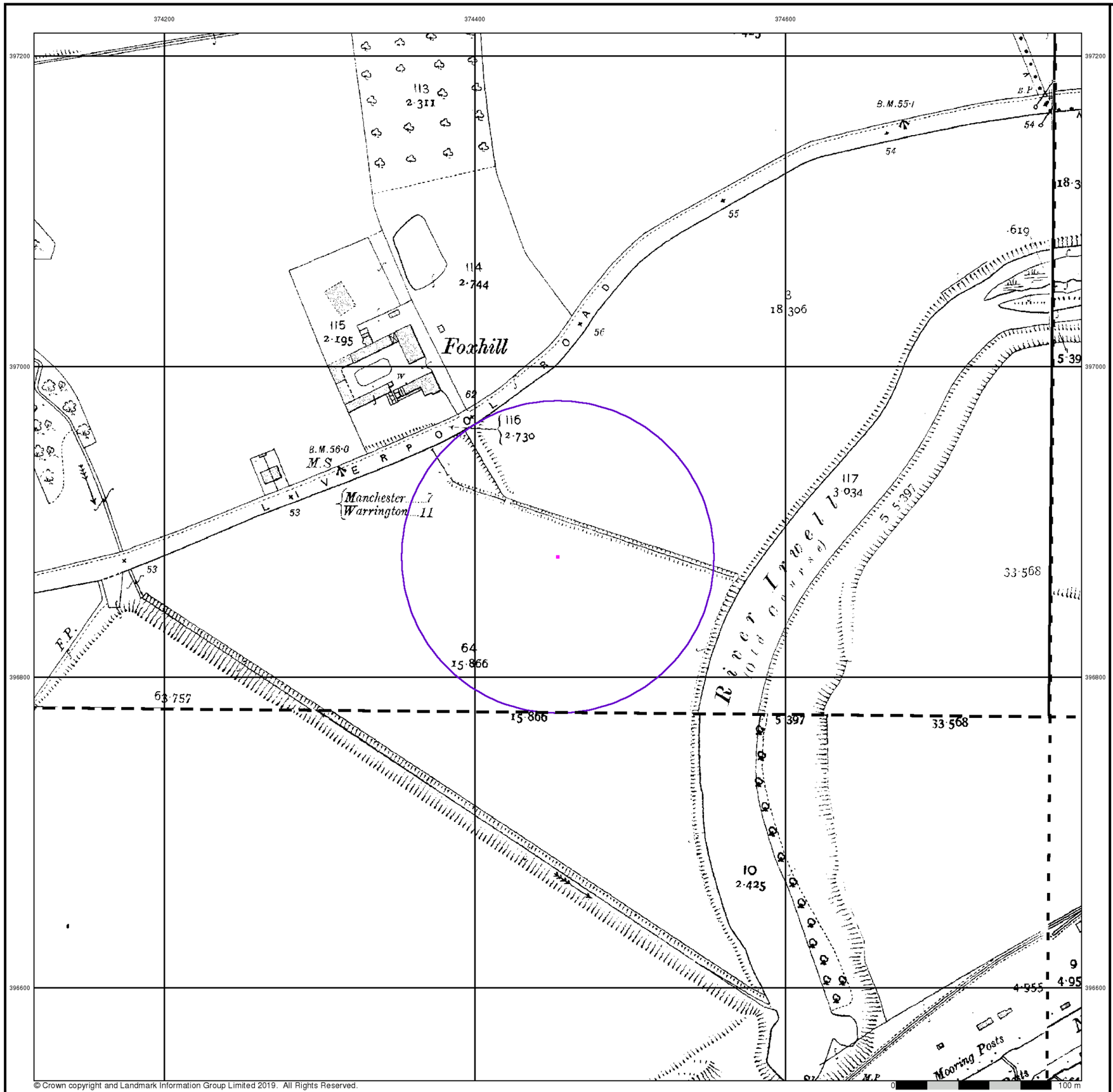

0 100 m

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Lancashire And Furness

Published 1908

Source map scale - 1:2,500

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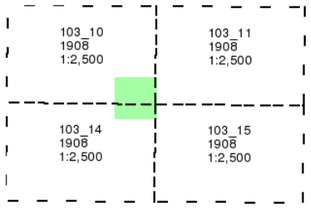
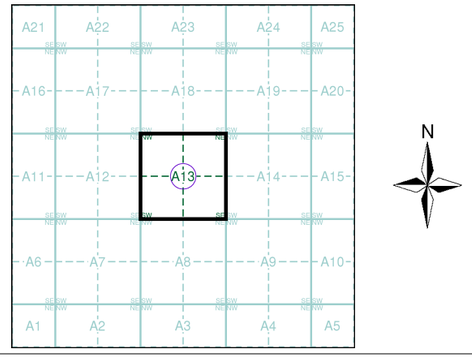


Historical Map - Segment A13



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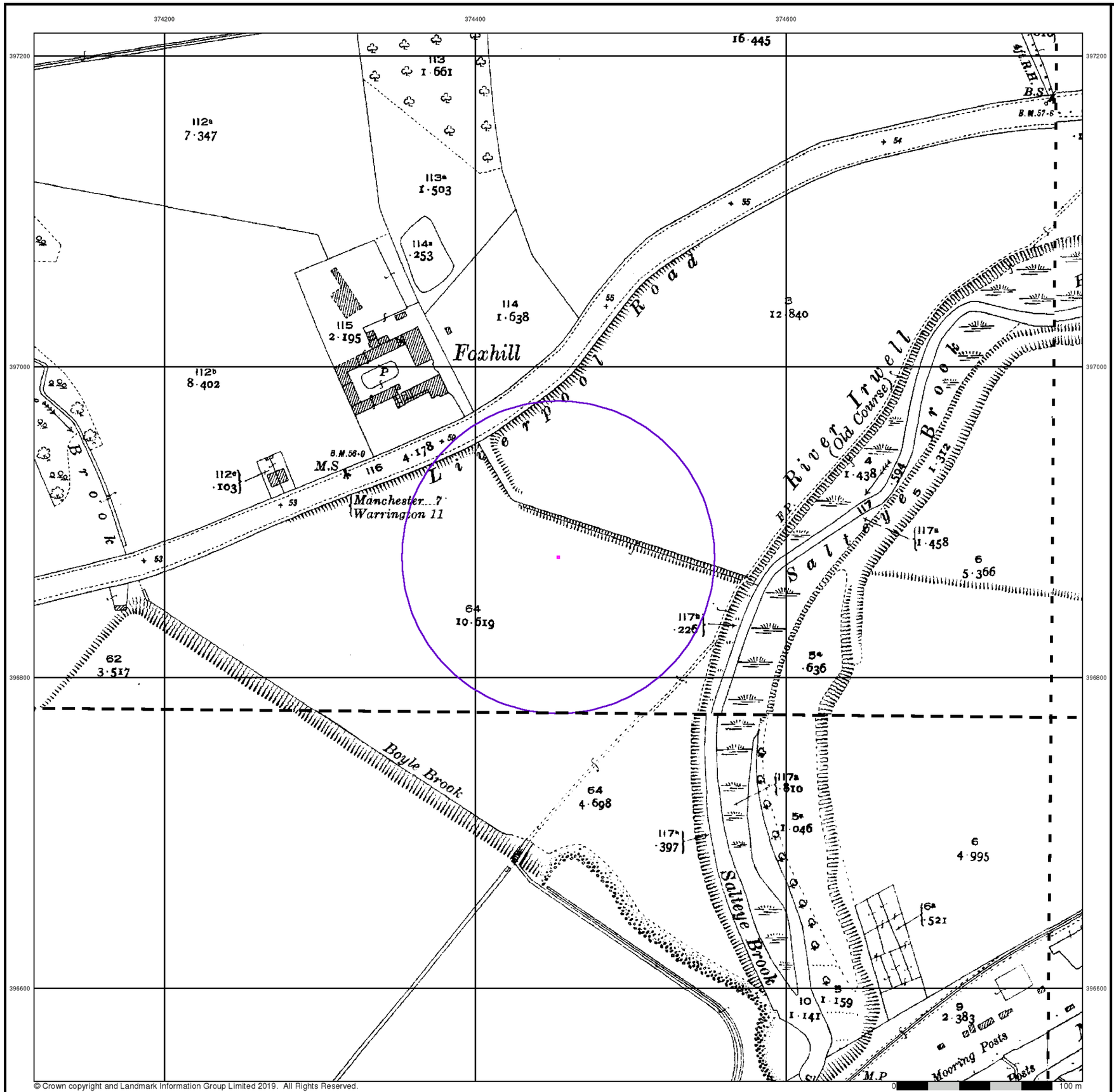

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Lancashire And Furness

Published 1928 - 1929

Source map scale - 1:2,500

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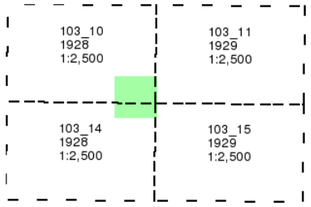
Map Name(s) and Date(s)



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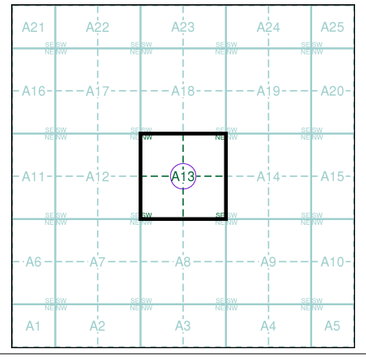

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National Grid Reference:	374450, 396880
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

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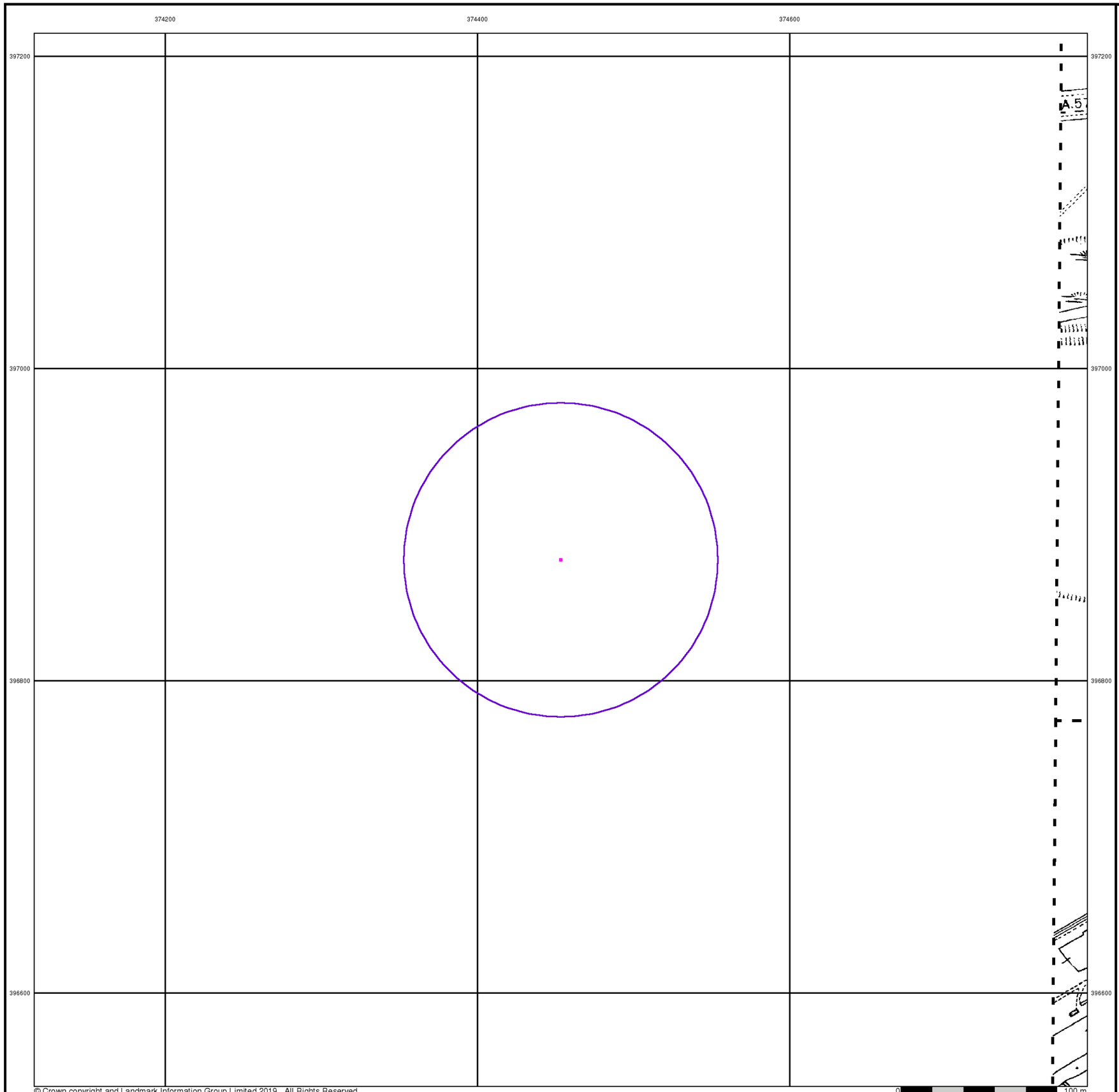

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Lancashire And Furness

Published 1937 - 1939

Source map scale - 1:2,500

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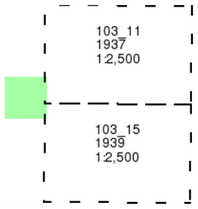

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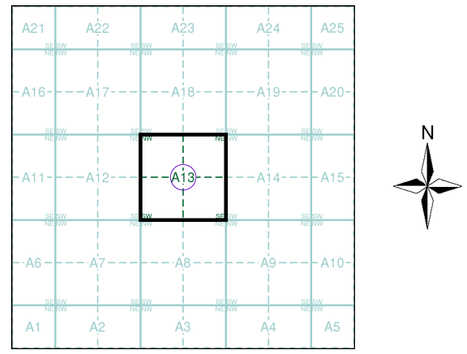

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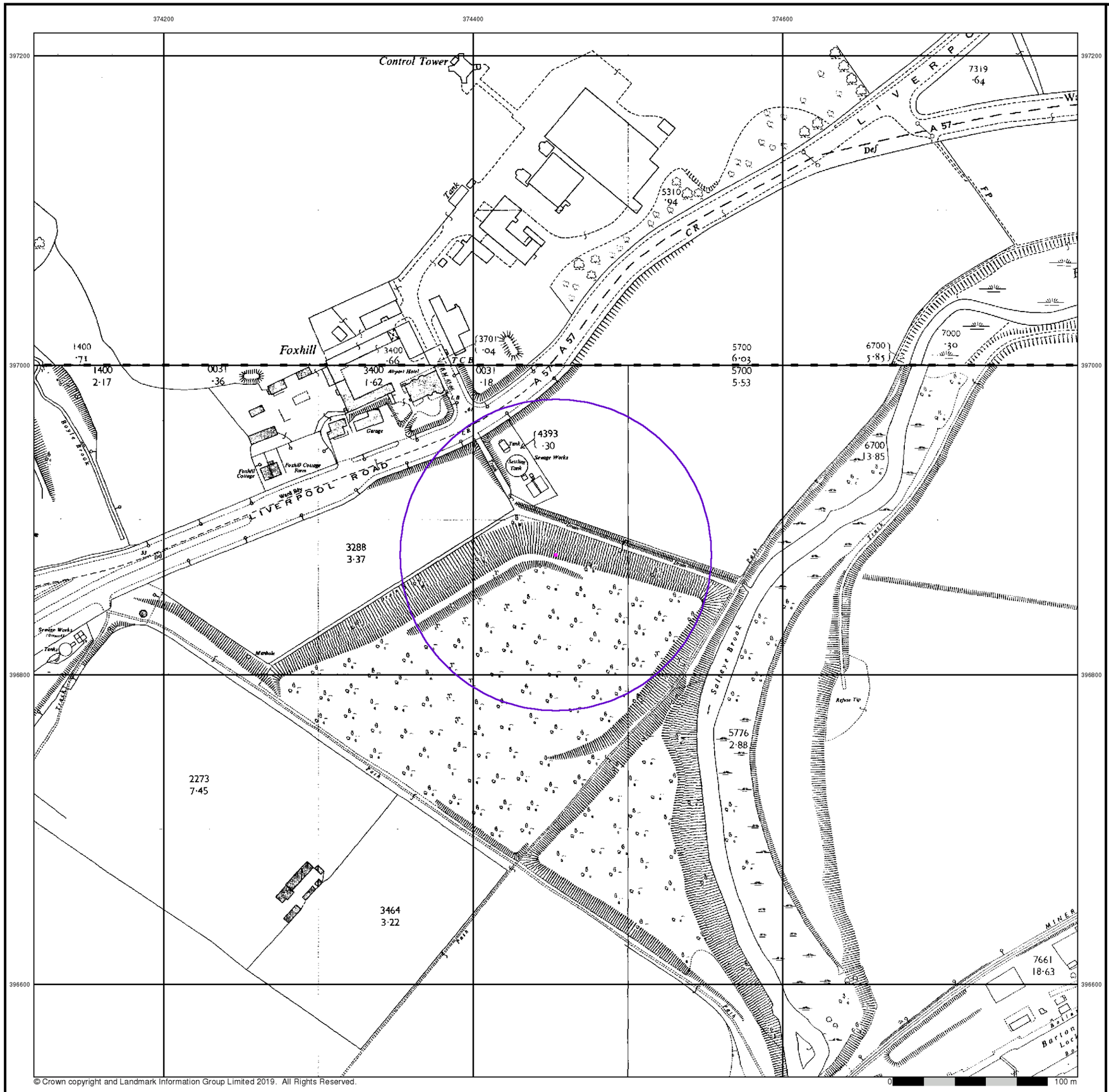

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Ordnance Survey Plan

Published 1959 - 1969

Source map scale - 1:2,500

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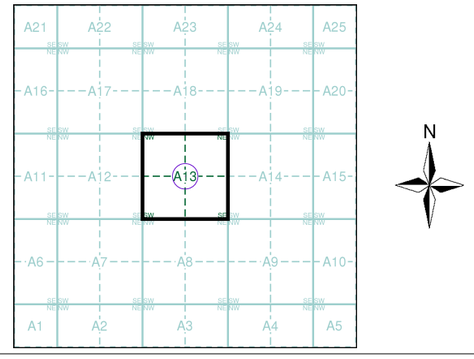
SJ7497
1959
1:2,500

SJ7496
1969
1:2,500

Historical Map - Segment A13



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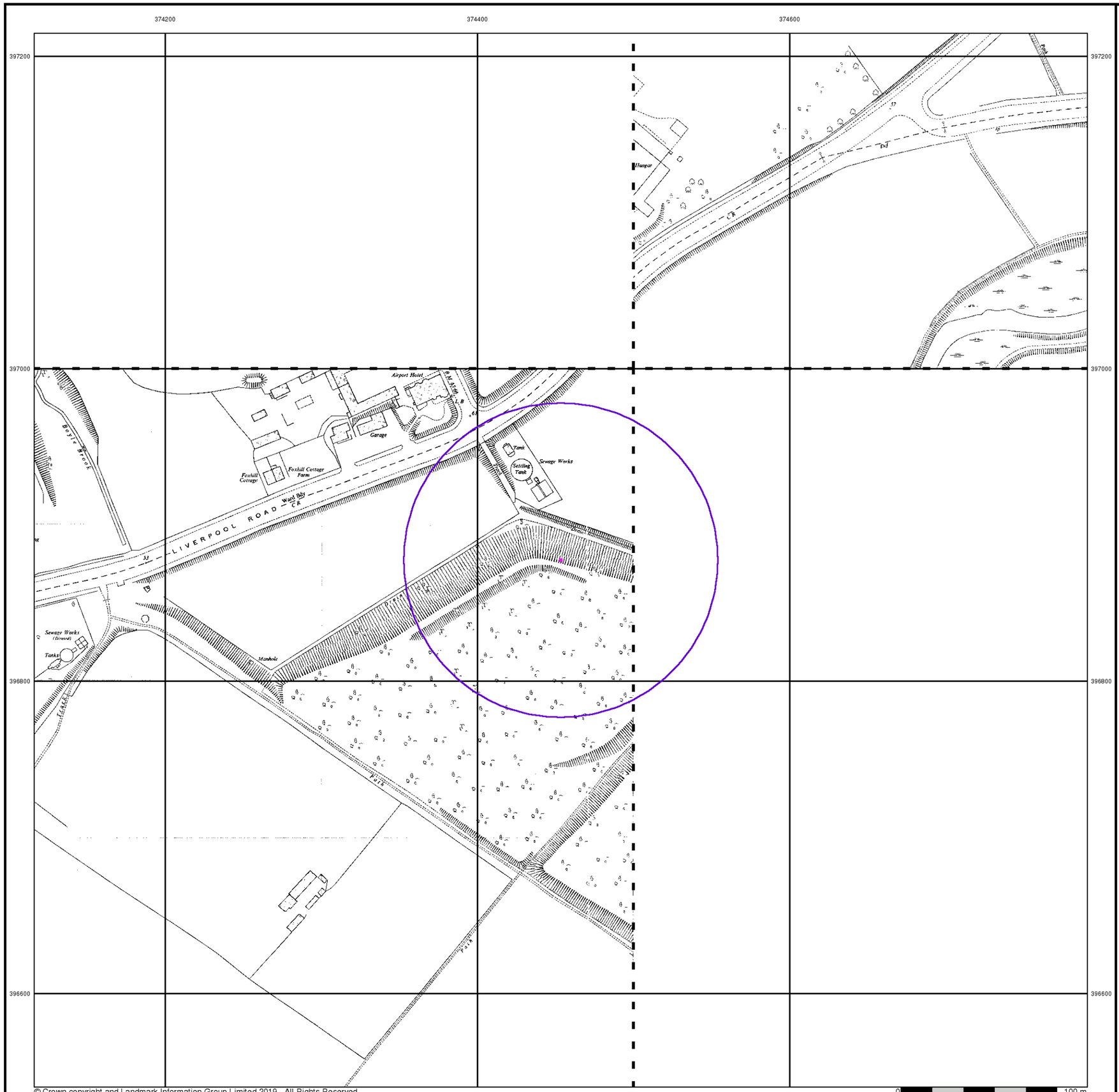

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Ordnance Survey Plan

Published 1966 - 1967

Source map scale - 1:1,250

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 and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

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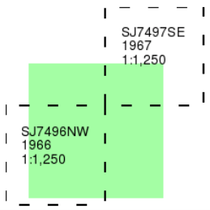

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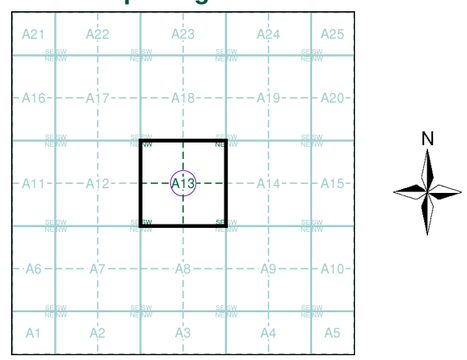

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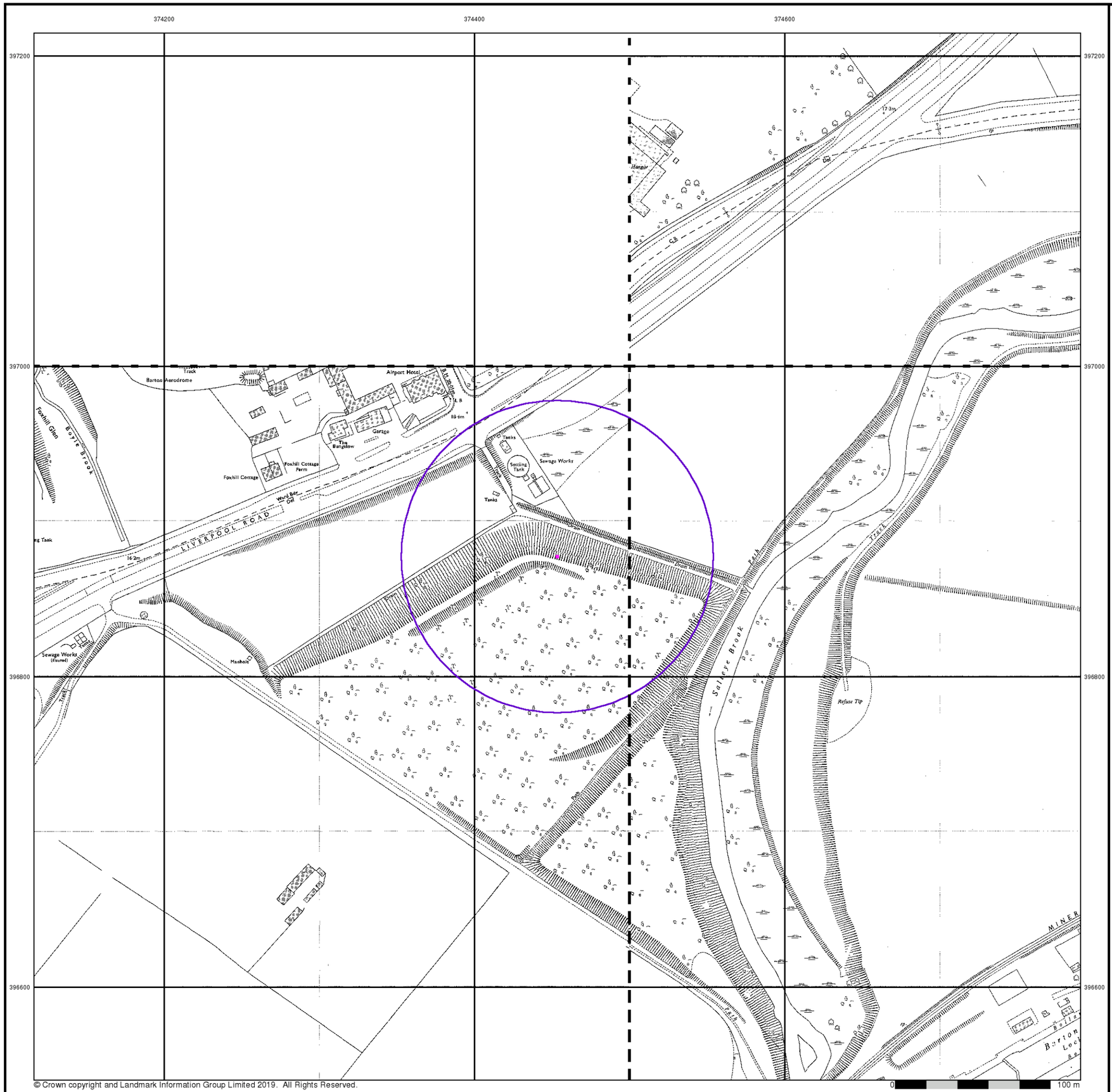

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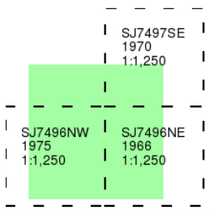
Additional SIMs

Published 1966 - 1975

Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



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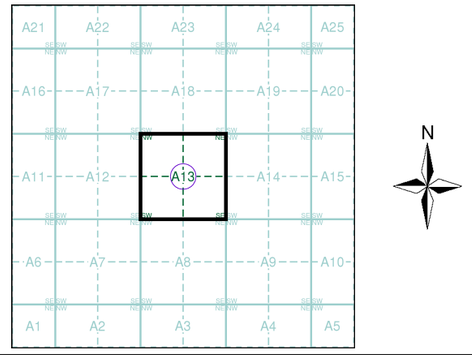

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Site Area (Ha):	0.01
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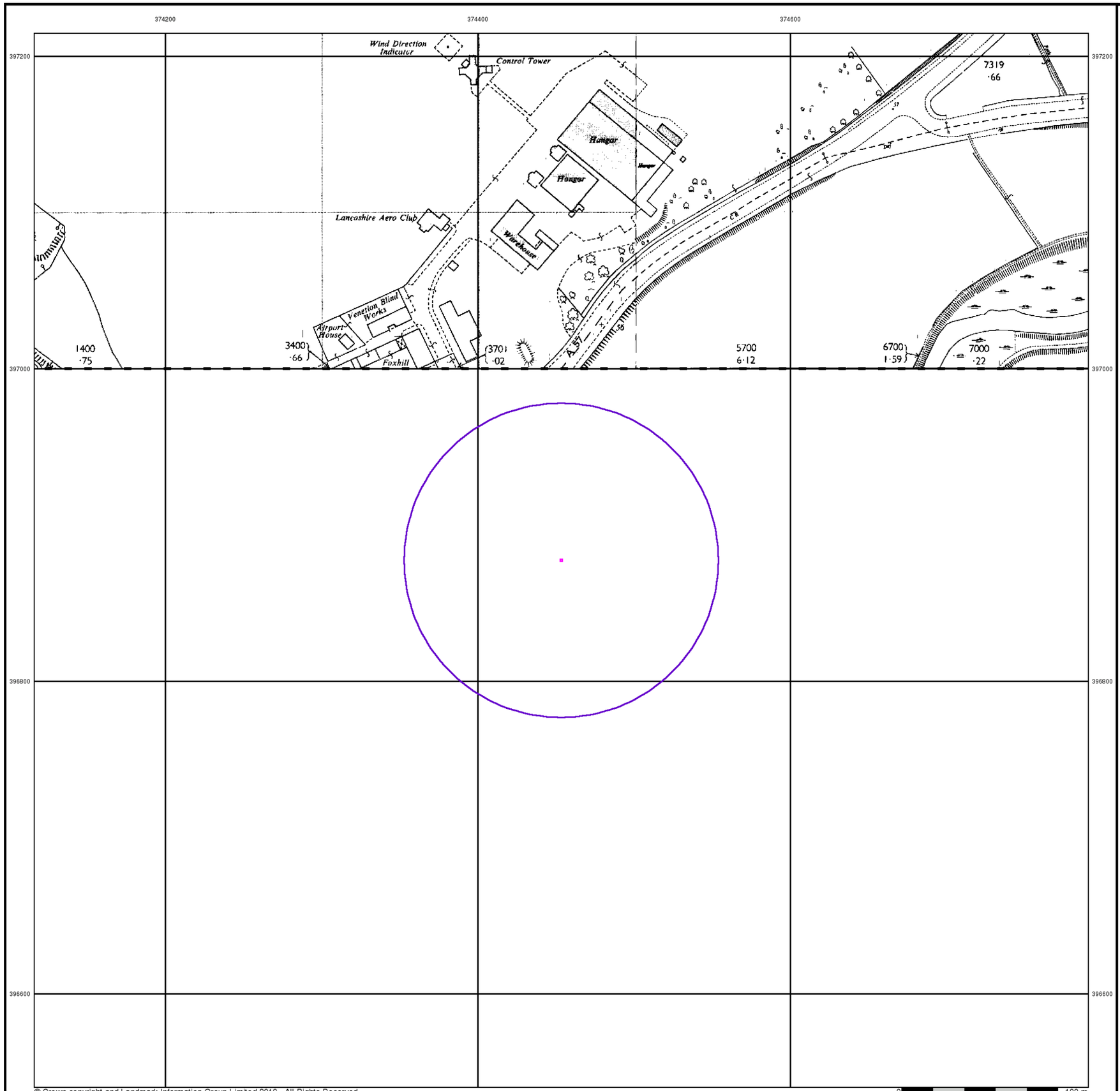

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Ordnance Survey Plan

Published 1968

Source map scale - 1:2,500

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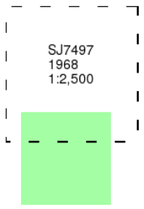
Map Name(s) and Date(s)



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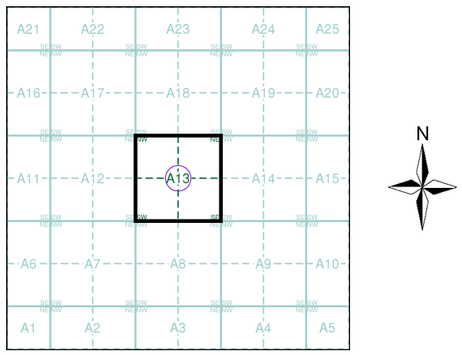

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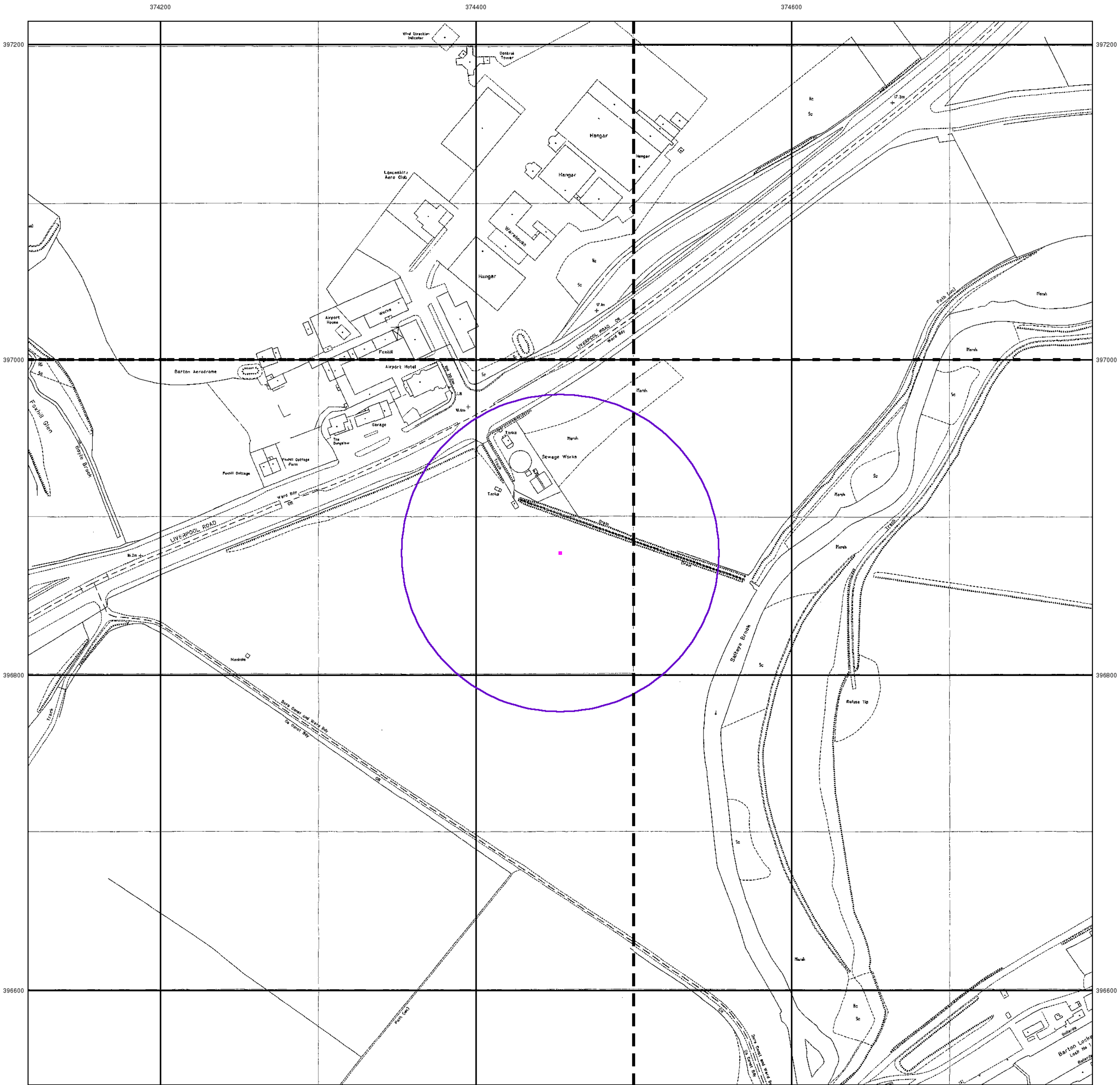

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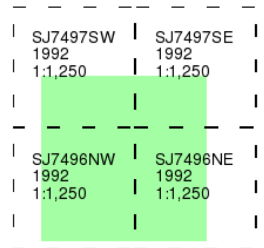
Large-Scale National Grid Data

Published 1992

Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



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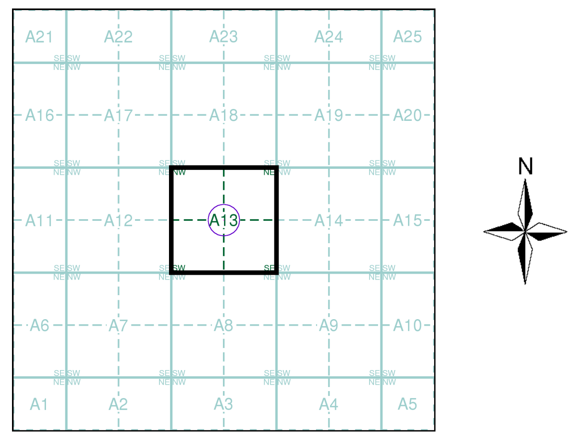

Order Details

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Customer Ref: 193237
National Grid Reference: 374450, 396880
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 100

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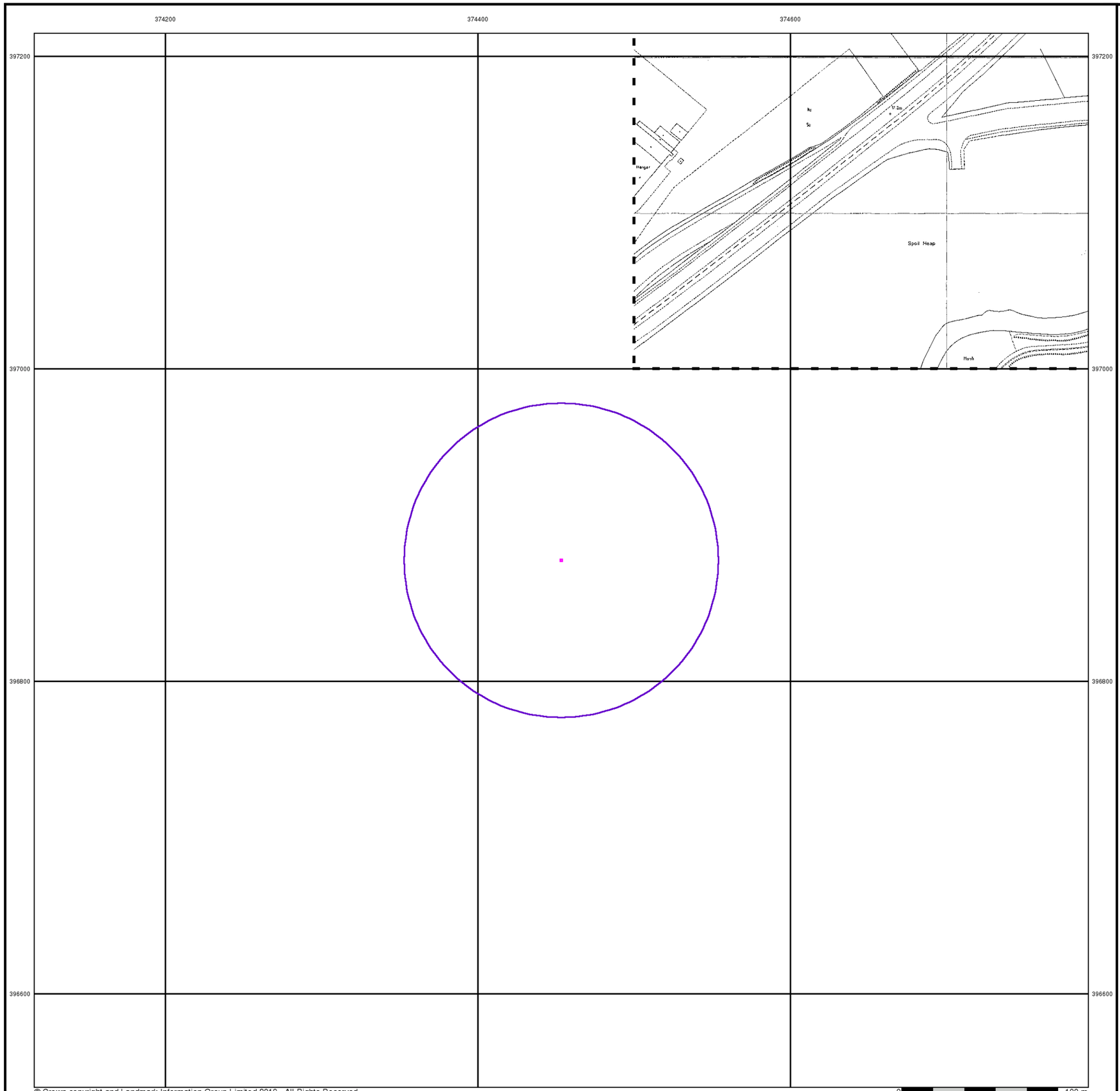

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Large-Scale National Grid Data

Published 1994

Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

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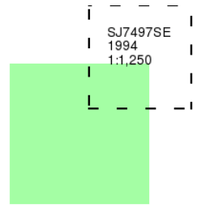

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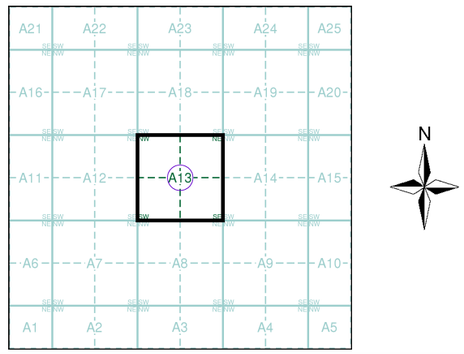

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National Grid Reference:	374450, 396880
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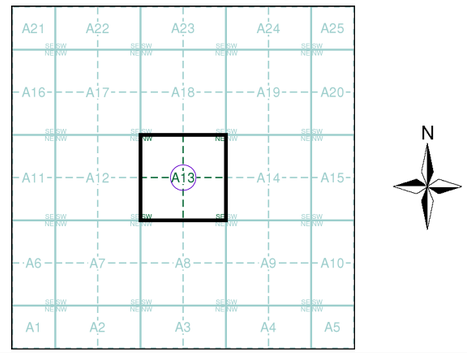
Historical Aerial Photography

Published 2000

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



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Search Buffer (m):	100

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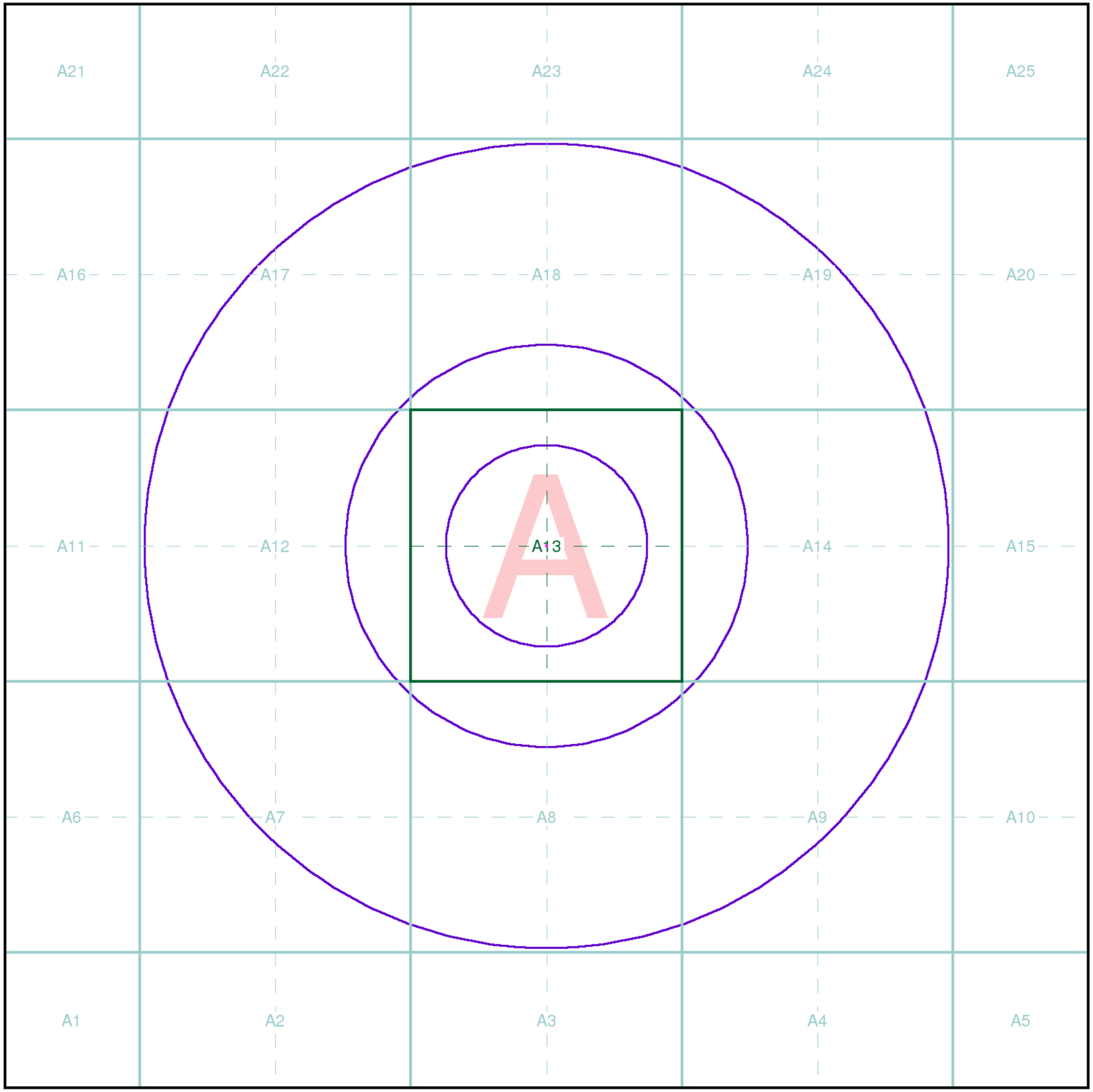

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Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice
Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment
A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant
A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:

Map data

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Environment Agency

NATURAL ENGLAND

Envirocheck reports are compiled from 136 different sources of data.

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Customer Ref:	193237
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Search Buffer (m):	1000

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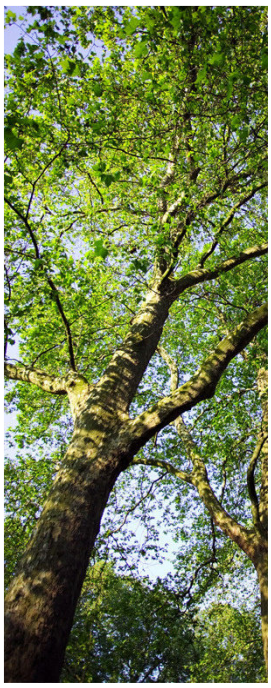
Appendix C
2014 Ground Investigation Report (Mott Macdonald)


Port Salford

Ground Investigation Report

March 2014
Peel Investments North Ltd

Mott MacDonald

Port Salford

Ground Investigation Report

March 2014

Peel Investments North Ltd

Peel Dome, The Trafford Centre, Manchester M17 8PL

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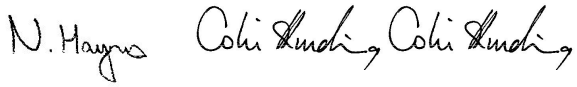
Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
01	29/6/12	N. Haynes	C. Harding	C Harding	Tender Issue



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T +44(0) 161 926 4000 F +44(0) 161 926 4100, W www.mottmac.com

Content

GLOSSARY

Summary of symbols and abbreviations

CBR – California Bearing Ratio
NMC – Natural Moisture Content
SPT – Standard Penetration Test
UCS – Unconfined Compression Test
PSD – Particle Size Distribution Test
BRE – Buildings Research Establishment
U100 – 100mm undisturbed sample
GI – Ground Investigation
CIRIA - Construction Industry Research and Information Association
MGGW – Made Ground General Waste
MGDCS – Made Ground Dredged Clay & Silt
MGCCW – Made Ground Canal Construction Waste
ALLCS – Alluvial Clay & Silt
ALLSG – Alluvial Sand & Gravel
GLSG – Glacial Sand & Gravel
GLCL – Glacial Clay
SST – Sherwood Sandstone
REME – Royal Engineers Military Establishment
mAOD – metres above Ordnance Datum (Newlyn)
mbgl – metres below ground level

1. Introduction

1.1 Background & Proposed Development

Mott MacDonald has been appointed by Peel Investments (North) as Lead Designer for the Civil, Structural, Water, Highways, Bridges, Geotechnical and Maritime Engineering Services for a proposed new Port Development on the Manchester Ship Canal at Salford known as Port Salford.

The Port Salford development comprises a multi-modal freight interchange comprising rail served distribution warehousing, rail link and sidings, inter-modal and ancillary facilities including a canal quay and berths, vehicle parking, hardstanding, landscaping, re-routing of Salteye Brook and a new signal controlled access to the A57.

A site location plan can be found in Appendix A. Details of the proposed Port Salford outline design are presented in Appendix B. The Port Salford development is a 57Ha private development which will possess a 3km rail siding connecting to Network Rail's Chat Moss line (ELR: DSE Liverpool to Manchester mainline). North of a new rail underbridge being constructed under a separate contract as part of the WGIS A57 re-alignment, the rail siding will fall under Network Rail maintenance, hence a separate Ground Investigation Report (GIR): Report Reference B1762900-3/CV.REP/0001 P01[(1)] has been submitted as part of the Network Rail GRIP3 approvals process. The intention of this GIR is therefore to cover the 'main' Port Salford site, situated to the south of the A57 only.

1.2 Objectives

This document is completed with regards to requirements as set out in Eurocode 7: Part 2 (BS EN 1997-2: 2007)[(2)] for the completion of a Ground Investigation Report (GIR). Eurocode 7 states "the Ground Investigation Report shall form a part of the Geotechnical Design Report (GDR)". Finalisation of a GDR will sit with the detailed design stage, the intention being that this GIR will form a stand-alone factual summary element capable of utilisation by design teams.

The proposed geotechnical works to be undertaken across the main Port Salford site, situated south of the A57, are likely to comprise ground improvement, piling, localised retaining walls and potential for shallow foundations. The proposed warehouse, ancillary port buildings, low retaining walls, low earthworks and roadways are considered Category 2 geotechnical design elements. The Port heavily loaded berthing areas, container stacking areas and rail bridge areas may be considered Category 3 geotechnical design elements due to the poor ground conditions and abnormally high loads.

1.3 Sources of Information

The information presented within this report has been gathered primarily from the following sources:

- Published geological mapping [(3)];
- Historical ground investigation borehole records from the British Geological Survey.
- WS Atkins report Barton Strategic Employment Site Ground Investigation and Assessment, 30 January 1998, Report Ref AY2441/AJS/kat/012.8538 [(4)]
- Hyder Report Barton Strategic Employment Site, Phase 1 Feasibility Study Report, May 1999, Report Ref SH11615/D1/2 [(5)]
- WS Atkins Report, Barton Masterplan, Geotechnical and Environmental Desk Study, May 2000, Report Ref AF6626.005/AR/jw/075.17083 [(6)]

- WSP Report, Geo-Environmental Site Investigation, Rhodia Ltd, Liverpool Road, Barton Moss, Manchester, Report Ref 91115M/3030 (7), October 2000
- Port Salford Planning Submission, Capita Symonds Structures 2005
- Geotechnics Factual Report on Ground Investigation, Report Ref PN112650, March 2012 (8)
- Planning Permission 03/47344/EIAHYB, The Council of the City of Salford, 16th July 2009

1.4 Limitations and Responsibility for Information

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2. Review of Existing Information

2.1 Site Location and General Description

The Port Salford site, centred on Ordnance Survey grid reference (374495, 396710), is located on a parcel of land bounded by the Manchester Ship Canal (MSC) to the south, the A57 to the north and west, and the M60 Barton Bridge and Salford City Stadium to the immediate east. Appendix A contains a location plan and existing and historic site photographs.

Area of Main Port Development

The site has a variable topography due to previous land filling activities undertaken on site (see Section 2.2) and for the main part comprises grassed scrubland with occasional areas of trees and bushes, becoming densely vegetated with trees and brambles along its borders. Four distinct boundaries cross the site which define areas of similar topography and vegetation;

- through the centre of the site an access track to the MSC Barton Lock gates runs NNW-SSE from the A57; west of this the site has a relatively flat topography varying from 19mAOD to 21mAOD, and comprises open grassland; locally at topographic lows there is evidence of ponding water and associated hydrophilic vegetation.

- east of the Barton Lock access track, the site is traversed by the Salt-Eye Brook, trending NE-SW which sits within an 8m deep, 40-80m width valley; the northern half possesses a raised topography of 22-23mAOD, falling to 20-21mAOD towards the NE corner, and locally rising to 25mAOD within the NW corner. South of the Salt-Eye Brook topographic levels are stepped; within the NE corner bordering the Salt-Eye, the topography is flat at 18-18.5mAOD, prior to stepping up at a man-made earthwork berm to 21-21.5mAOD for the remainder of the site. The vegetation across both areas either side of the Salt-Eye comprises low level scrub, trees and grass. The Salt-Eye valley itself possesses a low-level natural floodplain to the east of the water-course, varying between 14-16mAOD which is densely vegetated with hydrophilic vegetation and trees.

- within the NW corner of the site, there is securely fenced tenanted area currently occupied by a freight storage company; the elevation varies between 21-23mAOD, possessing variable surfacing of concrete/bitumen hard standing with occasional grass and trees.

- across the entirety of the southern site boundary, there is a very densely vegetated benched earthwork slope down to the MSC. The bench historically supported canal-side tramways, and is typically at 16-18mAOD and of 10m width. The MSC slope is an open cut face, with the MSC level encountered at circa 13.3mAOD; however there are localised areas where sheet piling retains the toe of the slope, presumably associated with former docking areas. A 2011 bathymetric survey of the canal details the canal base to typically lie at a depth of 8-9m below water level. Barton Lock is situated north of the Salt Eye outfall. Upstream of the lock gates MSC water levels are retained at typically 17.9mAOD, hence there is a 4.6m hydraulic head across the lock.

2.2 Site History

The site south of the A57 is situated more or less entirely on raised ground within the River Irwell floodplain, and has been subject to complex historical development. Drawing MMD-293621-G-DR-00-XX-14020 provided within Appendix B summarises the site history for the entirety of the wider Port Salford scheme including the rail corridor. Historical OS plans are provided within earlier desk studies for the site as referenced below.

1840-1880's: A previous desk study undertaken by Atkins [(4)] has indicated that in 1848 the majority of the site was occupied by agricultural land and small areas of woodland. Earlier maps highlight the A57 as a turnpike linking Liverpool and Manchester, which, within the vicinity of the site traversed between the raised Chat Moss peat bog to the north and the meandering River Irwell alluvial valley to the south. Both the Liverpool to Manchester railway and the A57 Liverpool road are shown on historic maps in 1848 (the railway was constructed between 1828-1830). In the same map of 1848 the historic course of the River Irwell is shown meandering across the main Port Salford site. The river follows a tight meandering loop extending to the footprint area for the proposed WGIS A57 alignment.

1890-1920's Construction of the Manchester Ship Canal (MSC) (1890-1894) required temporary diversion of the River Irwell. Historical OS plans and archive construction records show that the river channel was diverted to run effectively parallel to the MSC excavation between the Boysnope and Salt-Eye meanders, with an intervening bund or spoil bank which plans show to vary in width down to a minimum of 10m. Following construction, by 1898 the natural and temporary River Irwell diversion channels were backfilled, save for the existing Salt-Eye Brook channel. East of the Salt-Eye, the 1894/96 OS plan details the raised berm outline which appears present today – this berm would appear likely to comprise fill associated with the MSC construction - elsewhere surface topography is indicated to lie at or close to the 50ft contour (circa 15.24mAOD) with the Irwell channels, other than that occupied by the Salt-Eye, backfilled.

The Eccles Corporation and Daveyhulme Sewage Treatment works which handled all of Manchester's, and later, north Cheshire and South Lancashire's, effluent, were constructed between 1896-1909 either side of the MSC immediately surrounding the site. Solid waste ("night-soil", nowadays known as bio-solids) was transferred from the City Centre along the MSC on barges whereupon the waste was transferred to trams situated at Boysnope Wharf (SW corner of the Port Salford site). The waste would then be spread for agricultural purposes via a system of tramways across the fields, principally to the north of the A57. Such tramways and a railway which runs parallel to the northern bank of the MSC are detailed on the 1909 OS plans and are likely to have developed in conjunction with the sewage treatment works.

Between 1909 and 1929, the ground topography across the site west of and to the immediate east of the Barton Lock access road, appears to have been raised, evidenced by a lack of the 50ft contour and perimeter slope indicators (See historical photographic view dating from the 1930's within Appendix A). Boyles Brook previously indicated to meander N-S across the centre of the western site

area is detailed by construction records to have been culverted along the alignment of the Barton Dock access track during 1925. The culvert construction drawings detail original ground levels of circa 16mAOD. This western area is considered to have formerly been an area for disposal of dredged arisings within dredging lagoons – unfortunately there are no construction records to detail this, however the Boyles Brook record combined with OS mapping would appear to indicate that much of the infill occurred during the late 1920's.

1930-1970's

Post 1920's, the main site area west of Barton Dock access road was arable farmed. The raised area east of the access road was wooded; elsewhere the eastern area comprised open grassland (See historic photos in Appendix A). Barton Aerodrome to the north of the Port Salford main site was constructed in 1930 with the intention of development to become Manchester's main terminus; however by 1934 poor approach visibility due to the smog of Manchester had put paid to this, with the existing Manchester Ringway site selected as a preferable terminus location. Little change is evident until the 1940's when a sewerage treatment works for the aerodrome was constructed opposite the airfield entranceway. It is probable that this discharged due south via culvert to the Salt-Eye along the boundary of the raised land to the west. Within the north-west area of the Port Salford site, co-incident with the present day securely fenced tenanted area/Makro Warehouse area, a Royal Engineers (REME) facility was developed. This facility was believed to have included the maintenance and servicing of military vehicles and equipment and/or the storage of spare parts. It is not known whether ordnance was stored at the facility. Historical photographs show the area situated within the Port Salford site (currently tenanted area) comprised accommodation Nissan Huts set within grassed areas with four two-storey brick built structure associated with hardstanding. These connected to a large hardstanding area to the west with 7 large rectangular structures (assumed to be the main operational area) situated below the area now occupied by the Makro Warehouse. A closure date for this facility is unknown, however aerial photographs detail the structures as present during the 1960's.

Residential development adjacent to Barton Cemetery, NE of the Port Salford main site commenced in the 1930's, extending to the present day lay-out in the 1960's. The tramways on Barton Moss are no longer shown although their embankments remain. On the 1961 map, the M63 (now the M60) is shown to have been constructed running roughly north-south to the east of the site. The M62 was constructed across Barton Moss to the north and west from 1970-1973. During the 1960's the A57 was locally re-aligned adjacent to Barton Aerodrome, leaving the present day lay-by's which represent the former route.

1980-Present

Victoria Tip, landfill situated over the eastern Port Salford area, east of Barton Lock Access Rd operated from 1986-1994 accepting inert, industrial and commercial waste, and raising ground levels. Post-operation the landfill appears unmanaged. The Eccles Sewage Treatment Works west of the M60 were decommissioned during the 1980's to 1990's, and this land was subsequently developed for construction of the Salford City Stadium. West of Barton Dock Access Road, farming ceased during this period.

The former REME facility/storage depot site was utilised by Rhone Poulenc/Rhodia Limited for the synthesis and packaging of pharmaceuticals, and is now utilised for container storage.

2.3 Published Geology

In order to obtain an indication of potential ground conditions beneath the site the published British Geological Survey (BGS) Maps (1:10 000 and 1:50 000) scale were consulted. In addition on-line interactive viewers available from the Environment Agency and DEFRA were consulted, which together with a review of historical mapping, allowed for consideration of the potential for Made Ground. Extracts from the published geological plans are provided within Appendix C. The following strata types are indicated to be present:

2.3.1 Made Ground

Made Ground is not routinely included within BGS mapping, however as discussed within Section 2.2, ground level south of the A57 is known to have been raised by 3-5m and to greater depths within the areas of former river channel backfill. The following Made Ground types may be encountered:

2.3.1.1 Nightsoil

Nightsoil nowadays termed bio-solids is a euphemism for human excrement collected at night from cesspools, privies, etc, which was subsequently re-deposited as a fertilizer. Prior to the construction and development of Manchester's sewerage collection systems (ie. Pre-1920;s), records show that night soil was transported by barge from Manchester along the MSC and offloaded at Boysnope Wharf from where it was spread across Barton Moss via tramways to the north of the A57. There is no evidence that it was directly deposited south of the A57 within the main Port Salford area, however tramway tracks associated with these works may remain.

2.3.1.2 Reworked Silts (MGDCS)

Historical information has indicated that dredged material from the process of constructing and maintaining the Manchester Ship Canal (MSC) was deposited in the South West of the site, adjacent to the canal, extending up to the A57. Refer to drawing MMD-293621-G-DR-00-XX-14020 in Appendix B.

2.3.1.3 General Waste Deposits (MGGW)

Made Ground General Waste has been adopted for more recent recorded landfill deposits. The extents of landfills recorded are detailed within the WS Atkins Barton MasterPlan: Geotechnical and Environmental Desk Study (2000) Figure 9, detailing known and potential waste disposal sites as reproduced here within Appendix C. This has been verified against the Environment Agency online interactive viewer. It should be noted that earlier ground reclamation works associated with the MSC construction are not picked up by this plan, hence the location of these is covered by drawing MMD-293621-G-DR-00-XX-14020 in Appendix B. The known landfills are as follows:

- Victoria Tip (E021): Landfill operational between 1986-1994 bounded by the Salt-Eye to the south and east, the A57 to the north and the Barton Dock access road to the west. The tip is recorded to have accepted inert, industrial and commercial waste, excluding mine, quarry, agricultural and household. Waste. A former sewage works was sited to the North of the Victoria tip site.

- Eccles Corporation/ Eccles STW landfill (E012): Landfill operational between 1969-1993, situated 150m east of the Port Salford Main Site area, since redeveloped for the Salford City Stadium development and WGIS scheme development. The waste accepted included inert, commercial, household and liquids/sludges.

- New Hall Farm Landfill (E16686, E043): Landfill operational from 1940 recorded to have received inert, construction, industrial and liquids/sludge (including potentially undefined special wastes).This landfill occupies the A57 lay-by area in the NE corner at the Port Salford/WGIS interface.

- Boysnope Wharf landfill (E061): Landfill recorded but no known date situated over and extending beyond the western extent of the Port Salford main site, bounded by the MSC to the south, Makro warehouse to the north and the A57 to the west. From the site history it is likely that the age is consistent with the raising of the land pre-1920. The WS Atkins report details this landfill to comprise ash and cinders..

2.3.1.4 Construction Waste Deposits (MGCCW)

The raised ground south of the Salt-Eye which terminates at an earth bund present since the 1890's is believed to represent re-worked Sherwood Sandstone arisings from the construction of the MSC Barton Dock foundations and from the upstream MSC construction.

2.3.2 Superficial Deposits

2.3.2.1 Peat

The Barton Moss area is underlain by approximately 2-4 m of peat, a highly compressible material with high moisture content. Previous investigations of the peat within the region describe the material as a fibrous peat (Berry 1983 [(2)], M62 Soil Mechanics Report [(3)]). WS Atkins MasterPlan: Geotechnical and Environmental Desk Study (2000), Figure 9, reproduced here in Appendix C details the extent of Peat to terminate north of the Port Salford Main Site area, nevertheless, localised peat rafts may be present within the former buried floodplains of the River Irwell.

2.3.2.2 Alluvium (ALLCS)

Published geological maps indicated that Alluvial Deposits may be encountered south of the existing A57, associated with the former meandering River Irwell valley. Deposits may be anticipated to comprise of interbedded very soft to soft clays and silts interbedded with occasional bands of very loose to loose silty sand and gravel.

2.3.2.3 Glaciofluvial Deposits (GLSG)

Glacio-Lacustrine and Glacio-Fluvial Deposits are indicated to outcrop around the existing A57 area. The former are described as laminated clays and silts deposited in outwash basins; the latter are described as medium dense sands and gravels deposited in outwash channels.

2.3.2.4 Glacial Till (GLCL)

Glacial Till in the form of Boulder Clay is detailed to underlie the majority of the region. The material is typically described as a stiff to very stiff clay with entrained gravel and boulders and localised sand lenses.

2.3.3 Solid Geology

The geological mapping indicates that the site is underlain by the Sherwood Sandstone Formation of Triassic Age. The BGS Lexicon of rock units within the UK describes the Sherwood Sandstone as typically consisting of a red, yellow and brown part pebbly Sandstone with sub ordinate red mudstone and siltstone. South of the A57, the sandstone comprises the Wilmslow Formation.

2.4 Hydrogeology and Hydrology

2.4.1 Hydrogeology

The hydrogeological regime beneath the site, as defined by the Environment Agency's groundwater vulnerability classification system, comprises a main body of groundwater associated with the bedrock geology and an aquifer associated with the alluvial and glacio-fluvial deposits. There may also be localised perched groundwater bodies within the Made Ground on site.

The bedrock beneath the site comprises Triassic Sandstones of the Sherwood Sandstone Group, which are classed as a Principal Aquifer ("layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale"). Regional groundwater flow within this deposit is towards the west or south-west, although local groundwater flow may be controlled by topography and surface drainage features. Groundwater movement within the sandstone will be predominantly by intergranular flow. It should be noted that the MSC dredged level is likely to encounter the Sherwood Sandstone and hence unless self-sealed due to sedimentation, will to some extent be in hydraulic continuity with the aquifer.

Overlying alluvial and glacio-fluvial deposits which form a Secondary A Aquifer ("permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers") are believed to be in hydraulic continuity with the underlying sandstone, although groundwater movement within these deposits will be affected by the local occurrence of less permeable strata. The presence of the infilled channel of the former River Irwell may affect the movement of groundwater as drainage will be preferential towards and along the former channels.

The site is not located within a Groundwater Source Protection Zone, the nearest being situated approximately 3km to the east.

2.4.2 Hydrology

The MSC was constructed in the 1890's effectively canalising the River Irwell through the site area. The MSC is a private water way owned and operated by the Manchester Ship Canal Company. Water levels within the MSC are typically maintained at 13.3mAOD, rising by approximately 4.6m east of Barton Docks, and water flow is westerly towards the ultimate discharge at the mouth of the River Mersey.

Other than the MSC, the nearest significant surface water feature is the Salt Eye Brook, which drains from the NE-SW and runs along the abandoned River Irwell meander channel, situated 80m south of the WGIS realigned A57 underbridge, before discharging into the Manchester Ship Canal approximately 1km to the SW. Boyles Brook drains N-S passing beneath Barton Aerodrome, the A57 and the main Port Salford site in culvert before discharging into the Salt Eye Brook immediately prior to the confluence with the MSC. Prior to culverting during the 1920's, Boyles Brook meandered SSW across the main Port Salford area as detailed on Drawing MMD-293621-G-DR-00-XX-14020 in Appendix A.

Flood risk mapping published by the Environment Agency shows the main Port Salford area to be at risk of extreme flood from rivers, classified as areas likely to be affected by a major flood, with up to a 0.1 per cent (1 in 1000) chance of occurring each year. The flooding risk relates to the Manchester Ship Canal which is a managed water-way with flood defences, hence the assessment will be pessimistic. Detailed flood studies for the site will be required for planning, hence further discussion of flood risk is outside the scope of this report.

2.5 Mining

With reference to the previous Desk Studies undertaken on the site, Coal Authority reports have indicated that the site is in the likely zone of influence from workings of two coal seams at depths of 700 m to 910 m. The Coal Authority report indicates that the last date of working of these seams was in 1967 and that ground movement from these seams should have ceased by now.

2.6 Archaeology

There are no known archaeological areas of interest associated with the site.

2.7 Seismicity of the Area

This area is of low seismicity and there are no requirements for design to seismic codes.

2.8 Contaminated Land and Pollution Incidents

With reference to the previous Barton Masterplan Desk Study (WS Atkins 2000)[6], various known and potential waste disposal sites were identified (Desk Study Figure 9) as identified on Mott MacDonald Drawing MMD-293621-G-DR-00-XX-14020. The Barton Masterplan Desk Study (WS Atkins 2000)[6] recorded 10 pollution incidents within the environs of the site, 4 minor related to the A57, 1 insignificant related to Barton Aerodrome, 1 insignificant to the immediate east of the WGIS bridge and 4 minor situated at the mouth of the Salt-Eye Updating this against the Environment Agency pollution website, White Recycling Transfer Station situated to the immediate east of WGIS recorded a Bad compliance rating.

3. Ground Investigation – Field and Laboratory Studies

Due to previous development proposals of the Port Salford site, in the past, there have been several ground investigations, desk studies and interpretative reports relating to the site. References for these are listed in Section 1.4 and the reader is guided towards these for further background information relating to the Port Salford site and surroundings.

3.1 Summary of Historical Investigations

An initial extensive ground investigation was undertaken for the site area bounded by the Manchester Ship Canal, the A57 and the M60, at conceptual planning stage as part of the Barton Strategic Employment Study. This was supplemented by a second ground investigation of the Rodia Ltd, tenanted plot which sits to the NW of the site plot, south of the A57. The locations of the exploratory holes are detailed on Drawing MMD-293621-G-DR-00-XX-14020 within Appendix A and a breakdown of the field and laboratory studies undertaken through each investigation is detailed below:

3.1.1 WS Atkins Northwest report Barton Strategic Employment Site Ground Investigation and Assessment, 1998

WS Atkins was commissioned by Salford City Council to undertake a ground investigation and assessment for the strategic employment site at Barton to determine its feasibility for development. The objectives of the ground investigation were to establish the ground conditions throughout the site particularly in relation to its development potential. The investigation was undertaken by Foundation and Exploration Services (FES) Ltd during March-April 1997. The scope of the ground investigation comprised of the following

- 334 No. Machine Excavated Trial Pits to a depth range of 0.2 to 4.5 m bgl
- 101 No. Light Cable percussive boreholes to a depth range of 2.6 to 23.11 m bgl, with in-situ SPT testing.
- Installation and monitoring of 37 standpipes and 15 piezometers for groundwater depth and composition and gas monitoring.
- Contamination Testing – soil and leacheate extensive suites for metals, TPH, VOC's, SVOC's, organic content and occasional tests for faecal microbial indicators.
- Geotechnical Testing – undertaken on borehole samples only; included classification tests, quick undrained triaxials, oedometer tests, limited compaction tests.

3.1.2 WSP, Rhodia Ltd, Liverpool Road, Barton Moss, Manchester, 2000

WSP Environmental Ltd (WSP) was commissioned by Peel Holdings Ltd in 2000, to undertake a geo-environmental assessment of a site on Liverpool Road, Barton Moss, Manchester. The principal objective of the assessment was to identify potential geotechnical and environmental issues that could present potential liabilities for Peel Holdings as site owner.

- 17 No. Machine Excavated Trial Pits to a maximum depth of 3.8 m bgl
- 5 No. Light Cable percussive boreholes to a maximum depth of 9.5 m bgl with in-situ SPT testing.
- 20 No. Window Sample holes to a maximum depth of 4.0 m bgl
- Installation and monitoring of 11 standpipes for groundwater and gas.

- Contamination Testing – suites for metals, TPH, VOC's and SVOC's.
- Geotechnical Testing – limited classification and strength tests.

3.2 Project Specific Ground Investigation

A ground investigation for the Port Salford scheme was scoped by Mott MacDonald and undertaken by Geotechnics Ltd during the period January-March 2012. The aim of the investigation was two-fold; 1) to corroborate the significant historical investigation data set and to provide additional geotechnical information to enable improvement of the ground model; and 2) to undertake additional contamination testing such as to allow contamination and waste assessment in line with current legislation and practice.

3.2.1 Fieldwork

The ground investigation undertaken by Geotechnics Ltd comprised of the following:

- 17 No. Machine Excavated Trial Pits to a maximum depth of 3.8 m bgl
- 5 No. Cable Percussion boreholes extended by Rotary Coring drilling techniques to a depth of 25.0 m bgl with in-situ SPT testing, U-T100 sampling and piston sampling.
- 46 No. Window Sample holes to a maximum depth of 10.9 m bgl
- 38 No. Static Cone Penetrometer Tests with the piezocone to a maximum depth of 15.83 m bgl.
- 23 No. pore pressure dissipation Tests were undertaken during the CPT
- 11 No. Machine Excavated Trial pits to a depth of 1.4-3.7mbgl
- 4 No. Insitu Soakaway tests to BRE
- Installation and monitoring of 12 standpipes in boreholes for groundwater and gas composition.
- Contamination Testing – soil, leacheate and water suites for metals, TPH, VOC's, SVOC's and organic content
- Geotechnical Testing – classification tests, quick undrained triaxials, consolidated undrained triaxials, oedometers, rowe cells, earthworks relationship tests.

3.2.2 Laboratory Testing

Laboratory testing was scheduled by the Engineer (Mott MacDonald) upon receipt of draft borehole logs from Geotechnics Ltd. All geotechnical laboratory testing was undertaken by Geotechnics Ltd own in house laboratories (UKAS accredited Laboratory Testing No. 1365) however testing on rotary core was undertaken by Celtest (UKAS Accredited Laboratory, Number 494). The contamination testing was undertaken by Jones Environmental Forensics Ltd (UKAS Accredited Laboratory, Number 4225.).

3.2.2.1 Geotechnical Tests

Table 3.1 details the range of geotechnical tests that were scheduled as part of the 2012 ground investigation works.

Table 3.1: Geotechnical Tests Scheduled 2012

Test	Test Standard/ Specification	Number of Tests
Natural Moisture Content Determination	BS1377: Part 2 1990	134
Atterberg Limit Determination	BS1377: Part 2 1990	67
Particle Density Testing (small pyknometer)	BS1377: Part 2 1990	14
Particle Size Distribution	BS1377: Part 2 1990	69
Particle Size Distribution Sedimentation		26
Organic Matter Content	BS1377: Part 3 1990	33
Mass Loss on Ignition Determination	BS1377: Part 3 1990	4
Acid Soluble sulphate and pH (Soil)	BS1377: Part 3 1990	11
Water Soluble sulphate and pH (Soil)	BS1377: Part 3 1990	24
Water Soluble sulphate and pH (Water)	BS1377: Part 3 1990	1
Dry Density/Moisture Content relationship determination (2.5 kg hammer)	BS1377: Part 4 1990	14
Dry Density/Moisture Content relationship determination (4.5 kg hammer)	BS1377: Part 4 1990	1
One dimensional Oedometer Consolidation test	BS1377: Part 5 1990	10
Determination of the consolidation properties in a Hydraulic Cell upto 100 mm in diameter	BS1377: Part 6 1990	2
Unconsolidated Undrained Triaxial	BS1377: Part 7 1990	7
Consolidated Undrained Triaxial compression with measurement of pore pressure.	BS1377: Part 8 1990	5
Point Load Determination	ISRM	16
Unconfined Compressive Strength Determination	ISRM	7

3.2.2.2 Contamination Tests

Tables 3.2-3.4 detail the range of contamination tests that were scheduled as part of the 2012 ground investigation works.

Table 3.2: Suite of Contamination Tests Scheduled 2012: Soils

Contaminants	No. of Tests
As, B, Ba, Be, Cd, Cr, Cu, Fe, Hg, Ni, Pb, Se, V, Zn, pH, total sulphur, sulphate (water soluble), TPH screen, PAH screen, phenols, asbestos screen.	14
As, B, Be, Cd, Cr, Cu, Fe, Pb, Hg, Ni, Se, V,Zn, pH, total sulphur, sulphate (water soluble), SPECIATED TPH and SPECIATED PAH, VOC (including BTEX) total phenols and asbestos screen	44
PCB (Aroclors/ 7 congeners)	7

Table 3.3: Suite of Contamination Tests Scheduled 2012: Leacheate

Contaminants	No. of Tests
As, Cd, Cr, Cu, Hg, Ni,Pb, Se, Zn, pH, sulphate, PAH SCREEN	24
As, B, Ba, Be, Ca, Cd, Cr, Cu, Fe, Hg, Mg, Mn, Ni, Pb, S, Se, V, Zn, sulphide, chloride, pH, sulphate, PAH (Speciated by GCMS), BTEX, total phenols, total cyanide, free cyanide, Thiocyanate, ammoniacal Nitrogen, TPHCWG	5
PCB (Aroclors/ 7 congeners)	7

Table 3.4: Suite of Contamination Tests Scheduled 2012: Groundwater

Contaminants	No. of Tests
As, B, Ba, Be, Ca, Cd, Cr, Cu, Fe, Hg, Mg, Mn, Ni, Pb, S, Se, V, Zn, sulphide, chloride, pH, sulphate, PAH (Speciated by GCMS), BTEX, total phenols, total cyanide, free cyanide, Thiocyanate, ammonaical Nitrogen, TPHCWG	10
VOC - Target List	8
SVOC's and TIC's	8
PCB (Aroclors/ 7 congeners)	5
Hardness	8
Electrical Conductivity	8
Chemical Oxygen Demand (COD)	8
Total Organic Carbon (TOC)	8

3.2.3 Monitoring

Long term monitoring of the gas and groundwater levels was made possible by the installation of standpipes and standpipe piezometers as outlined in Table 3.5.

Table 3.5: Summary of Groundwater Installations

Exploratory Hole No	Response Zone Depth	Response Zone Strata
GBH41	3.0 - 6.0	MGGW
GBH43	4.0 – 7.0	MGGW
GWS05	1.0 - 3.0	MGGW
GWS09	1.0 - 4.0	MGDCS
GWS12	3.0 - 6.0	MGGW
GWS20	1.0 - 4.0	MGDCS
GWS24	2.0 - 5.0	MGGW
GWS28	1.0 - 4.0	MGDCS
GWS36	0.5 – 1.0	MGGW
GWS16	1.0 - 4.0	MGCCW
GWS31	7.5 – 9.0	MGGW/ALLCS
GWS07	6.75 – 10.0	MGDCS/GLCL/ GLSG
GWS22	5.0 - 7.0	ALLCS
GWS39	8.0 – 9.0	ALLCS
GWS14	7.0 – 9.0	ALLCS/ALLSG
GWS18	6.0 - 9.0	ALLCS/ALLSG
GWS38	5.8 – 7.0	ALLSG
GBH03	3.95 - 5.95	ALLSG
GBH04	8.0 – 10.0	GLSG
GBH05	1.0 – 4.0	GLSG
A57BH02	6.30-7.70	GLSG
A57BH01	21.80-25.30	SST
GBH02	13.7 – 14.86	SST
GBH01	17.0 – 20.0	SST

Monitoring of the gas and groundwater levels at the site commenced on the 17th February 2012. With further visits on the 1st March, 20th to 21st of March 2012, 13th April, 1st May 2012 and 19th July 2012. Surface water monitoring of the Salt Eye Brook was also undertaken between the 16th and 17th July 2012.

At each position a record of the groundwater level in each instrument was taken. On two visits samples were obtained from installations selected by the Engineer, following a purging of three volumes of water in the standpipe.

In addition to the groundwater levels, the following parameters were measured and recorded in each standpipe using a Gas Data LMSXI Gas Analyser:-

- Concentrations (% Vol) of CH_4, O_2, CO_2;
- N2, along with (% LEL) CH_4 and (ppm) H_2S;
- Flow Rate;
- Differential Pressure; and
- Barometric Pressure.

4. Ground Summary

4.1 Ground Model

Ground conditions vary considerably across the site, a function of the transient sedimentary processes (glacial and fluvial), followed by the complex ground reclamation and landfilling history. Details of exploratory hole records and in-situ tests are provided within the Factual Ground Investigation Reports as referenced in Section 1.3 of this report. This chapter aims to provide a summary account of the combined data set. Table 4.1 provides an overriding summary of ground conditions; Tables 4.2-4.12 summarise ground conditions for localised areas, detailing source exploratory hole data per area. Drawing MMD-293621-G-DR-00-XX-14020 details the location of exploratory holes and Drawing MMD-293621-G-DR-00-XX-14021 details the proposed Phase 1C development area overlain over the historical site information. Cross-sections through the site area are provided within Drawings MMD-293621-G-DR-00-XX-14024-14027.

A brief description of the various strata encountered is provided within the tables. Detailed discussion of geotechnical testing undertaken and geotechnical properties is provided within Chapter 5.

Reference to Drawing MMD-293621-G-DR-XX-11020 (reproduced here in Appendix B) details that south of the A57 significant reworking of the land has occurred, both naturally and through man's activities. The proposed model for the Port Salford main scheme, details increased Glacial Deposit thickness towards the south with channel sand and gravel deposits locally eroding into the Glacial Till. Subsequent fluvial action has eroded into the Glacial Deposits; the River Irwell valley formally meandered to the south of the A57 depositing increased thicknesses of soft clays and loose sands, forming a lower river floodplain elevation of circa 15-17mAOD. More recently, kick-started by the construction of the Manchester Ship Canal in the 1890's and the canalisation of the River Irwell, the former floodplain area has been extensively landfilled, generally raising ground levels across the site by 3-5m.

Groundwater and gas levels were monitored both during the works and over a 3 month period following the works to provide an update and validation of historical investigative works. Details of groundwater strikes are provided within Table 4.14 and details of groundwater monitored levels within Table 4.15. Gas monitoring flow rates, maximum/minimum gas concentrations, gas screening values and derived characteristic gas situations in accordance with CIRIA C665 are detailed in Table 4.16. It should be noted that Hydrogen Sulphide concentrations were negligible across the site.

Groundwater level is typically at approximately 14-16mAOD and in hydraulic continuity with both the surface waters of the MSC and Salt-Eye Brook, and the Sherwood Sandstone principal aquifer. Perched waters may be anticipated to be locally present held by the relatively impermeable (aquicludes) of the MGDCS and the ALLCS. The groundwater regional flowpath is to the SW, however within the site area flowpaths will have varying controlling influences including the 3m head difference across Barton Locks, the open Salt-Eye valley, the buried River Irwell and Boyle Brook channels, land drainage and buried culverted channels, the variable and erosive contact nature of natural materials, the variable nature and permeability of backfilled material and the geometry of landfilled material. Local groundwater flowpaths may therefore be anticipated to vary and cannot be modelled with any certainty.

Gas Characteristic Situation 3 would appear applicable for the proposed warehousing and port areas associated with gassing from the MGGW/MGDCS and ALLCS. Elsewhere little gassing appears evident from the MGCCW, ALLSG/GLSG, SST strata.

Table 4.1: General Summary of Ground Conditions

Stratum	Typical Description	Depth to Basal Surface (mbgl)	Typical Stratum Thickness (m)	Elevation of Basal Surface (mAOD)
Made Ground: (MGGW, MGDCS, MGCCW)	Historic data suggests that land reclamation and landfilling has been undertaken south of the A57 resulting in a complex distribution of variable material types of differing ages, with localised depth increase above former channel backfill. Made Ground for the purpose of assessment has been subdivided into 3 main categories: MGCCW – generally weathered sandstone waste now recovered as sand originating from the canal construction; MGDCS – very soft, clayey silt which is believed to have originated from dredging operations and deposited in settlement lagoons; MGGGW – general other landfilled made ground; within the early 20th century landfilling to raise levels appears to have been dominated by ash and clinker waste (from the Manchester Corporation), however later post war landfills comprise predominantly inert construction debris but were pre-regulation.	Varies but locally increases above backfilled former natural and diversionary River Irwell channels. For the majority of the site between 4-6m of Made Ground may be anticipated	Varies by type and location. Typically the Made Ground is 4-6m thick	Varies by type but typically circa 14-15mAOD
Alluvial Deposits (ALLCS, ALLSG)	Alluvial Deposits have been deposited by the River Irwell meandering river valley which is considered to have eroded into the glacial hinterland. The deposit varies between cohesive very soft to soft clayey, sandy to very sandy SILT to loose, very silty fine to medium SANDS. Typically the cohesive unit overlies the granular deposit. Occasional peat rafts may be evident.	Typically 6-10m but varies dependent upon position relative to former channels	Varies dependent upon position relative to former channels (typically 3-6m)	14-9mAOD (Not present beneath REME site)
Glacial Deposits (GLSG, GLCL)	The Glacial Deposits typically comprises Glacial Sands & Gravels underlying Alluvial Sands; the distinction between the strata is difficult from engineering description alone, without reliable insitu density measurements; typically the glacial sands and gravels are described as Medium dense silty very sandy fine to coarse GRAVEL. Glacial Till underlie the Glacial Sands & Gravels and are encountered as Stiff slightly sandy, slightly gravelly CLAY.	3-16m (typically 11-15m)	Varies subject to extent of erosional activity above and variable rockhead level, but typically 2-6m	19-3.8mAOD (typically 8-4mAOD)
Sherwood Sandstone (SST)	Sherwood Sandstone underlies the entirety of the site to in excess of 200m and comprises a dark red brown, moderately to highly weathered, fine and medium grained SANDSTONE, weak	Sandstone rockhead varies considerably across the site, falling towards the MSC.	n/a	Rockhead elevation falls from approx. 19mAOD within the REME area to approx. 4mAOD by the MSC
Groundwater	See Tables 4.14 & 4.15 below. Groundwater monitoring of deep installations suggest a regional groundwater level of 13-16mAOD, consistent with the MSC surface water; shallower installations within the Made Ground recorded localised perched waters between 17-19mAOD which are considered to be percolated surface waters perched above relatively impermeable Made Ground/Alluvial Deposits. East of Barton Locks, water levels may be artificially raised due to Barton Locks where canal level is raised to 17.87mAOD.			

Table 4.2: Exploratory Data for Port Area

Investigation Type	Hole No
Cable Percussion Boreholes	BH's 111, 112, 115, 116, 118, 119,120, 212, 215 BGS BH'sNW280, 258, 259
Rotary Boreholes	
Cone Penetration Tests	GCPT's 05-07, 09
Window Samples	GWS's 05, 07, 10
Trial Pits	TP's 132, 134, 139, 140,143, 158, 159, 160, 161, 168, 169, 182, 183, 212, 215, 266, 267, 270

Table 4.3: Ground Model for Phase 1A Port Area

Strata	Typical Description	Conservative Characteristic Base Elevation (mAOD)	Typical Thickness (m)
Topsoil	Varies between a slightly clayey, very silty fine to coarse sand to silty, sandy clay	Varies but typically 300mm below existing ground level	0.3
Made Ground (MGDCS)	Very soft grey-black clayey silt with occasional organic material	Anticipated to be locally absent within the immediate proximity of the MSC, otherwise 14.8-16.5	Where present 5.0
Alluvial Clay & Silt (ALLCS)	Very soft to firm grey, slightly sandy to sandy, clayey SILT	10.0-12.0	4.5
Alluvial/Glacial Sands & Gravels	Loose becoming medium dense, silty fine and medium SAND locally grading into medium dense fine to coarse GRAVEL (likely associated with former River Irwell channels)	5.8-6.6	4.5
Glacial Till	Firm to stiff, brown, sandy, silty CLAY with a little subangular to subrounded fine to coarse gravel	Locally absent otherwise 4.0-5.8	Varies upto 2.0
Sherwood Sandstone	Dark red brown, moderately to highly weathered, fine and medium grained SANDSTONE, weak.	Sandstone rockhead reduces from circa 12-14mAOD at the western end to 4mAOD at the eastern end	>50m

Table 4.4: Exploratory Data for Phase 1C Port Area Western Extension

Investigation Type	Hole No
Cable Percussion Boreholes	BH's 108, 109
Rotary Boreholes	
Cone Penetration Tests	GCPT's 08
Window Samples	
Trial Pits	TP's 115, 116, 118, 121-124, 126, 127

Table 4.5: Ground Model for Phase 1C Port Area Western Extension

Strata	Typical Description	Conservative Characteristic Base Elevation (mAOD)	Typical Thickness (m)
Made Ground Situated across the extension of the Port Area to the West (MGGW)	Black to dark brown, silty fine to coarse ash sand with much angular to subrounded fine to coarse gravel of ash, clinker and occasional brick, sandstone, pottery, glass, metal, plastic and wood.	May be anticipated to vary but proven to 16.0-17.9mAOD	Where present 2.0-2.5m

Table 4.6: Exploratory Data for Private Rail Sidings (Outside Port Area), Salt-Eye Diversion Area and Warehouse Area south of the Salt-Eye

Investigation Type	Hole No
Cable Percussion Boreholes	BH's 305, 306, 308-313, 501, 502, 504, 505 GBH's 01-04 UUBL01-06
Rotary Boreholes	GBH's 01, 04
Cone Penetration Tests	GCPT's 03, 04, 13, 18- 20, 34
Window Samples	GWS's 03, 16-18, 25, 26, 35
Trial Pits	TP's 302-340, 528-531 GTP's 10, 11

Table 4.7: Ground Model for Private Rail Sidings (Outside Port Area), Salt-Eye Diversion Area and Warehouse Area south of the Salt-Eye

Strata	Typical Description	Conservative Characteristic Base Elevation (mAOD)	Typical Thickness (m)
Variable Made Ground (MGCCW beneath higher ground SW of berm, and MGDCS to the NE of berm)	MGCCW: typically very loose to loose, gravelly silty to very silty sand, locally grading to soft, greyish brown clay.	Varies between 17.9-14.3	3.8-6.2
	MGDCS: typically very soft grey-black clayey silt with occasional organic material.	Varies between 15.1-11.8	2.9-6.2
Alluvial Clay Silt Deposits (ALLCS)	Very soft, black, slightly sandy to sandy, clayey SILT	12.0 mAOD	3.0
Alluvial/Glacial Sands & Gravels	Loose becoming medium dense, silty fine and medium SAND locally grading into medium dense fine to coarse GRAVEL (likely associated with former River Irwell channels)	5.1mAOD	5.0
Sherwood Sandstone	Dark red brown, moderately to highly weathered, fine and medium grained SANDSTONE, weak.	Sandstone rockhead encountered circa 5.1mAOD to the South of the site rising to 8mAOD towards the centre of the site.	>50m

Table 4.8: Exploratory Hole Data for former REME Area

Investigation Type	Hole No
Cable Percussion Boreholes	BH's 01-05A
Rotary Boreholes	
Cone Penetration Tests	GCPT's 21
Window Samples	WS's 01-20
	GWS's 27, 36, 37
Trial Pits	TP's 01-17
	GTP's 05, 06

Table 4.9: Ground Model for former REME Area

Strata	Typical Description	Conservative Characteristic Base Elevation (mAOD)	Typical Thickness (m)
Made Ground (MGGW)	Locally present within the NE corner of the REME site (presumably placed to form a level site area): clayey, sandy fill with occasional bricj fragments, concrete, glass, slate, drums and reinforcement rods Elsewhere, variable surfacing including 0.2-0.3m thick concrete, 0.1-0.2m tarmacadam. 0.3m topsoil, typically underlain by <0.8m of made ground comprising reworked clayey sands.	Varies	Varies from 1.0-5.0m
Glacial Sands & Gravels (GLSG)	Medium dense, orangish brown, slightly silty, slightly gravelly, fine to coarse SAND. Interbedded with Glacial Till clays.	21.3-17.9	Typically 1m, but locally thicker horizons
Glacial Till	Firm to Stiff brown clay with sub-angular gravel, interbedded with Sand and Gravel layers. Locally laminated.	15.9-19.4	Varies from typically 1m-3m
Sherwood Sandstone	Dark red brown, moderately to highly weathered, fine and medium grained SANDSTONE, weak.	Rockhead encountered varying between 20.7 to <15.9	>50m

Table 4.10: Exploratory Hole Data for Warehouse Area west of Barton Dock Road

Investigation Type	Hole No
Cable Percussion Boreholes	BH's 114, 117, 119, 203, 204, 206, 207, 209-211
Rotary Boreholes	
Cone Penetration Tests	GCPT's 10, 11, 14-16, 22
Window Samples	GWS's 11-14, 19-22, 28-30, 38, 39
Trial Pits	TP's 142, 144, 147-154, 162-166, 170, 171, 204-225, 240-242, 248, 249, 251-265, 268, 269

Table 4.11: Ground Model for Warehouse Area west of BDR

Strata	Typical Description	Conservative Characteristic Base Elevation (mAOD)	Typical Thickness (m)
Variable Made Ground (MGDCS)	Very soft, black, slightly sandy clayey silt resulting from historical dredging operations. This particularly soft, silty material is indistinguishable from the topsoil, typically the top 1m contains rootlets and throughout the material is highly organic. The Silt is interbedded with clay and sand lenses locally, however no continuous layers were recorded. The deepest layers of the MGDCS were found within the historic route of Boyle Brook.	Ranging between 9.6 to 14.8mAOD	Typically >6m
Alluvial Clay & Silt (ALLCS)	The MGDCS is underlain by a thin layer of Alluvial deposits. Records only encountered this material in selected locations, away from the historic route of Boyle's Brook. Brown sandy soft to firm clay.	Circa 11.6mAOD	Up to 3m
Alluvial/Glacial Sands & Gravels (ALLSG/ GLSG)	Moderately dense, coarse sands and Gravels. With the finer sands overlaying the coarser gravel layers. To the east of the warehouse location a local band of brown, firm clay, Glacial Till was encountered, up to 1m deep, directly overlying the Sherwood sandstone.	Ranging between 5.8mAOD at the north of the area to 10.0mAOD at the South East.	Up to 4.0m
Sherwood Sandstone	Dark red brown, moderately to highly weathered, fine and medium grained SANDSTONE, weak.	Rockhead encountered circa 5.8 to 10.0mAOD.	>50m

Table 4.12: Exploratory Hole Data for Warehouse Area east of Barton Dock Road, North of Salt-Eye

Investigation Type	Hole No
Cable Percussion Boreholes	BGSNW's 242, 243 BH's 208, 213A, 214, 301-303, 417-424B GBH's 40, 41, 43 A57BH1, A57BH2
Rotary Boreholes	A57BH1, A57BH2
Cone Penetration Tests	GCPT's 12, 17, 23, 24
Window Samples	GWS's 15, 23, 24, 31-34, 42, 44, 45
Trial Pits	TP's 226-233, 236-239, 243-247, 250, 341-355, 402-424, 468-472, 479, 480

Table 4.13: Ground Model for Warehouse Area east of Barton Dock Road, North of Salt-Eye

Strata	Typical Description	Conservative Characteristic Base Elevation (mAOD)	Typical Thickness (m)
Variable Made Ground (MGGW)	Medium dense to dense grey to black, silty, fine to coarse sand with some to much angular to rounded fine to coarse gravel, cobbles and boulders of brick stone, concrete, ash and slag. With rare fragments of metal, wood, glass and plastic, timber and textiles. Slightly malodorous. Locally grades into very soft to firm to stiff, dark grey and black, very sandy, silty clay.	Circa 14.6mAOD	Up 10 9m
Alluvial Clay & Silt (ALLCS)	Soft Grey sandy silt with clay lenses.	Circa 10.0mAOD	Up to 4.5m
Alluvial/Glacial Sands & Gravels (ALLSG/ GLSG)	Medium dense, coarse sands and Gravels. With the finer sands overlaying the coarser gravel layers.	Circa 9.5 - 4.1mAOD	Up to 6.1m
Glacial Till	Firm to stiff becoming stiff, brown sandy, silty clay.	Varies between 8.3-2.2, typically forming a mantle above the rockhead	1-3m
Sherwood Sandstone	Dark red brown, friable, moderately to highly weathered SANDSTONE, weak	Rockhead encountered varying between 8.27mAOD (BH417) to 2.2mAOD (BH302)	>50m

Table 4.14: Water Strikes (Geotechnics 2012)

Hole Id	Geology	Water strike depth (m bgl)	Water strike level (m AOD)
GBH01	MGCCW	4.95 (4.9)	16.51 (16.56)
GBH02	MGCCW	5.15 (5.1)	16.33 (16.38)
GWS17	MGCCW	0.2	21.13
GBH04	MGDCS	1.6 (1.5)	16.4 (16.5)
GWS07	MGDCS	2.75	17.55
GWS07	MGDCS	4.2	16.1
GWS09	MGDCS	5.5	14.48
GWS13	MGDCS	0.3	20.5
GWS13	MGDCS	1.1	19.7
GWS14	MGDCS	0.5	19.57
GWS22	MGDCS	0.3	19.14
GWS30	MGDCS	0.9	18.05
GBH41	MGGW	0.1	22.25
GBH43	MGGW	3.5 (3.3)	17.43 (17.63)
GBH43	MGGW	6.8 (5.9)	14.13 (15.03)
GWS05	MGGW	2.2	19.16
GWS06	MGGW	1.75	19.85
GWS10	MGGW	7	13.32
GWS12	MGGW	6.5	14.79
GWS23	MGGW	0.5	21.39
GWS32	MGGW	0.1	21.85
GWS32A	MGGW	0.2	21.77
GWS42	MGGW	6.8	14.89
GWS44	MGGW	1.2	19.01
GBH02	ALLCS	6.7 (6.55)	14.78 (14.93)
GBH40	ALLCS	8.8 (8.6)	14.03 (14.22)
GWS01	ALLCS	2	19.44
GWS06	ALLCS	8.35	13.25
GWS07	ALLCS	7.5 (7.8)	12.8 (12.5)
GWS26	ALLCS	4	13.93
GWS31	ALLCS	8.2	14.66
GWS38	ALLCS	1	17.78

Hole Id	Geology	Water strike depth (m bgl)	Water strike level (m AOD)
GBH01	ALLSG	8.2 (8.05)	13.26 (13.41)
GBH03	ALLSG	4.15 (2.85)	13.77 (15.07)
GBH04	ALLSG	5 (3.7)	13 (14.3)
GWS02	ALLSG	5.2	16.02
GWS03	ALLSG	5	16.46
GWS16	ALLSG	6.9	14.48
GWS28	ALLSG	8	11.31
GWS35	ALLSG	4	14.56
GBH05	GLSG	0.95	19.97
GBH05	GLSG	13.5 (8,75)	7.42 (12.17)
GBH05	GLCL	7.45 (7.25)	13.47 (13.67)
GBH05	GLCL	8.5 (8.15)	12.42 (12.77)
GBH05	GLCL	10.1	10.82
GBH05	GLCL	11.05 (9.9)	9.87 (11.02)
GBH05	GLCL	12.45 (9.9)	8.47 (11.02)
GWS19	GLCL	3.7	16.42

Table 4.15: Groundwater Monitoring Data (Geotechnics 2012)

Exploratory Hole No	Response Zone Depth	Response Zone Strata	Groundwater Level				
			17/02/2012	01/03/2012	20/03/2012	13/04/2012	01/05/2012
GBH41	3.0 - 6.0	MGGW	Dry	Dry	Dry		Dry
GBH43	4.0 – 7.0	MGGW	3.55 (17.38)	3.58 (17.35)	3.8 (17.13)		3.64 (17.29)
GWS05	1.0 - 3.0	MGGW	1.68 (19.68)	1.71 (19.65)	1.85 (19.51)		1.9 (19.46)
GWS09	1.0 - 4.0	MGDCS		1.95 (18.03)	2.07 (17.91)		2.05 (17.93)
GWS12	3.0 - 6.0	MGGW	1.84 (19.45)	1.9 (19.39)	1.98 (19.31)		1.98 (19.31)
GWS20	1.0 - 4.0	MGDCS	0.45 (19.66)		0.59 (19.52)		0.84 (19.27)
GWS24	2.0 - 5.0	MGGW	Dry	Dry	Dry		4.98 (17.06)
GWS28	1.0 - 4.0	MGDCS	1.12 (18.12)	1.13 (18.18)	1.16 (18.15)		1.02 (18.29)
GWS36	0.5 – 1.0	MGGW	Dry	Dry	Dry		Dry
GWS16	1.0 - 4.0	MGCCW	Dry	Dry	Dry		Dry
GWS31	7.5 – 9.0	MGGW/ALLCS		7.88 (14.98)	7.91 (14.95)		7.94 (14.92)
GWS07	6.75 – 10.0	MGDCS/GLCL/ GLSG	6.84 (13.46)	6.84 (13.46)	6.86 (13.44)		6.91 (13.39)
GWS22	5.0 - 7.0	ALLCS	1.43 (18.01)	1.55	1.21 (18.23)		2.94 (16.5)
GWS39	8.0 – 9.0	ALLCS	2.64 (15.85)	2.55 (15.94)	2.61 (15.88)		2.6 (15.89)
GWS14	7.0 – 9.0	ALLCS/ALLSG	6.36 (13.71)	6.3 (13.77)	6.31 (13.76)		6.36 (13.71)
GWS18	6.0 - 9.0	ALLCS/ALLSG	4.45 (17.19)	4.53 (17.11)	4.61 (17.03)		4.67 (16.97)
GWS38	5.8 – 7.0	ALLSG	2.8 (15.98)	2.77 (16.01)	2.83 (15.95)		2.8 (15.98)
GBH03	3.95 - 5.95	ALLSG	2.43 (15.49)	2.51 (15.41)	2.64 (15.28)		2.59 (15.33)
GBH04	8.0 – 10.0	GLSG	3.34 (14.66)	3.4 (14.6)	3.5 (14.5)		3.34 (14.66)
GBH05	1.0 – 4.0	GLSG	1.93 (18.99)	1.36 (19.56)	1.44 (19.48)		1.51 (19.41)
A57BH02	6.30-7.70	GLSG				4.30 (15.84)	
A57BH01	21.80-25.30	SST				6.13 (16.06)	
GBH02	13.7 – 14.86	SST	5.19 (16.29)	5.27 (16.21)	5.35 (16.13)		5.34 (16.14)
GBH01	17.0 – 20.0	SST	6.28 (15.18)	6.28 (15.18)	6.3 (15.16)		6.3 (15.16)

Table 4.16: Summary of Gas Monitoring (Geotechnics 2012)

Hole ID	Location	Response zone	Response zone strata	Methane				Carbon dioxide			CS
				Max flow	Min conc	Max conc	GSV	Min conc	Max conc	GSV	
GBH41	Warehousing	3.0 - 6.0	MGGW	5.7	1.4	7.8	0.44	0	0	0	2
GBH43	Landscaping	4.0 – 7.0	MGGW	0.1	0	6.9	0.007	0	0.2	2 x 10-4	1
GWS05	Wharf	1.0 - 3.0	MGGW	4.3	0	0	0	0	2.5	0.108	2
GWS24	Warehousing	2.0 - 5.0	MGGW	10	0	25.5	2.55	0	0.9	0.09	3
GWS36	Landscaping	0.5 – 1.0	MGGW	0	0	0	0	0	6.7	0	1
GWS09	Wharf	1.0 - 4.0	MGDCS	0.6	2	41.5	0.25	0.5	15	0.09	2
GWS12	Warehousing	3.0 - 6.0	MGDCS	0	0	0	0	0	0	0	1
GWS20	Warehousing	1.0 - 4.0	MGDCS	0.1	0	0	0	0	0	0	1
GWS28	Warehousing	1.0 - 4.0	MGDCS	0.1	0	3.4	0.003	0	104	0.104	2
GWS07	Wharf	6.75 – 10.0	MGCCW, ALLCS, ALLSG	0	0	0	0	0	0	0	1
GWS16	Wharf	4.0 - 7.0	MGCCW, ALLCS, ALLSG	0	0	0	0	0.6	3.5	0	1
GWS31	Warehousing	7.5 – 9.0	MGGW, ALLCS	6.8	0	2.2	0.15	0	2.1	0.143	2
GWS22	Warehousing	5.0 - 7.0	ALLCS	0	0	0	0	0	0	0	1
GWS39	Warehousing	8.0 – 9.0	ALLCS	0.8	0	5.4	0.043	0	1.3	0.024	1
GBH03	Wharf	3.95 - 5.95	ALLSG	0	0	0	0	0	0.2	0	1
GWS14	Warehousing	7.0 – 9.0	ALLSG	0.1	0	0	0	0	0.3	3 x 10-4	1
GWS18	Landscaping	6.0 - 9.0	ALLSG	0	0	0	0	0	0.2	0	1
GWS38	Warehousing	5.8 – 7.0	ALLSG	0	0	0	0	0	0	0	1
GBH05	Warehousing	1.0 – 4.0	GLLCL	0	0	0	0	0	0.2	0	1
GBH04	Warehousing	8.0 – 10.0	GLSG	0.1	0	0	0	0	0.2	2 x 10-4	1
GBH01	Railway	17.0 – 20.0	SST	0	0	0	0	0	0.2	0	1
GBH02	Salteye	13.7 – 14.86	SST	0	0	0	0	0	0	0	1

5. Ground Conditions & Material Properties

Extensive geotechnical in-situ and laboratory testing has been undertaken across the site across all investigation phases. Data for all phases has been converted to Association of Geotechnical & Geoenvironmental Specialists (AGS) electronic format AGS3.1 to enable interrogation of the data set. Details of exploratory hole records and testing undertaken are provided within the Factual Ground Investigation Reports as referenced in Section 1.3 of this report. This chapter aims to provide summary plots per stratum type as discussed within Chapter 4 to enable derivation of site-wide generic characteristic parameters. Determination of design parameters applicable to individual design packages is outside the scope of this report and will sit with detailed designers.

5.1 Made Ground

Made Ground was encountered across the majority of the main Port Salford development due to the historical ground reclamation. As previously discussed, three distinct subdivisions of Made Ground are apparent. Drawing MMD-293621-G-DR-00-XX-14020 details the location of exploratory holes and Drawing MMD-293621-G-DR-00-XX-14021 detailing the proposed Phase 1C development area overlain over the historical site information are provided within Appendix A, and show the relative distribution of the Made Ground types near surface.. These are discussed separately below:

5.1.1 Reworked Silt (MGDCS)

Reworked dredged silt was principally identified in two areas of the main Port Salford Site as shown in the above referenced drawings. The deposit is associated with the original route of the River Irwell, now backfilled and the large area to the South East of the site, west of Barton Dock Road, where dredged materials were deposited over time from the MSC.

Figure 5.1: Particle Size Distribution Curve: MGDCS

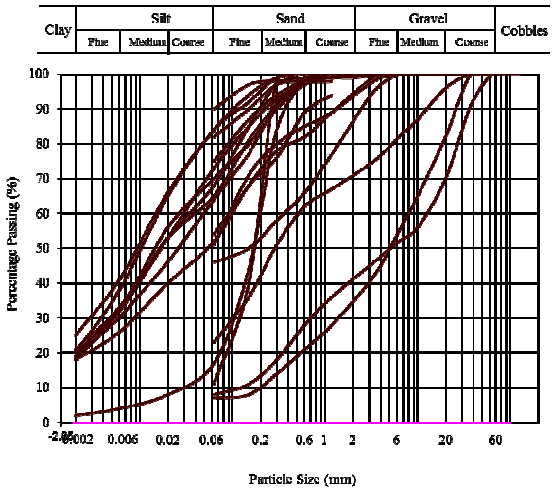
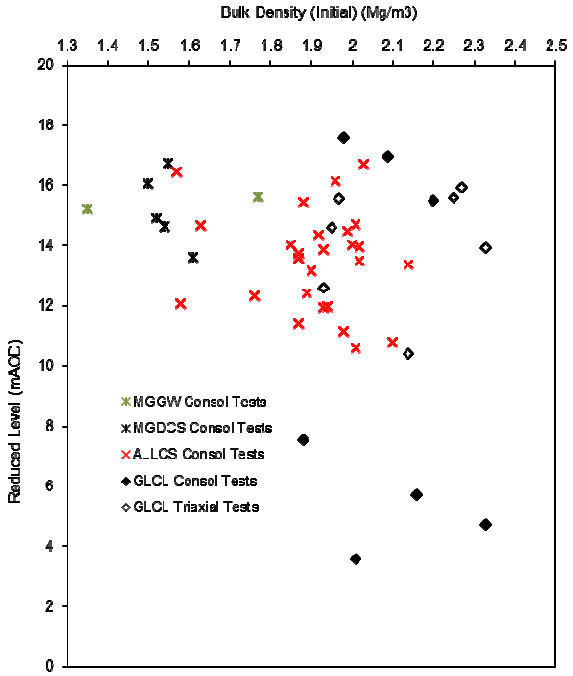


Figure 5.1 presents grading curves for the MGDCS within the site. The finer grading curves are considered the more representative when considered against the engineering descriptions for the unit; the coarser curves being representative of localised granular pockets or granular units towards the base of the MGDCS. The finer material is multi-graded (relatively well graded), with the curves representing a slightly clayey to clayey, sandy (fine) silt to very silty fine sand.

Figure 5.2 presents bulk density data determined for all strata as reported for laboratory triaxial and oedometer testing. The MGDCS may be seen to possess a significantly lower density than the underlying strata, with a typical density of 1.5-1.6Mg/m^3 .

Figure 5.2: Bulk Density Profile: All Strata



Figures 5.3 and 5.4 detail the A-line plasticity chart and combined moisture content and plasticity limits chart for the MGDCS. From Fig 5.4, the moisture content generally varies between 40-95%, typically plotting closer to the liquid limit than plasticity limit, consistent with a normally consolidated material. Plasticity index ranges from I_p = 8-50%, qualifying as a high to extremely high plasticity silt deposit.

Figures 5.5 and 5.6 present the CPT cone resistance profile for the MGDCS. Above 18mAOD, raised friction ratios suggest an increased organic and clay content; thereafter the reduced friction ratio suggests increased silt content. Cone resistance is typically 0.2-0.6MPa and friction ratio at 2%, typical of sensitive fine grained material in accordance with published empirical CPT interpretations.

Figure 5.7 presents an undrained shear strength profile for the MGDCS derived directly from triaxial tests and in-situ hand vane tests and from empirical derivations from plasticity data, standard penetration testing (SPT's), and cone penetration tests (CPT's).

Figure 5.3: Plasticity A-Line Plot: MGDCS

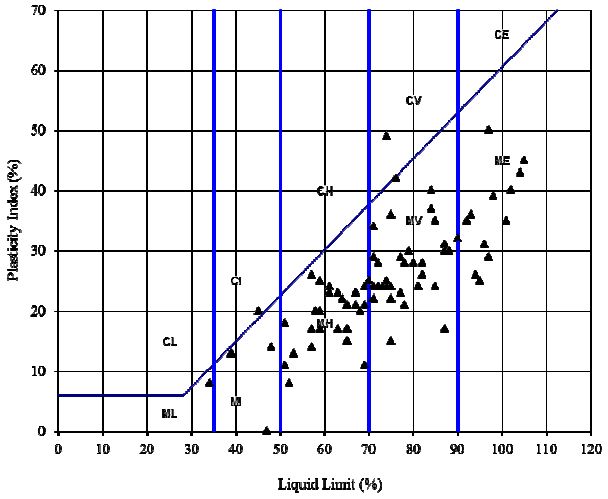


Figure 5.4: Natural Moisture Content & Plasticity Profile: MGDCS

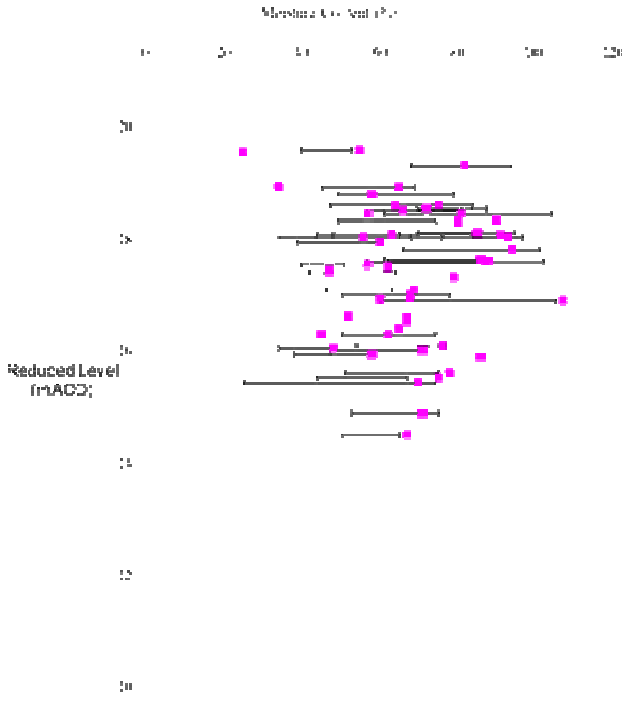


Figure 5.5: Cone Resistance Profile: MGDCS

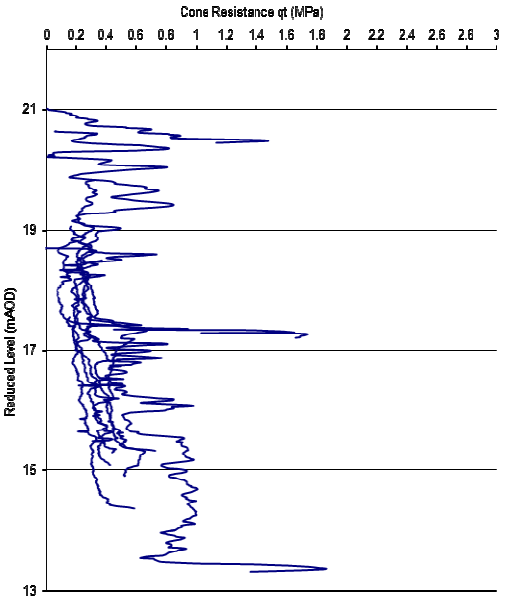


Figure 5.6: Friction Ratio Profile: MGDCS

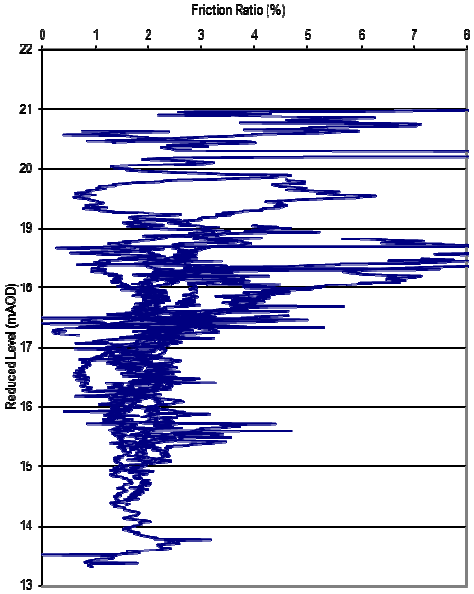
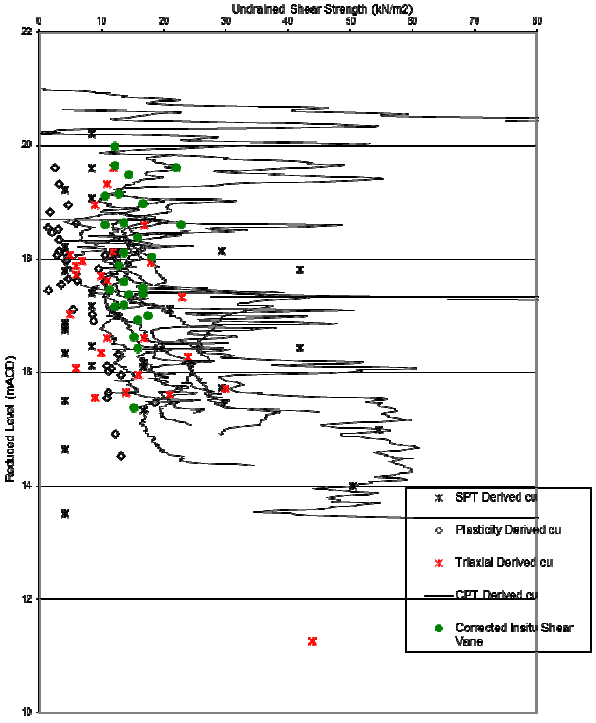


Figure 5.7: Combined Undrained Shear Strength Profile: MGDCS



$c_u = (q_t - \sigma) / N_{kt}$ (Aas et al 1986)[12]

where: c_u = undrained shear strength (kN/m^2)
q_t = corrected cone resistance (kN/m^2)
σ = overburden pressure (kN/m^2)
N_k = cone factor (15 adopted)

$c_u = 4.2\ N_{60}$ (CIRIA C143 (1995))
4.2 factor adopted appropriate for Ip of 20-40%

$c_u = (0.11 + 0.0037 I_p) * \sigma'_v$)
(Skempton & Henkel (1953))

The direct determinations and insitu determinations (discounting SPT data below groundwater level where ineffective water balancing may have affected test results) provide relatively consistent undrained shear strength of between 10-20kN/m^2, consistent with very low soil strength.

Figure 5.8: 1-D Consolidation Summary Plot: MGDCS

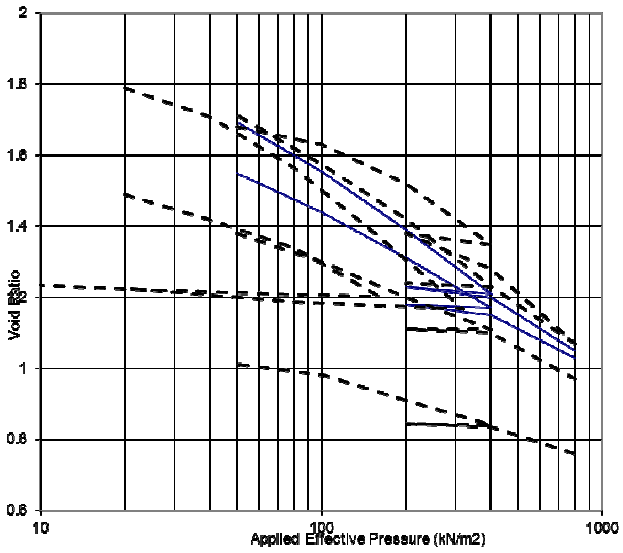


Figure 5.8 details consolidation testing undertaken on the MGDCS. The solid lines indicate investigation data west of Barton Dock Road; the dashed lines detail investigation data for the MGDCS area south of the Salt-Eye. 8No 1-D oedometer tests were undertaken. The tests possess a similar compression gradient averaging a Cc value of 0.05-0.0.1. Utilising a published relationship between Cc and Cα the secondary compression index for sandy clays of Cα = 0.03Cc (Mesri 1990)[13], a Cα of circa 0.002-0.003 is derived.

Figures 5.9 and 5.10 detail the coefficient of volume compressibility (m_v) and coefficient of consolidation (c_v) normalised to 100kN/m^2 greater than the insitu stress state determined from oedometer tests. In addition the coefficient of volume compressibility derived from empirical CPT correlation as detailed below is detailed on Fig 5.9.

$m_v = 1 / (\alpha_m * q_c)$
where $\alpha_m = 4$ (EN 1997-2:2007 Table D2)

The data suggests an m_v value of 1m^2/MN within the upper 2m, reducing to 0.5m^2/MN with depth typical of a highly compressible material.

Figure 5.9: Coefficient of Compressibility Profile: MGDCS

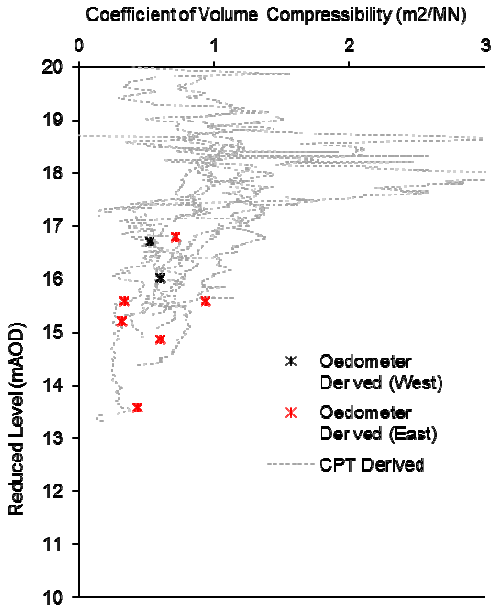


Figure 5.10: Coefficient of Consolidation Profile: MGDCS

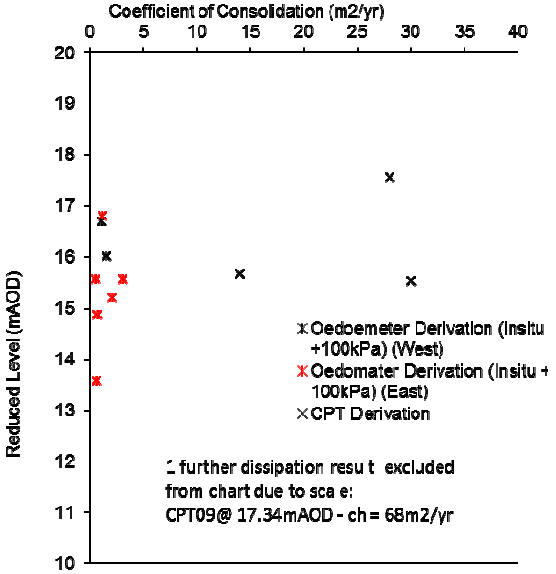


Figure 5.11: Stiffness Derivation from Triaxial Data: MGDCS

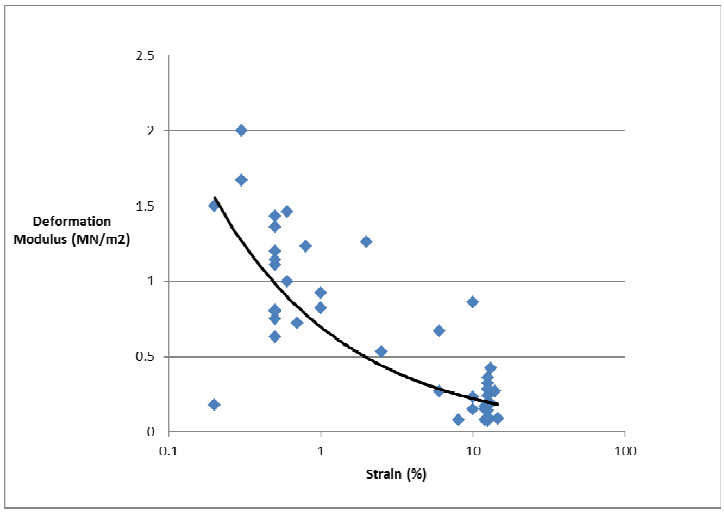


Figure 5.11 presents the strain dependency of deformation modulus as determined from initial moduli of undrained unconsolidated triaxial test data from the historical 1997 investigation. The derived stiffnesses are very low as may be anticipated from the classification and strength data.

Figure 5.12: Compaction/CBR/mc Relationship: MGDCS

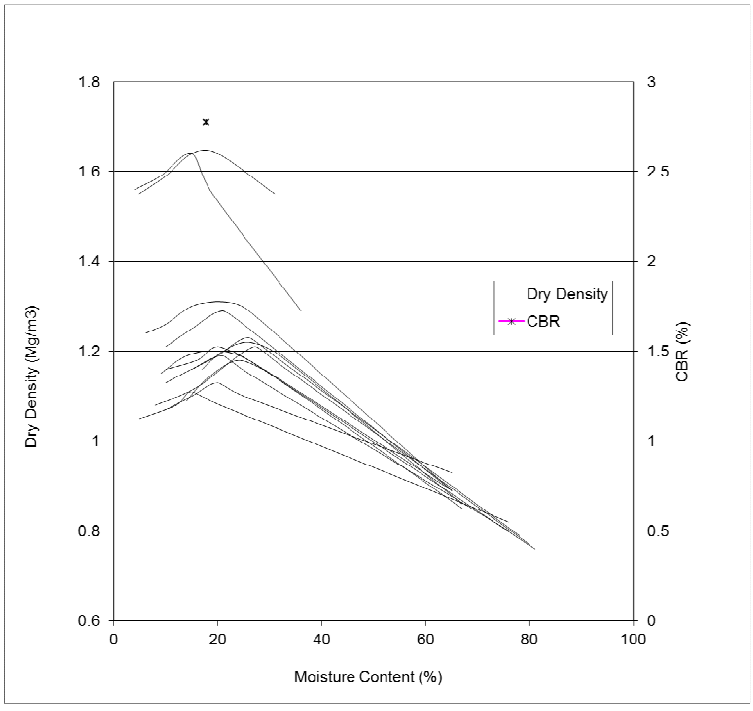


Figure 5.12 details compaction testing undertaken on the MGDCS to determine potential for re-use. The optimum moisture content (omc) can be seen to vary between 20-23% significantly less than the in-situ natural moisture content. The two elevated data sets relate to compaction tests undertaken within granular rich layers at the top and bottom of the unit, the lower of rich is an ash rich deposit. A CBR of 2.75 was determined at the omc on one of these anomalous data sets and is not considered representative of the deposit on the whole.

Figure 5.13: Soil pH profile: MGDCS

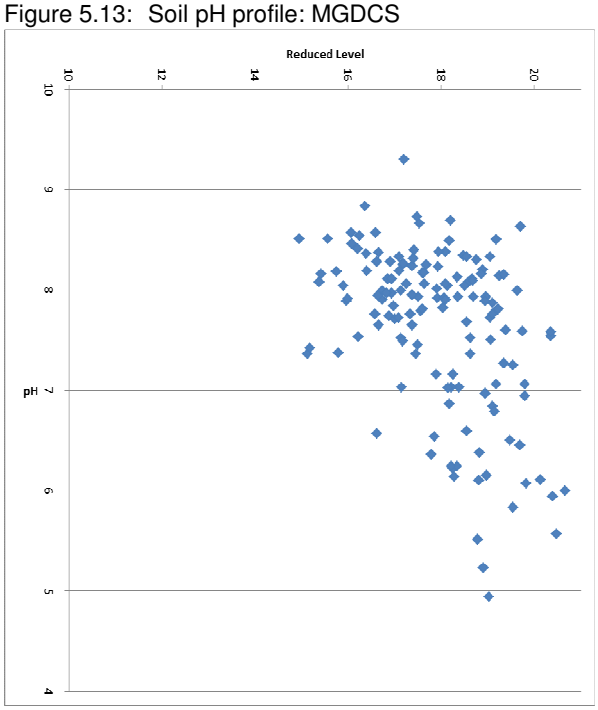


Figure 5.14: Soil SO4 profile MGDCS

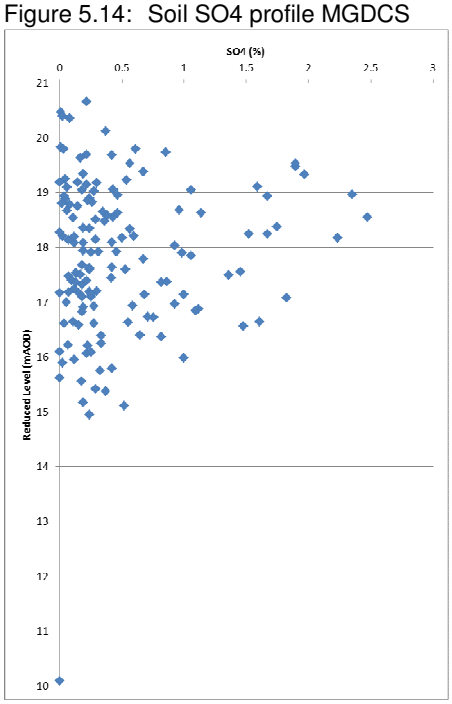
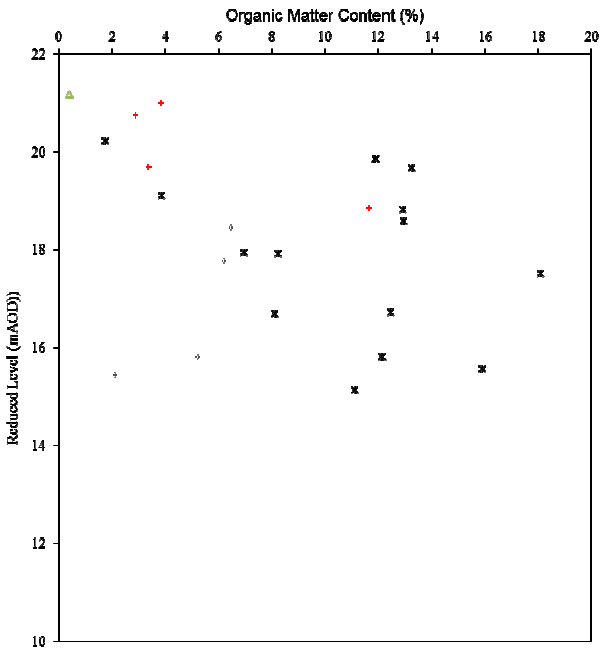


Figure 5.15: Organic Matter Content Profile: All Strata



Figures 5.13-5.15 present water soluble sulphate, pH and organic matter content profiles for the MGDCS. From reference to BRE Special Digest 1, Table C2 a design sulphate classification of DS-3 would apply.

5.1.2 General Waste Deposits (MGGW)

The MGGW deposits are distributed across the site, representing relatively recent landfill deposits (Victoria Tip, New Hall Farm) and older Boysnope Wharf landfill which locally underlies the dredged clays and silts. The following provide summaries of the data, however from the nature of the material and varied material origins, material properties may be anticipated to vary.

Figure 5.16: Particle Size Distribution: MGGW

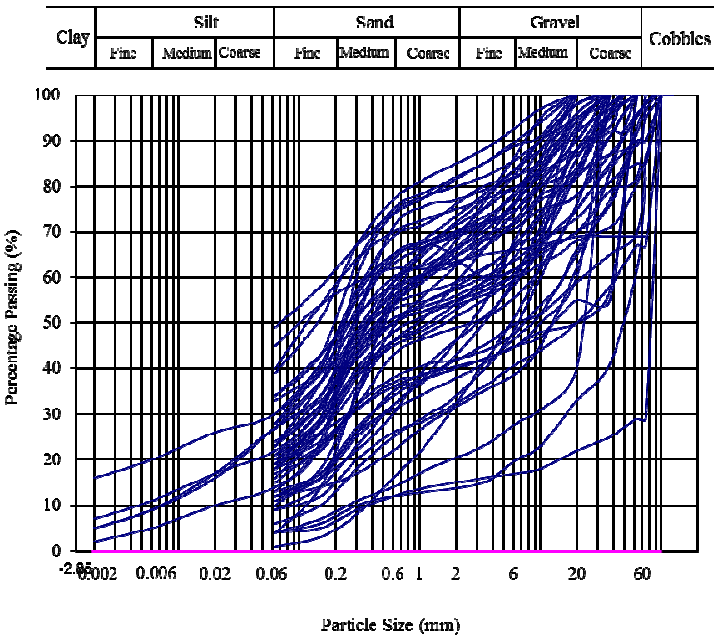


Figure 5.16 presents grading curves for the MGGW within the site. The grading envelope can be seen to be relatively wide, possessing uniformity coefficients (C_u) between 10 and 1000, typically approaching 100, representative of a multi-graded (well-graded) material. The material can be seen to possess upto 20% cobbles and boulders, typically 20-60% gravel, 25-40% sand, 5-15% silt and <15% clay, hence the engineering response of the material is likely to be predominantly in line with granular behaviour.

Figures 5.17 and 5.18 detail the A-line plasticity chart and combined moisture content and plasticity limits chart for the cohesive elements of the MGGW. From Fig 5.18, the moisture content typically varies between 15-25%, typically plotting at or close to the plasticity limit, consistent with over-consolidated material. Plasticity index ranges from I_p = 7-23%, qualifying as a typically low to intermediate plasticity clay / silt deposit.

Figure 5.17: Plasticity A-Line Plot: MGGW

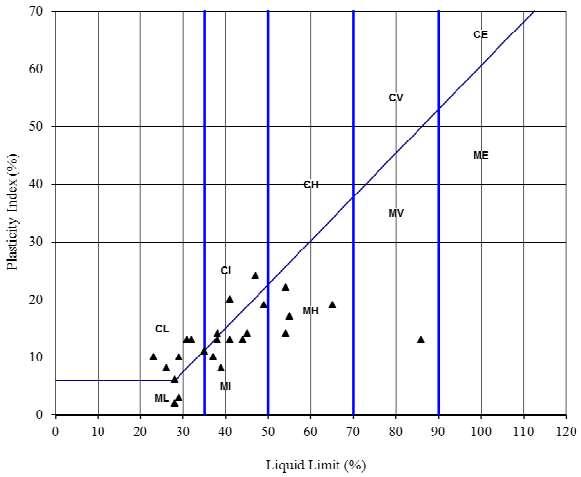


Figure 5.18: Natural Moisture Content & Plasticity Profile: MGGW

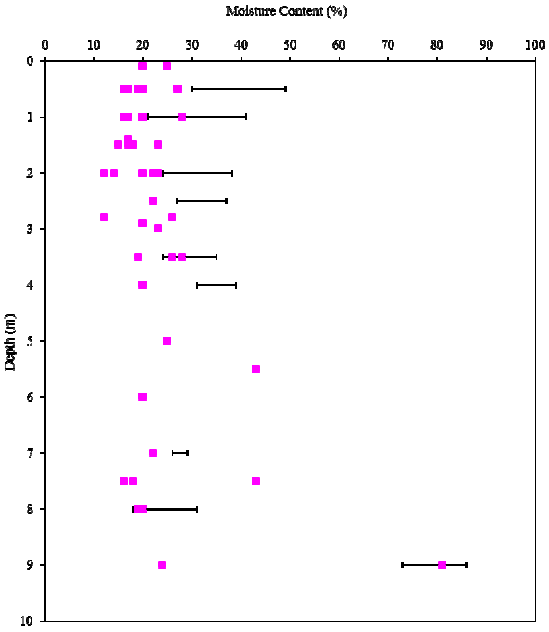


Figure 5.19: Uncorrected SPT N-Value Profile: MGGW

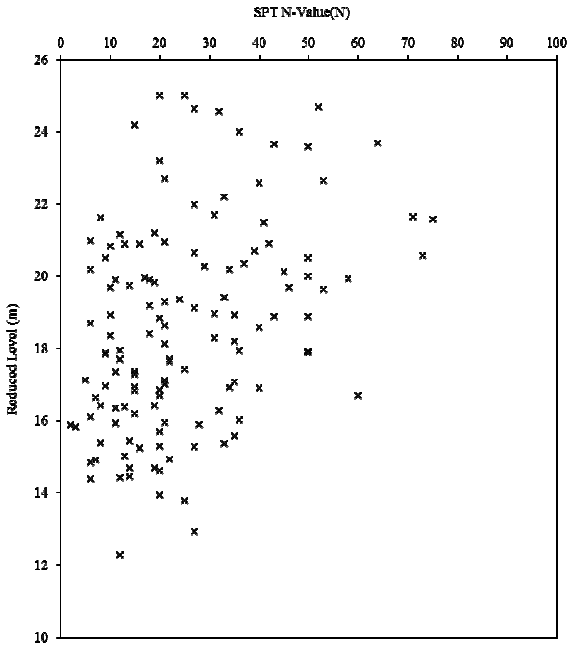


Figure 5.19 presents the uncorrected SPT N-value profile against elevation. A large variability is evident, varying between 5-76 above 19mAOD consistent with loose to very dense material, reducing to 5-30 at greater depths, consistent with loose to medium dense material.

Figures 5.20 and 5.21 present the CPT cone resistance profile for the MGGW. Above 19mAOD, cone resistances vary between typically 1-8MPa occasionally increasing to 30MPa; below 19mAOD cone resistances typically range between 1-5MPa. Friction ratio's typically vary between 0.6-3.0%, locally increasing to 6-10%, the higher values likely to be representative of obstructions. Such typical cone resistance and friction ratios are typical of a loose to dense sandy silt to sand material.

Figure 5.20: Cone Resistance (qt) Profile: MGGW

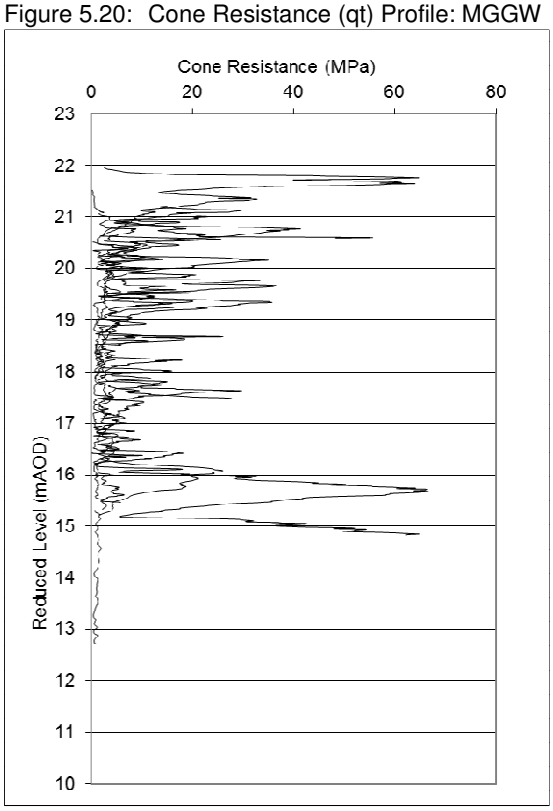


Figure 5.21: Friction Ration Profile: MGGW

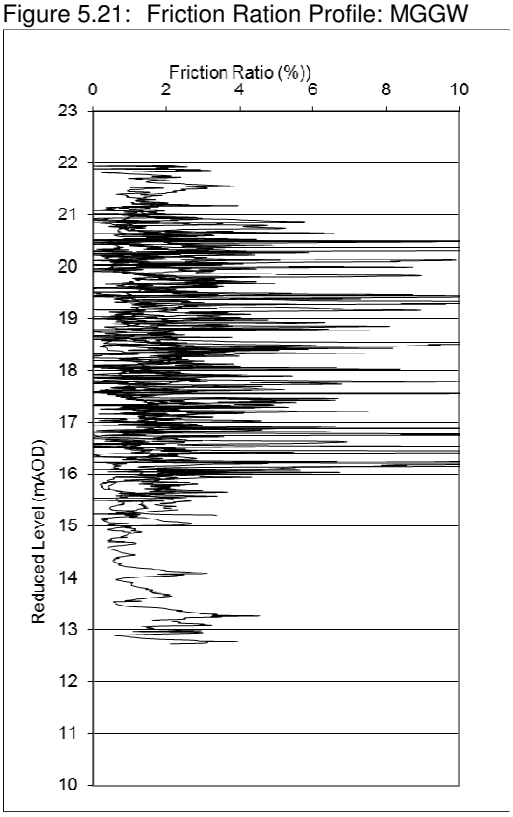


Figure 5.22: Compaction/CBR/mc Relationship: MGGW

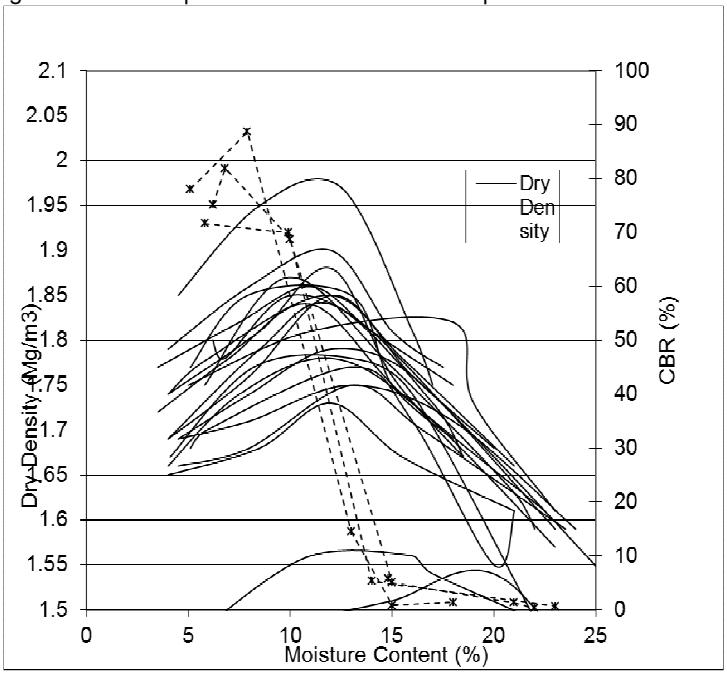


Figure 5.22 presents compaction testing undertaken on the MGGW to determine potential for re-use. The optimum moisture content (omc) can be seen to vary between 10-13%, less than the in-situ natural moisture content. CBR testing corroborates a silty granular material, with high CBR values of >70% achieved at or below omc, rapidly reducing to CBR's of 1-3% wet of 15% moisture content.

Figure 5.23: pH Profile: MGGW

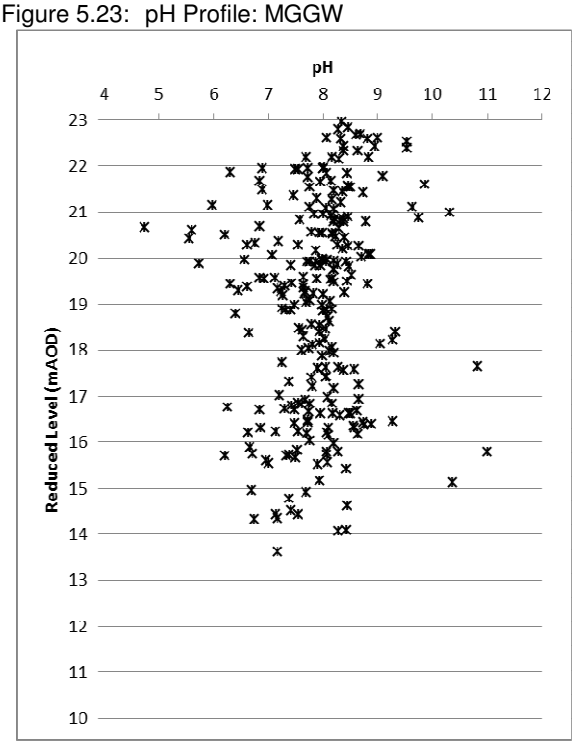
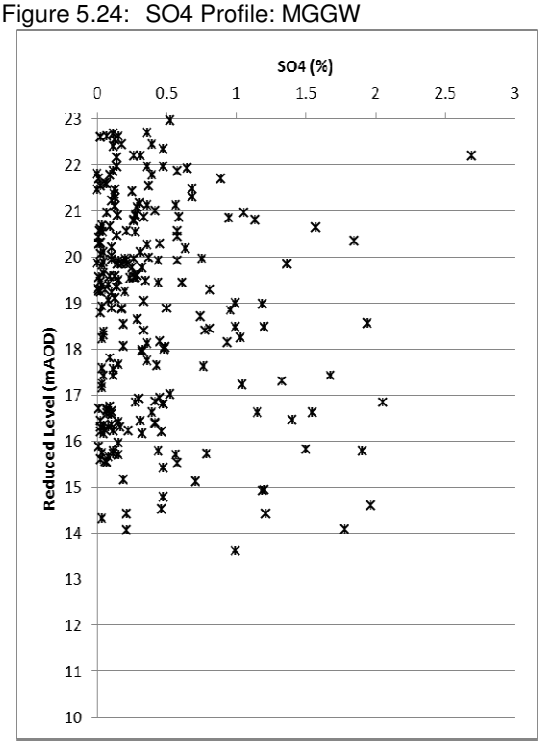


Figure 5.24: SO4 Profile: MGGW



Figures 5.23-5.24 present pH and water soluble sulphate profiles for the MGGW. From reference to BRE Special Digest 1, Table C2 a design sulphate classification of DS-2 would apply. 4No organic moisture content determinations and 2No Loss on Ignition determinations were undertaken on the MGGW, recording values of 2.9-11.6% and 3-26% respectively, hence organic material may be anticipated within the MGGW.

5.1.3 Canal Construction Waste Deposits (MGCCW)

Deposits considered to be canal construction waste deposits were encountered within the raised area SE of the Salt-Eye river channel, as detailed on Drawing MMD-293621-G-DR-00-XX-14020 and are typically 4-6m thick. The canal construction waste deposits were typically described as brown gravely very silty sand and soft brown slightly sandy slightly gravely silt. Gravel within the Canal Construction waste deposits were generally quartz and sandstone.

Figure 5.25: Particle Size Distribution: MGCCW

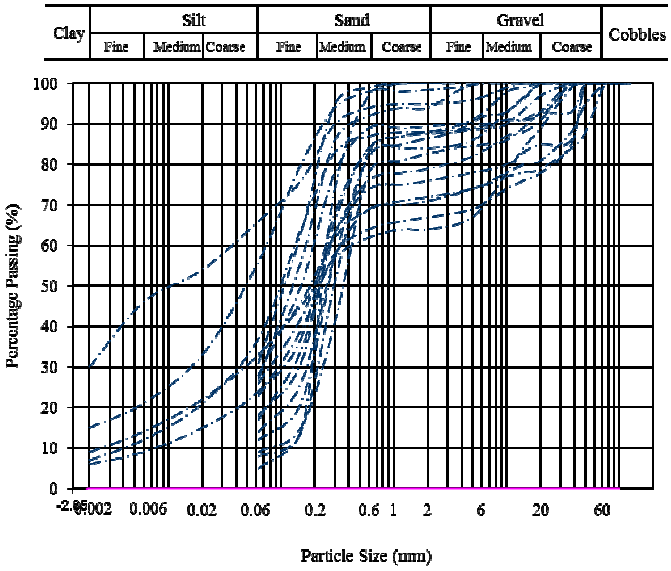


Figure 5.25 presents grading curves for the MGCCW material within the site. The grading curves suggest that the material is dominated by the fine and medium sand fraction, though clearly there is a significant gravel and cobble content. A minority of the curves possess a fines fraction (predominantly silt) in excess of 35%, which supports the engineering description of this unit, which found localised cohesive layers towards the base of the unit.

Figure 5.26: Moisture Content Profile: MGCCW

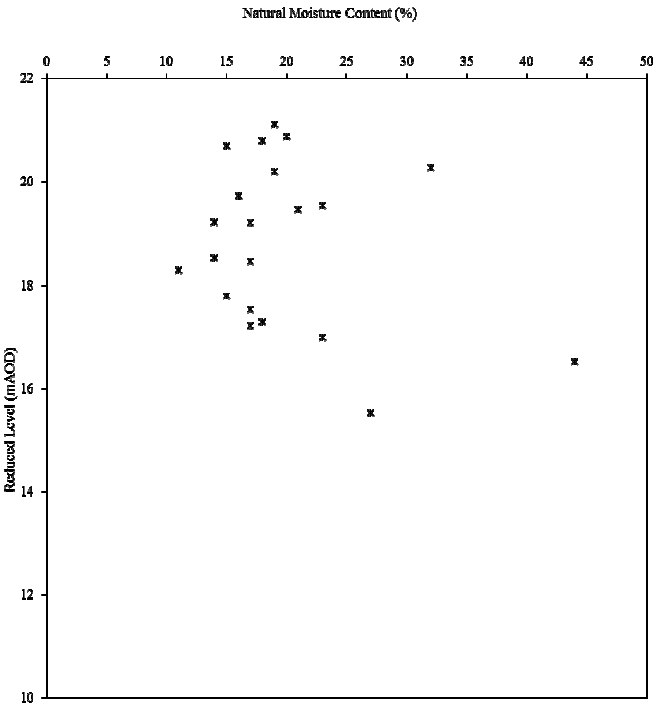


Figure 5.26 presents the moisture content profile for MGCCW material. Typically the in-situ moisture content can be seen to vary between 13-24%.

Figure 5.27: Uncorrected SPT N-Value Profile: MGCCW

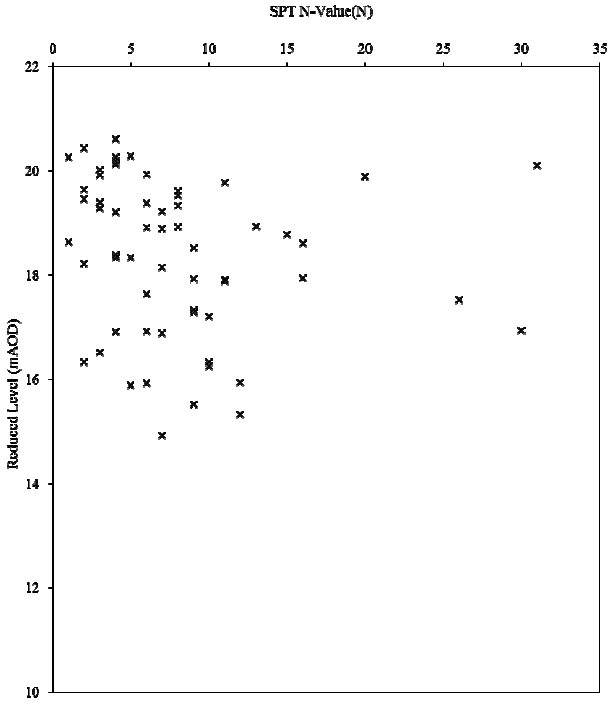


Figure 5.27 presents the uncorrected SPT N-value profile against elevation. Significant variability is evident, varying between 1-31, however typically the material possesses N-values of 1-10, averaging 6, indicative of a very loose to loose material.

Figures 5.28 and 5.29 present the CPT cone resistance and friction ratio profiles for the MGCCW. Typically cone resistance is 1.5-2.5MPa, whilst friction ratio varies from 1-2.5%. Such values are consistent with a very loose to loose deposit (EN 1997-2:2007 Annex D Table D1) and empirical interpretations (Robertson et al 1986, Robertson & Campanella 1983) suggest this is consistent with a silty sand to sandy silt with a low relative density (D_r) of approximately 20-40%. An effective angle of friction of 32 degrees would appear appropriate.

Figure 5.28: Cone Resistance (qt) Profile: MGCCW

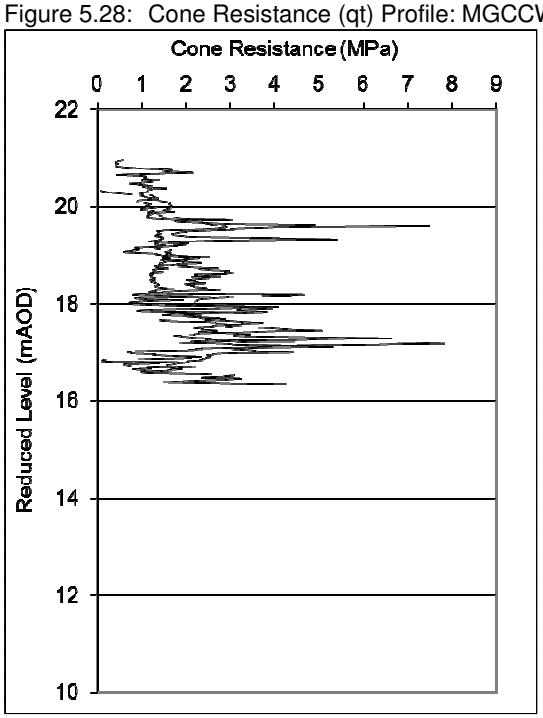


Figure 5.29: Friction Ratio Profile: MGCCW

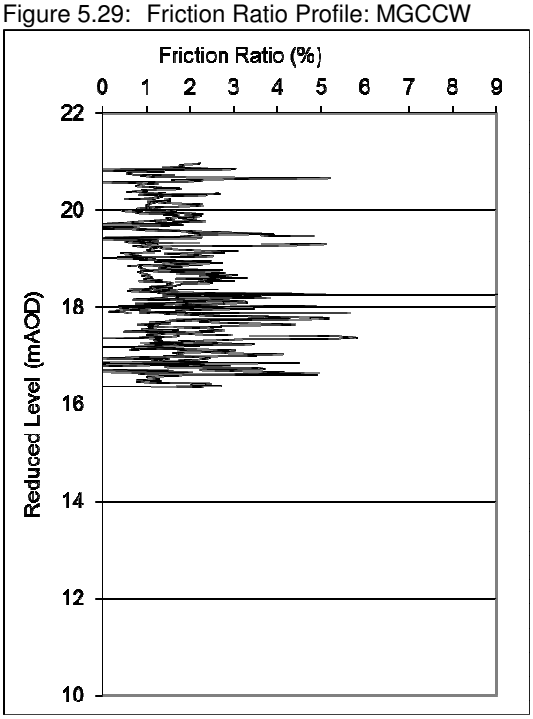


Figure 5.30: Compaction/CBR/mc Relationship: MGCCW

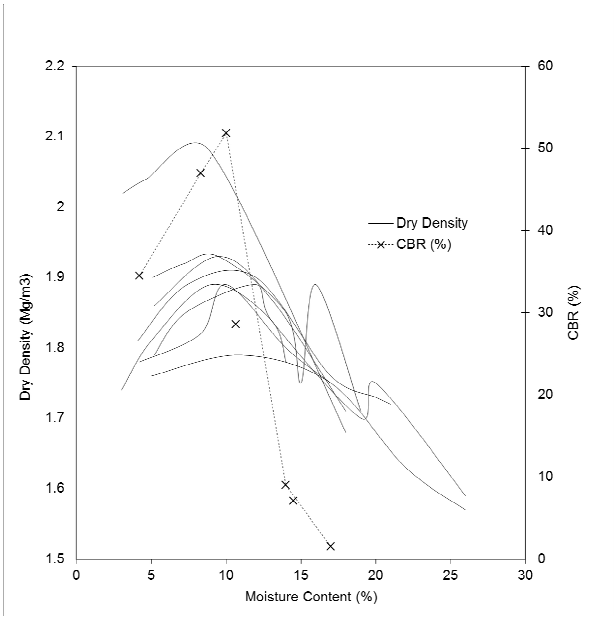


Figure 5.30 presents compaction test data for MGCCW. An optimum moisture content for the material of approximately 10%, significantly below the natural in-situ moisture content is apparent. The material is moisture sensitive with CBR values of 30 plus close to the omc, however these rapidly degrade to <2% wet of 15%.

Figures 5.31 and 5.32 present pH and water soluble sulphate profiles for the MGCCW. From reference to BRE Special Digest 1, Table C2 a design sulphate classification of DS-1 would apply.

Figure 5.31: pH Profile: MGCCW

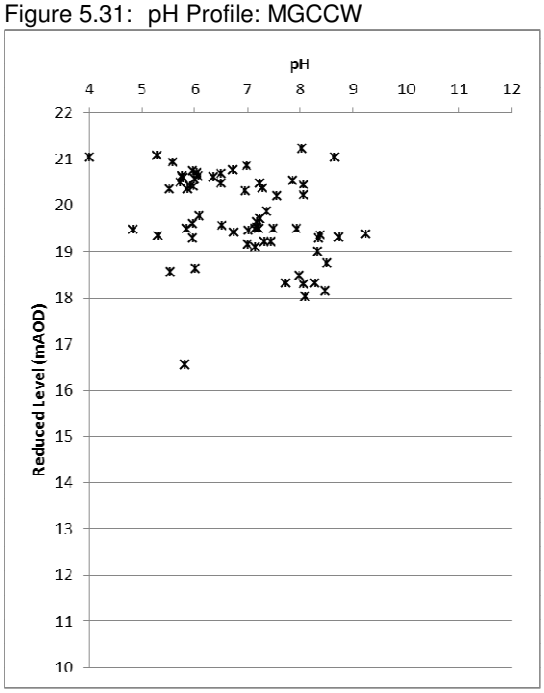
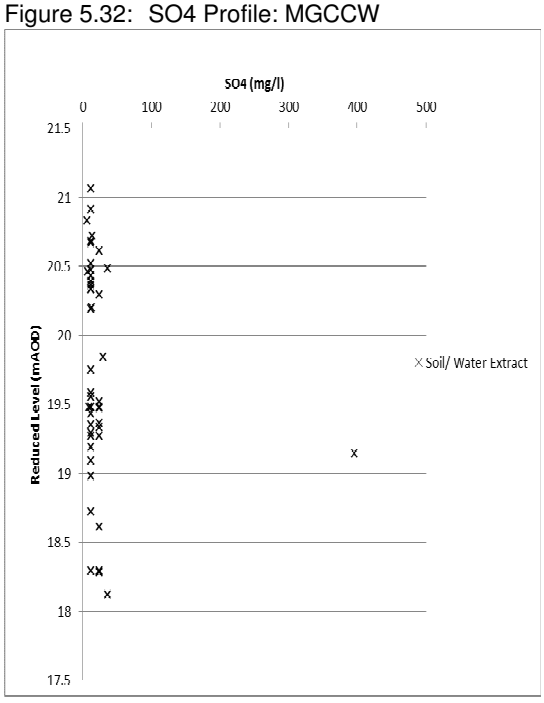


Figure 5.32: SO4 Profile: MGCCW



5.2 Alluvial Deposits

5.2.1 Peat

Peat deposits were predominantly encountered in the Rail junction section of the site and are detailed fully in the Port Salford GIR B1762900-3_CVREP_0001_P01.

5.2.2 Alluvial Clays & Silts (ALLCS)

The alluvial clay and silt deposits are recorded across the site underlying the Made Ground save for the REME area which represents the northern boundary of the alluvial valley. Typically the ALLCS is encountered below the original floodplain level of approximately 15mAOD and extends for a thickness of 3-6m. Laterally the distribution will vary due to the former meandering River Irwell channels, and variation in lithology may be anticipated with localised sand partings. Groundwater monitoring data suggests that the regional groundwater level is likely to be encountered within this stratum.

Figure 5.33: Particle Size Distribution: ALLCS

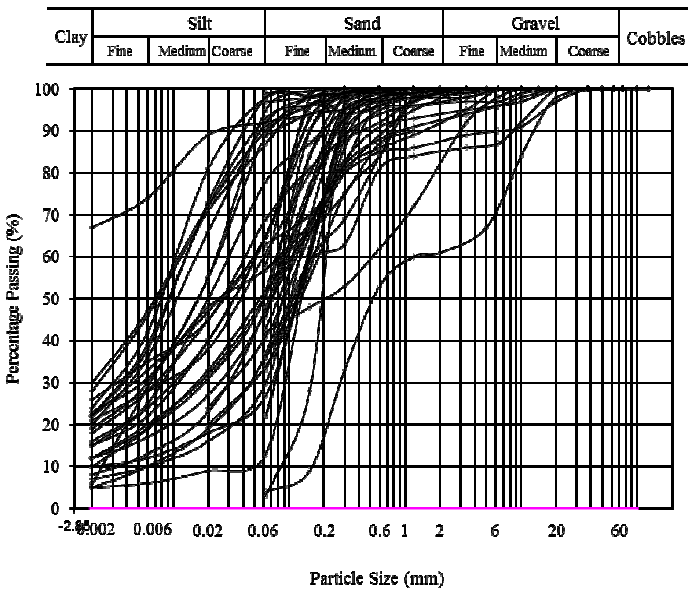


Figure 5.33 presents grading curves for the ALLCS material within the site. The material is multi-graded, with the majority of material recorded as possessing >35% fines, with clay fraction varying between 5-30%. Typically the grading curves define a sandy (fine) silt to a silty fine sand.

Figures 5.34 and 5.35 detail the A-line plasticity chart and combined moisture content and plasticity limits chart for the ALLCS. From Fig 5.18, the moisture content typically varies between 20-40%, typically plotting intermediate between the plastic and liquid limit, consistent with a normally consolidated material. Plasticity index ranges from I_p = 3-27%, qualifying as a typically low to high plasticity silt deposit, with occasional extremely high plasticity silt horizons, representative of increased organic content.

Figure 5.34: Plasticity A-Line Plot: ALLCS

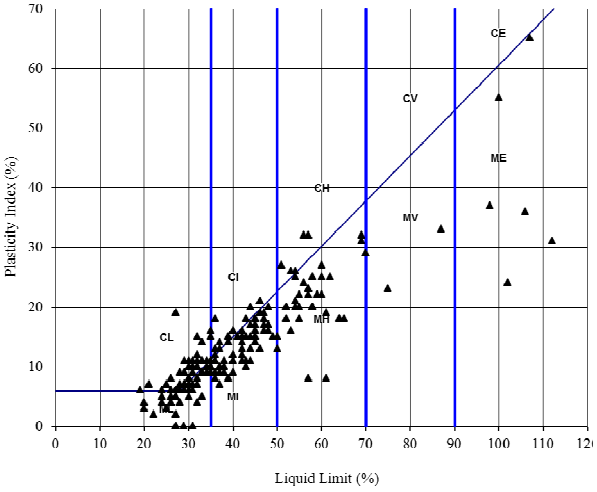


Figure 5.35: Natural Moisture Content & Plasticity Profile: ALLCS

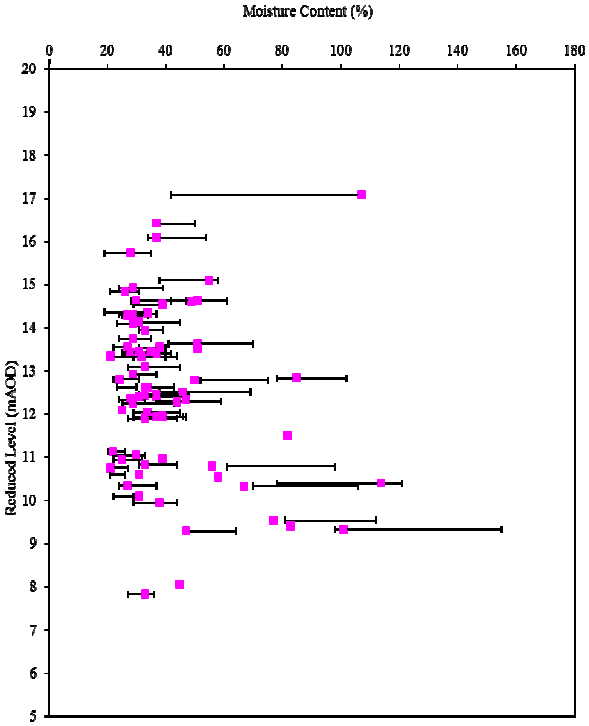


Figure 5.36: Uncorrected SPT N-Value Profile: ALLCS

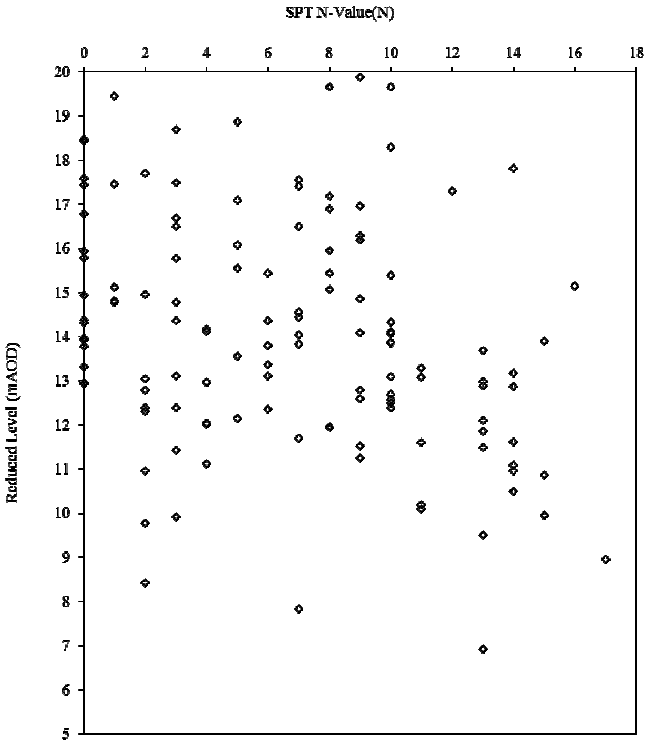


Figure 5.2 presents bulk density data determined for all strata as reported for laboratory triaxial and oedometer testing. The ALLCS may be seen to possess a variable density range, though the lower densities are considered representative of MGDCS; a characteristic lowerbound of 1.8Mg/m^3 would appear appropriate.

Figure 5.36 presents the uncorrected SPT N-value profile for ALLCS. A large data scatter is evident between 0-14, representative of very soft to firm deposits. No trend is evident. The data scatter is most probably due to variations in granular fraction and softening due to groundwater.

Figure 5.37: Cone Resistance (qt) Profile: ALLCS

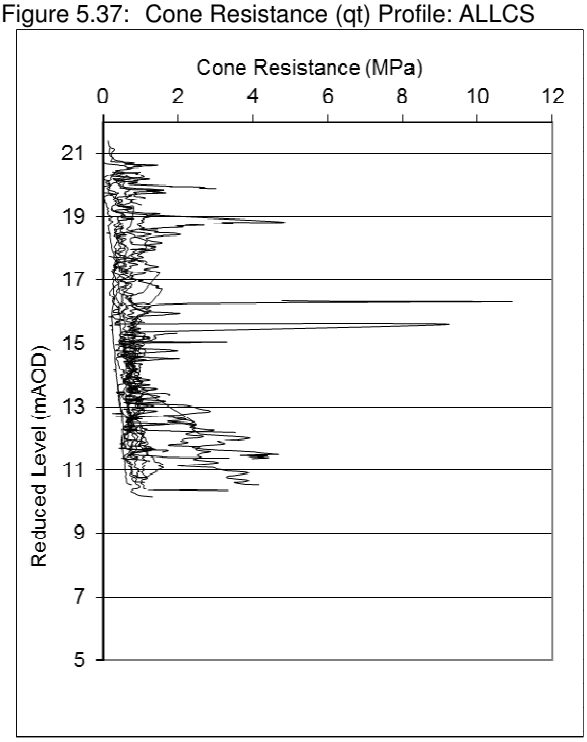
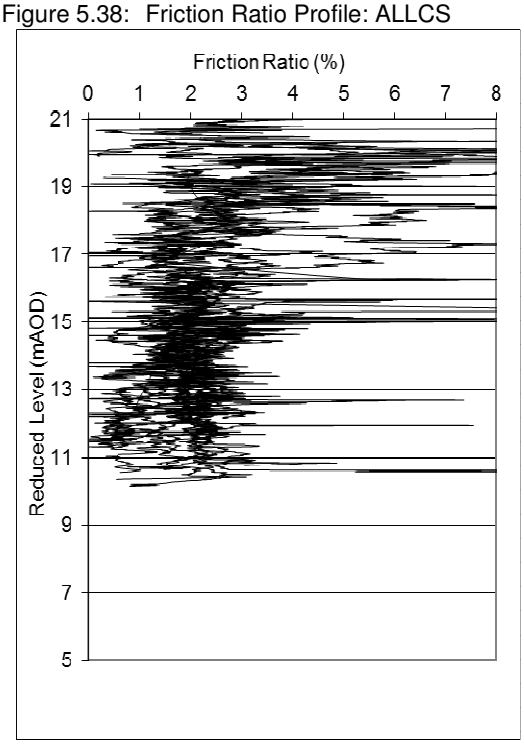


Figure 5.38: Friction Ratio Profile: ALLCS



Figures 5.37 and 5.38 present the CPT cone resistance profile for the ALLCS. Above 18mAOD, raised friction ratio's suggest an increased organic and clay content; this is likely to represent erroneously assigned MGDCS or re-worked natural deposits given the elevation. Below that cone resistance varies from 0.5-1.2MPa and friction ratio from 1.5-2.5%, typical of clayey silt to silty clay material in accordance with published empirical CPT interpretations.

Figure 5.39 presents an undrained shear strength profile for the ALLCS derived directly from triaxial tests and in-situ hand vane tests and from empirical derivations from plasticity data, standard penetration testing (SPT's), and cone penetration tests (CPT's).

The following empirical relationships have been adopted:

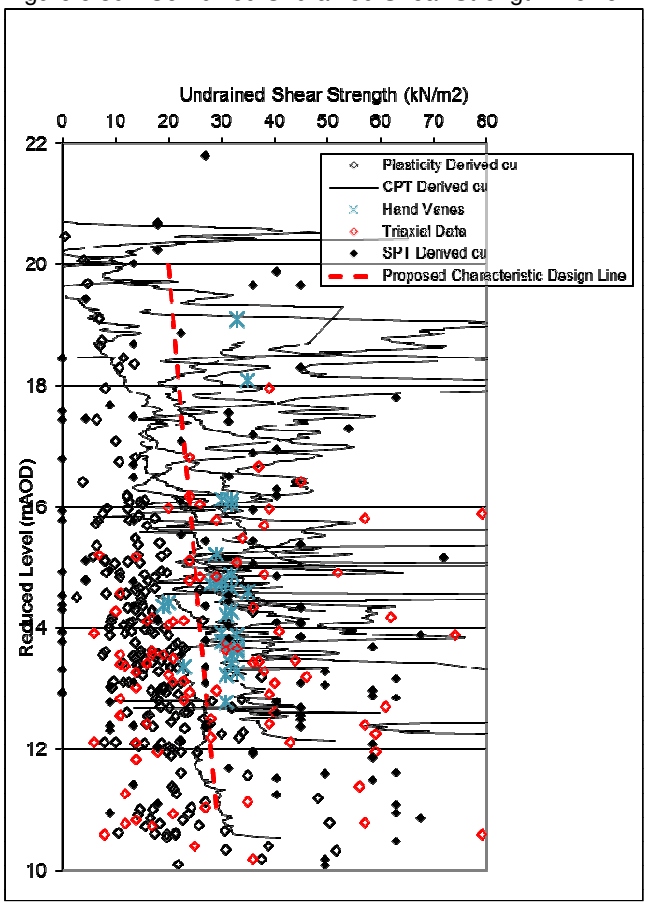
$c_u = (q_t - \sigma) / N_{kt}$ (Aas et al 1986)[12]

where: c_u = undrained shear strength (kN/m^2)
q_t = corrected cone resistance (kN/m^2)
σ = overburden pressure (kN/m^2)
N_k = cone factor (15 adopted)

$c_u = 4.2\ N_{60}$ (CIRIA C143 (1995))
4.2 factor adopted appropriate for Ip of 20-40%

$c_u = (0.11 + 0.0037 I_p) * \sigma'_v$)
(Skempton & Henkel (1953))

Figure 5.39: Combined Undrained Shear Strength Profile: ALLCS



The direct determinations and insitu determinations provide a significant scatter of results for triaxial and SPT data possibly due to test pocket disturbance or sample disturbance associated with granular content. By contrast the hand vane, CPT and plasticity data show relatively tight shear strength profiles with hand vanes and CPT's recording higher values of 25-40kN/m^2 as opposed to the lower derivations of 10-20kN/m^2 from plasticity data. Considering such data, a characteristic undrained shear strength profile of 20kN/m^2 at 18mAOD increasing to 30kN/m^2 at 10mAOD is considered appropriate..

Figure 5.40: Effective Stress Data: ALLCS

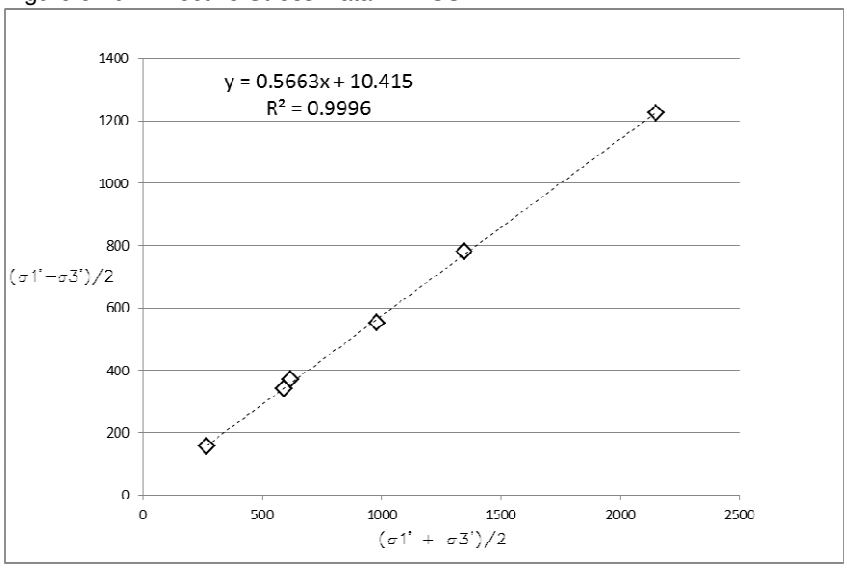


Figure 5.40 details effective stress data from 2No consolidated undrained triaxials undertaken on the ALLCS. Test samples were described as soft to firm dark sandy clay and were multistage tests and hence subject to potential error in relation to overstressing within stages. Individual tests recorded c' values varying between 10-20kN/m^2; with a φ' values of 33°. Amalgamating the data onto a t' vs s' plot (Figure 5.40) this provides c' = 12kN/m^2 and φ' =34°. Normalising this to a c' = 0kN/m^2, provides a φ' =35°.

Figure 5.41: 1-D Consolidation Summary Plot

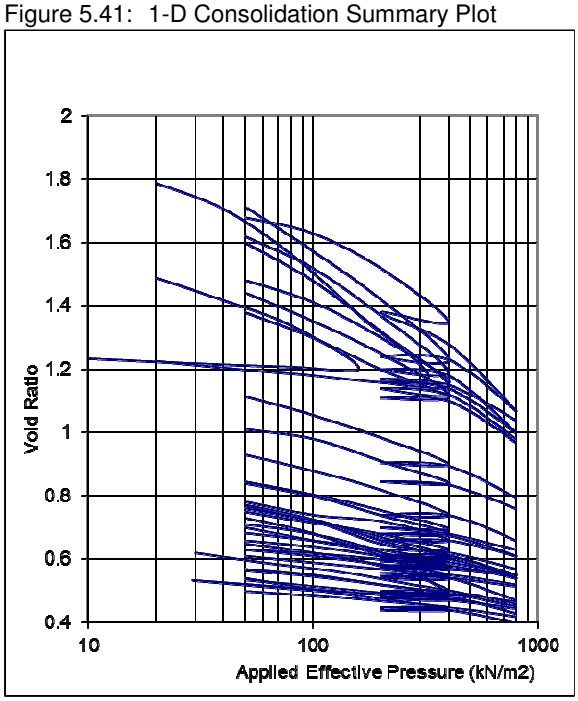


Figure 5.41-5.43.detail consolidation testing undertaken on the ALLCS. 28No 1-D oedometer tests were undertaken. The tests possess a similar compression gradient (Cc) value of typically of 0.01-0.04 for initial void ratio's <1, and 0.05-0.08 for initial void ratio's >1. Utilising a published relationships between Cc and $C\alpha$ the secondary compression index for sandy clays of $C\alpha$ = 0.03Cc (Mesri 1990)[13], a $C\alpha$ of circa <0.002 is derived.

Figures 5.42 and 5.43 detail the coefficient of volume compressibility (m_v) and coefficient of consolidation (c_v) normalised to 100kN/m^2 greater than the insitu stress state. The former plot also contains m_v derived from CPT data utilising a α factor of 3 for an intermediate plasticity clayey silt (EN 1997-2:2007 Annex D Table D2). The coefficient of volume compressibility is indicative of a medium to locally high compressibility soil. c_v varies significantly, however typically it falls below 15m^2/yr. Conservatively for settlement assessment a c_v of 3m^2/yr appears appropriate.

Figure 5.42: Coefficient of Compressibility Profile: ALLCS

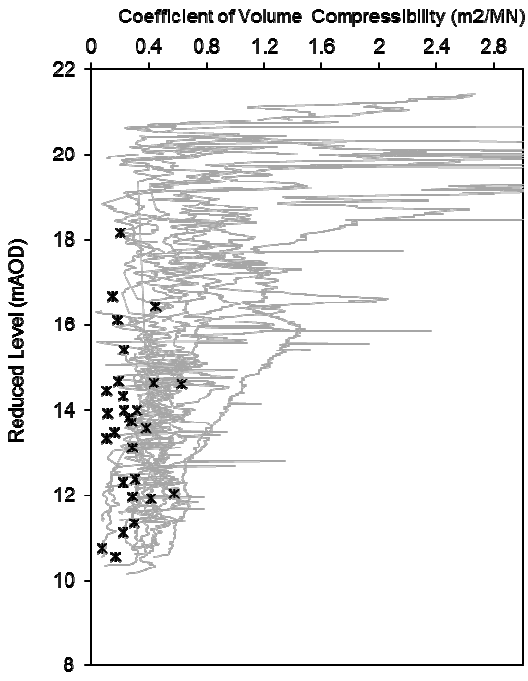


Figure 5.43: Coefficient of Consolidation Profile: ALLCS

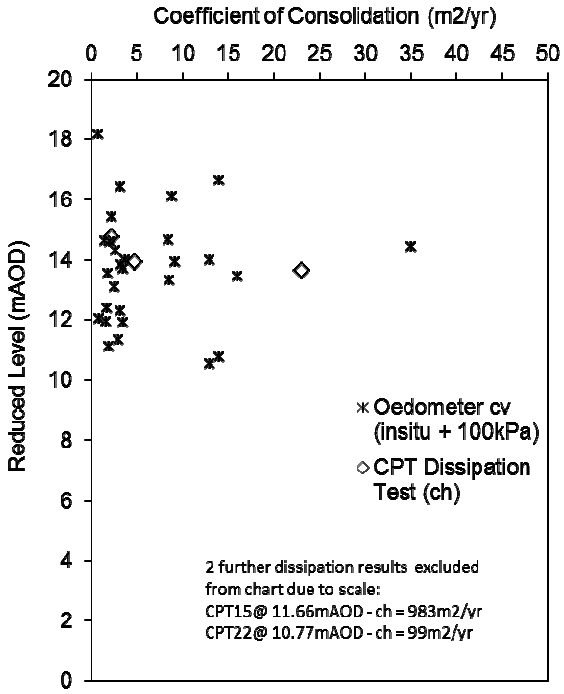


Figure 5.44: Stiffness Derivation: ALLCS

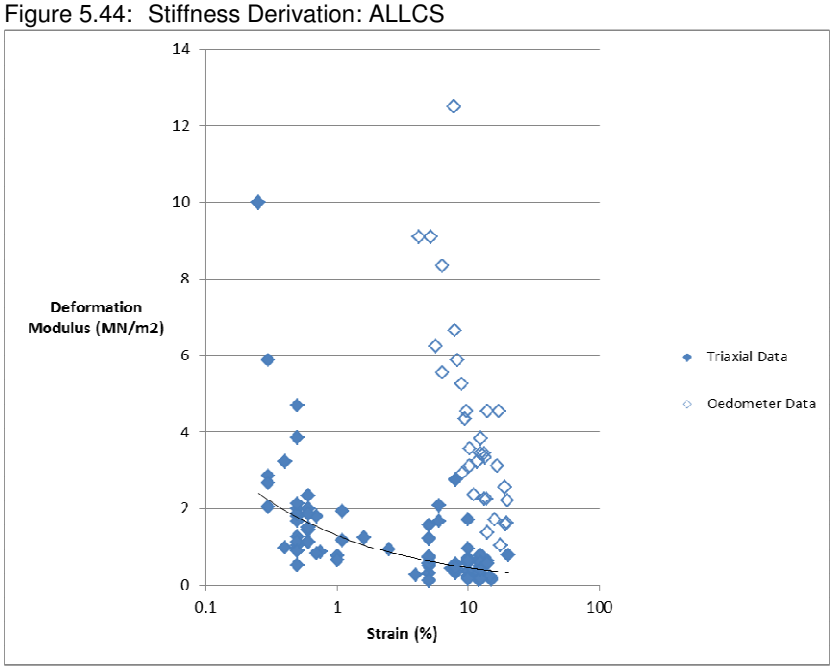


Figure 5.44 presents the strain dependency of deformation modulus as determined from initial moduli of undrained unconsolidated triaxial test data from the historical 1997 investigation. The derived stiffnesses are very low for the relatively large strains as may be anticipated from the classification and strength data.

Figures 5.45 & 5.46 present pH and water soluble sulphate profiles for the ALLCS. From reference to BRE Special Digest 1, Table C2 a design sulphate classification of DS-2 would apply. 6No organic matter content determinations were undertaken recording values of 1-6%; 2No Loss on Ignition Tests were undertaken within organic lenses recording values of 12 and 27%.

Figure 5.45: pH Profile: ALLCS

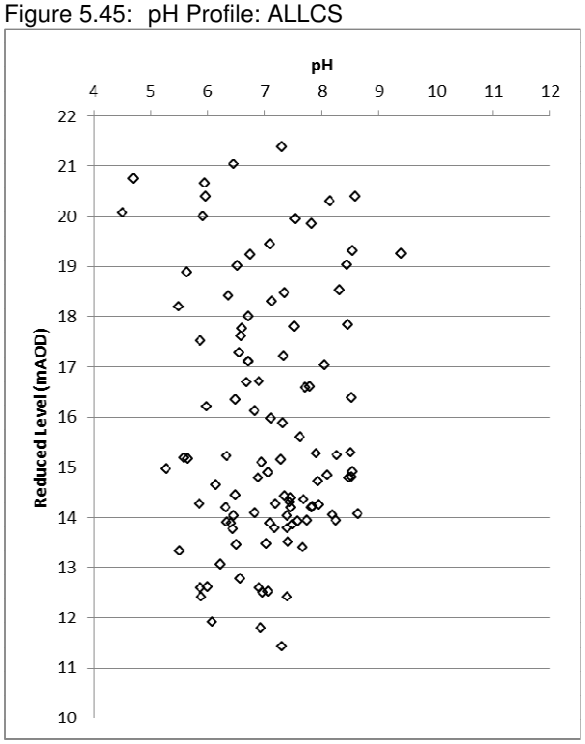
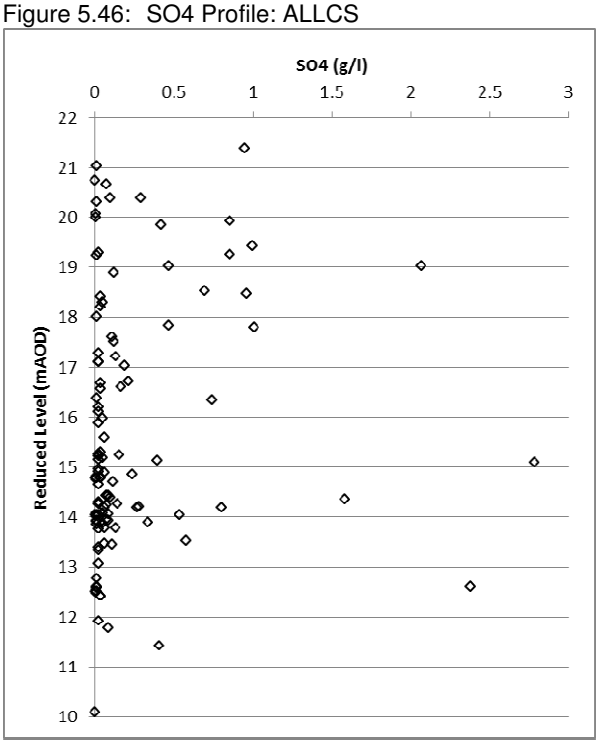


Figure 5.46: SO4 Profile: ALLCS



5.2.3 Alluvial Sands & Gravels (ALLSG)

Alluvial Sand & Gravel Deposits are located across the site generally underlying the cohesive Alluvial Deposits. Variable distribution may be anticipated associated with buried channels. Differentiation between the alluvial and underlying glacial sands and gravels is difficult from interrogation of historical data alone. The key differentiators have been assumed to be density and material grading, with coarsely graded dense deposits taken as glacial. Groundwater will be mobile through these granular strata, hence colouration of both deposits will to some extent represent leached overlying materials. In-situ historical SPT N-value determinations have been taken at face value assuming that water balance was correctly undertaken.

Figure 5.47: Particle Size Distribution ALLSG

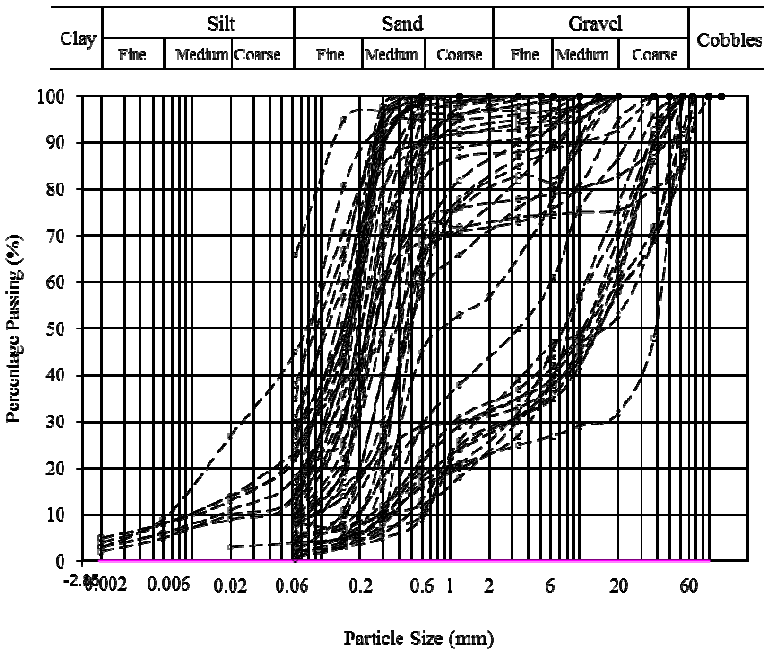
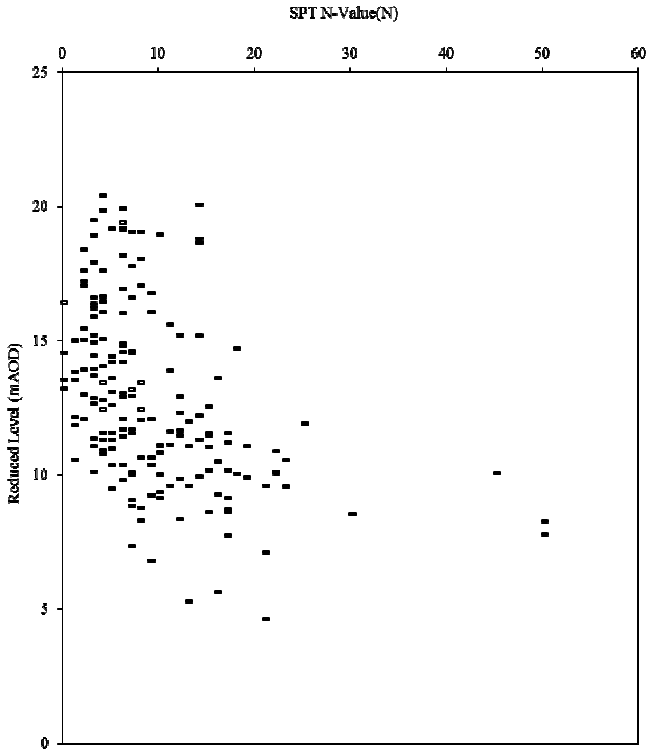


Figure 5.47 presents grading curves for the ALLSG material within the site. Two distinct curves are present; a finer medium-graded, slightly silty, fine and medium SAND, and a multi-graded sandy fine to coarse GRAVEL. The coarser curve is considered likely to represent erroneously classified Glacial Sand & Gravel Deposits.

Figures 5.48 presents the uncorrected SPT N-value profile for the ALLSG. Above 12mAOD, N-values vary between 1-10 consistent with a very loose to loose material; below this N-values increase to typically 3-20 consistent with a loose to medium dense material. Such an elevation is approximately consistent with the present-day base level of the Salt-Eye.

Figure 5.48: Uncorrected SPT N-Value Profile: ALLSG



Figures 5.49 & 5.50 present the CPT cone resistance and friction ratio profiles for the ALLSG. Typically cone resistance is 1-4MPa, whilst friction ratio varies from 0.5-1.3%. Such values are consistent with a very loose to loose deposit (EN 1997-2:2007 Annex D Table D1) and empirical interpretations (Robertson et al 1986, Robertson & Campanella 1983) suggest this is consistent with a silty sand to sandy silt with a low relative density (D_r) of approximately 20-40%. An effective angle of friction of 32 degrees would appear appropriate.

Figure 5.49: Cone Resistance (qt) Profile: ALLSG

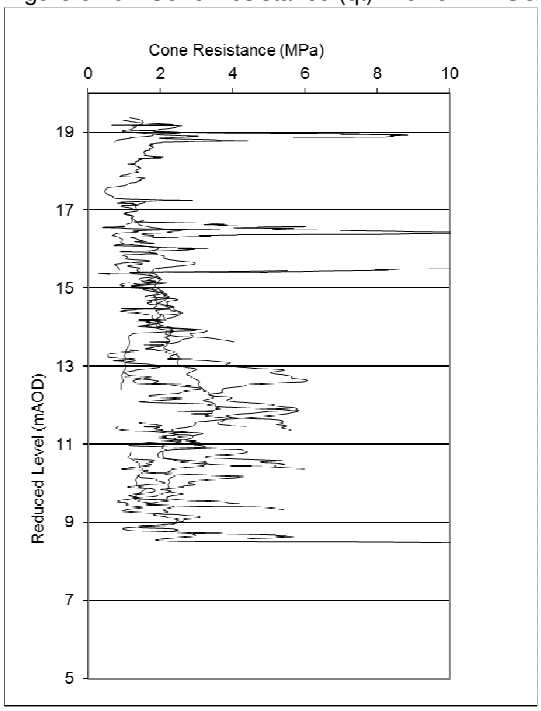


Figure 5.50: Friction Ratio Profile: ALLSG

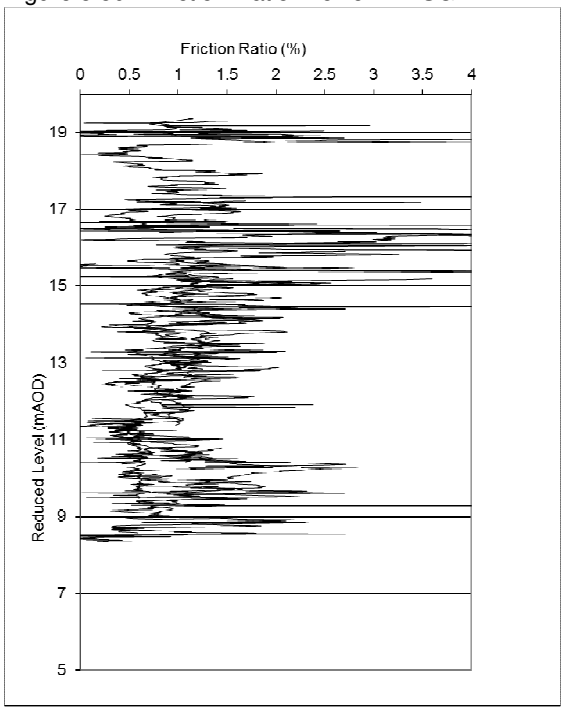


Figure 5.51: Compaction/CBR/mc Relationship: ALLSG

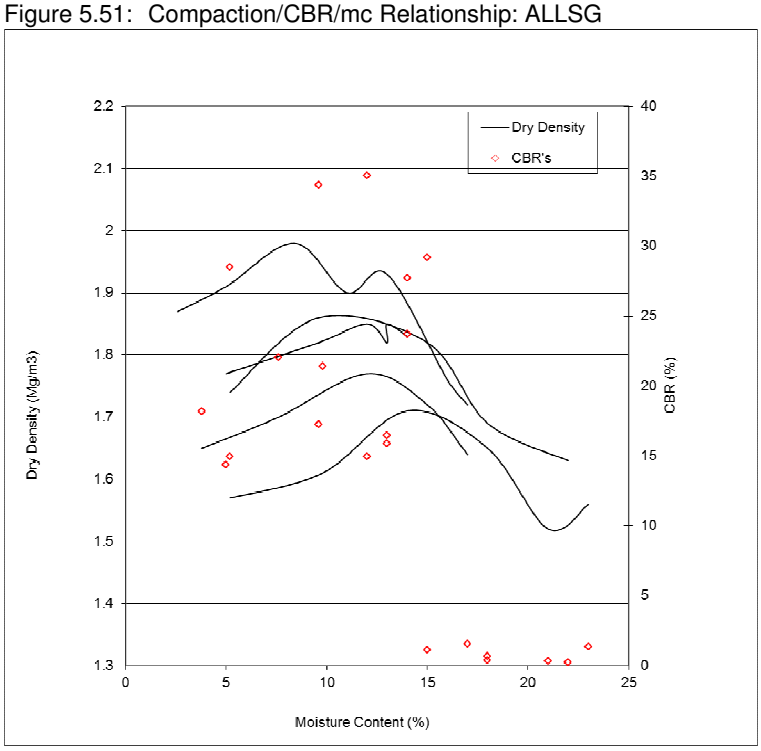


Figure 5.51 presents compaction test data for ALLSG. Optimum moisture content for the material varies but typically is <13%. The natural in-situ moisture content of this unit typically falls between 15-25%, hence insitu the material is wet of optimum. CBR testing show the material to be moisture sensitive with CBR values of 15 plus close to the omc, rapidly degrade to <2% wet of 15%.

Figures 5.52 & 5.53 present pH and water soluble sulphate profiles for the ALLSG. From reference to BRE Special Digest 1, Table C2 a design sulphate classification of DS-2 would apply.

Figure 5.52: pH Profile: ALLSG

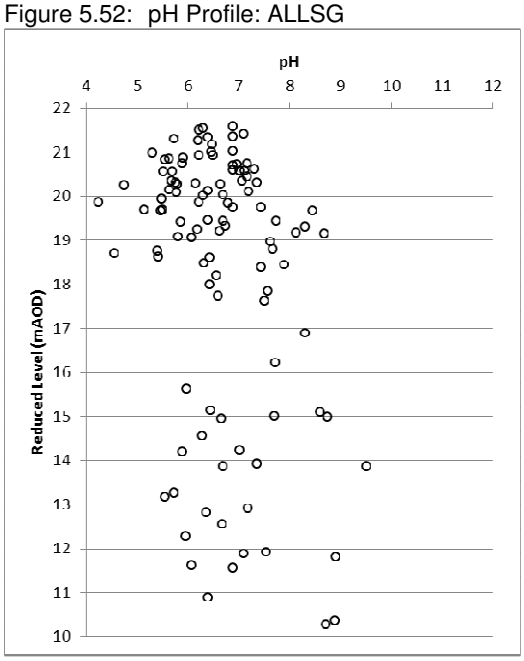
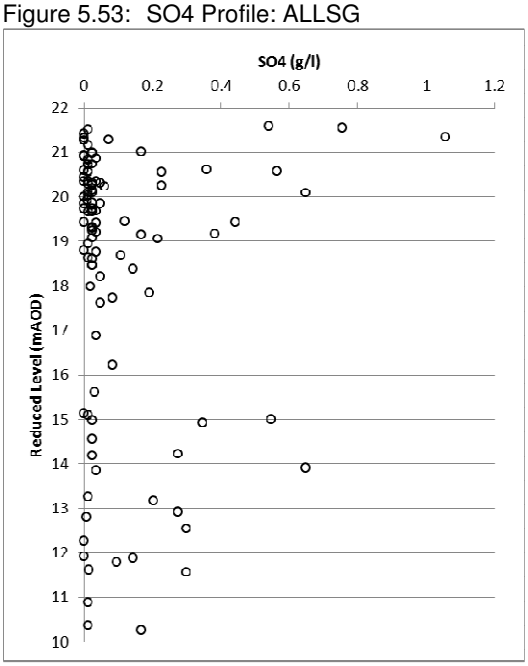


Figure 5.53: SO4 Profile: ALLSG



5.3 Glacial Deposits

5.3.1 Glacial Sands & Gravels (GLSG)

Glacial sands were encountered as the dominant glacial fraction underlying the Port Salford site. The unit appears to have been eroded by the alluvial valley and hence outcrops at much higher elevations at the buried valley edge typically demarcated by the A57 and the southern REME boundary. Over much of the remaining site the unit possesses thicknesses of 2-4m and is locally underlain by Glacial Till deposits.

Figure 5.54: Particle Size Distribution: GLSG

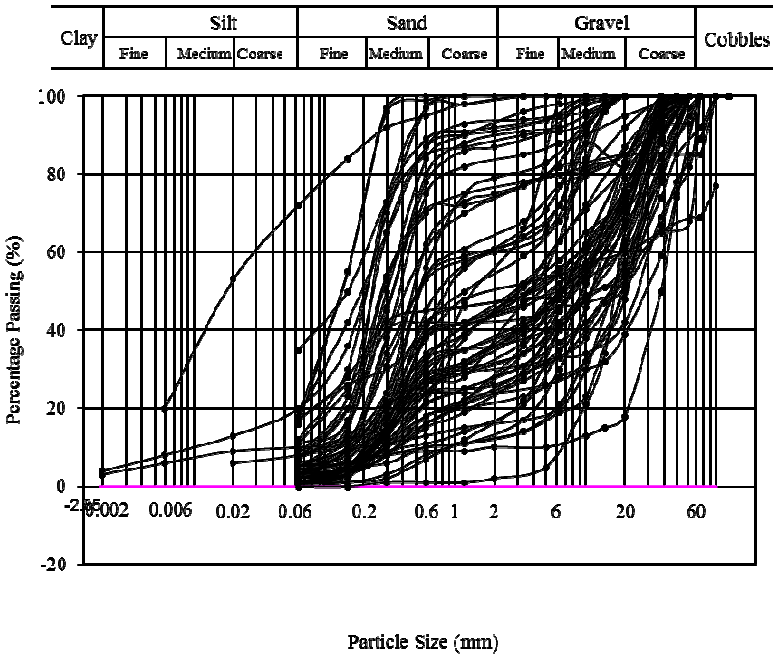
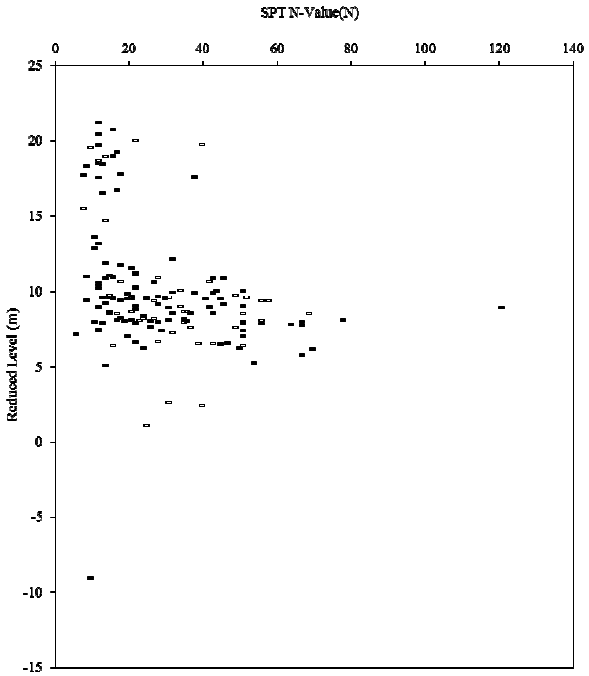


Figure 5.54 presents grading curves for the GLSG material within the site. As discussed in the earlier section, differentiation between the alluvial and glacial units is difficult and the grading curves are in all likelihood a function of this. Again two grading envelopes are present; the coarser multi-graded sandy, fine to coarse GRAVEL dominates, however 30% of samples do describe a gravelly fine to coarse SAND.

Figure 5.55 presents the uncorrected SPT N-value profile for the GLSG. Above 12mAOD, N-values vary between 10-20 consistent with a medium dense material; below this N-values vary significantly from 10-60 indicating a medium dense to very dense deposit. High N-values are likely to be a function of the high gravel content.

Figure 5.55: Uncorrected SPT N-Value Profile: GLSG



Figures 5.56 & 5.57 present the CPT cone resistance and friction ratio profiles for the GLSG. Typically cone resistance varies from 5-25MPa, whilst friction ratio varies from 0.4-1.5%. Such values are consistent with a medium dense to very dense deposit (EN 1997-2:2007 Annex D Table D1) and empirical interpretations (Robertson et al 1986, Robertson & Campanella 1983) suggest this is consistent with a silty sand to sandy silt with a high relative density (D_r) of approximately 60-80%. A conservative effective angle of friction of 36 degrees would appear appropriate, though locally this may well increase above 40 degrees.

Figure 5.56: Cone Resistance (qt) Profile: GLSG

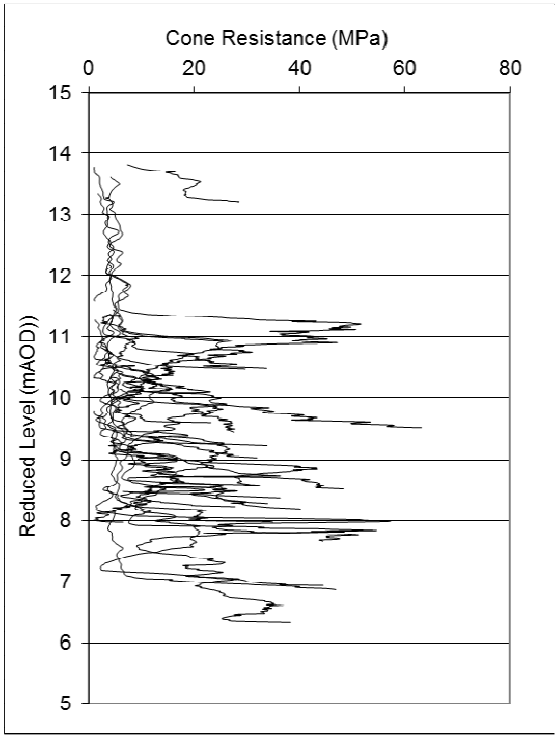


Figure 5.57: Friction Ratio (%)

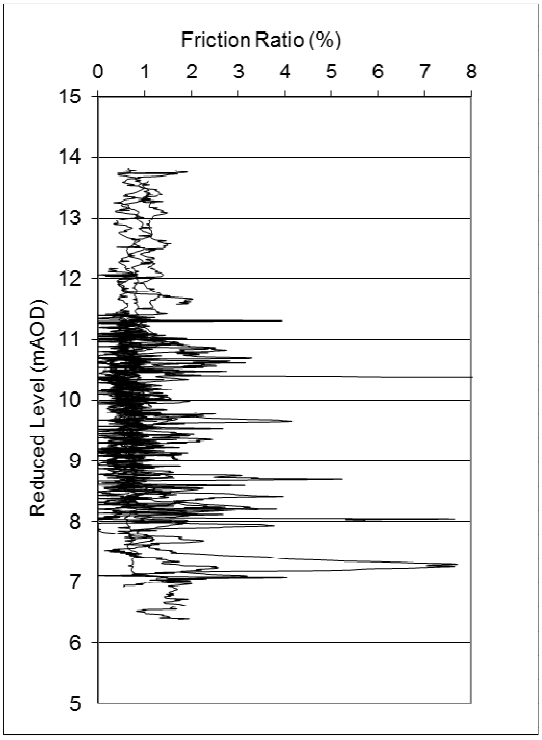


Figure 5.58: pH Profile: GLSG

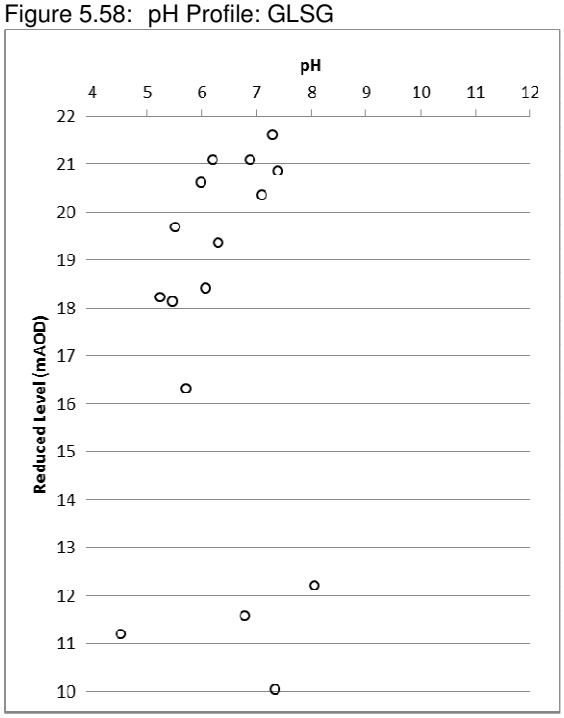
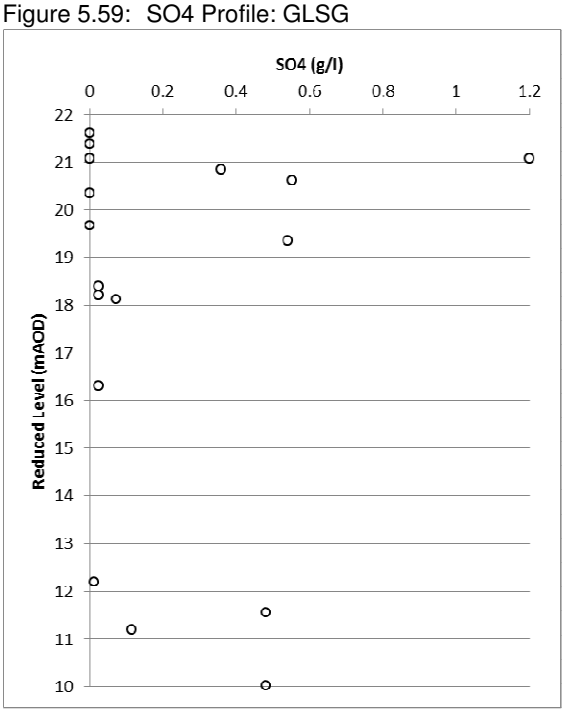


Figure 5.59: SO4 Profile: GLSG



Figures 5.58 & 5.59 present pH and water soluble sulphate profiles for the GLLSG. From reference to BRE Special Digest 1, Table C2 a design sulphate classification of DS-2 would again apply.

5.3.2 Glacial Till (GLCL)

Glacial Till deposits are encountered locally underlying the Glacial Sands & Gravels within the REME area and the central warehousing area. Typically the Till is described as a brown firm to stiff and stiff, gravelly clay.

Figure 5.60: Particle Size Distribution: GLCL

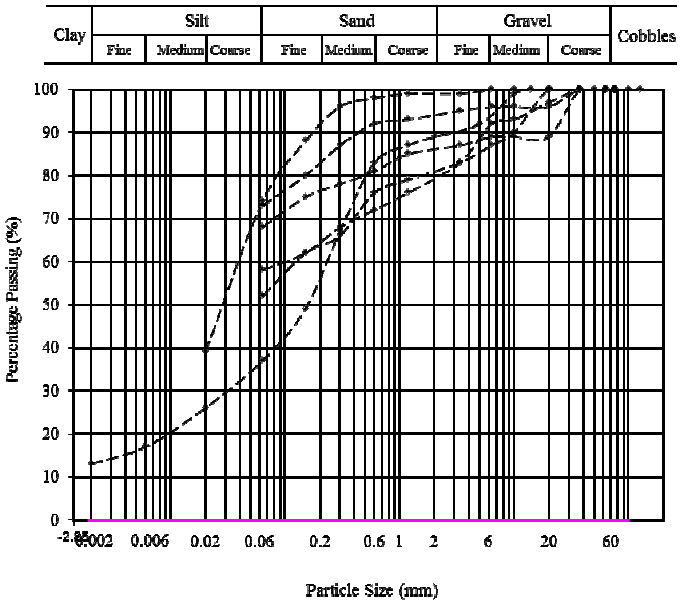


Figure 5.60 presents grading curves for the GLCL material within the site. The material is multi-graded, and qualifies as a silty, sandy, slightly gravelly CLAY.

Figures 5.61 and 5.62 detail the A-line plasticity chart and combined moisture content and plasticity limits chart for the GLCL. From Fig 5.62, the moisture content typically varies between 10-30%, typically plotting at or beneath the plastic limit, consistent with an over-consolidated material. Plasticity index ranges from I_p = 5-30%, qualifying as a typically low to high plasticity clay deposit, with the higher plastyicity deposits occurring at elevations above 15mAOD.

Figure 5.2 presents bulk density data determined for all strata as reported for laboratory triaxial and oedometer testing. The GLCL may be seen to possess a density range from 1.9-2.3Mg/m^3; a characteristic lowerbound of 2.05Mg/m^{3}would appear appropriate.

Figure 5.61: Plasticity A-Line Plot: GLCL

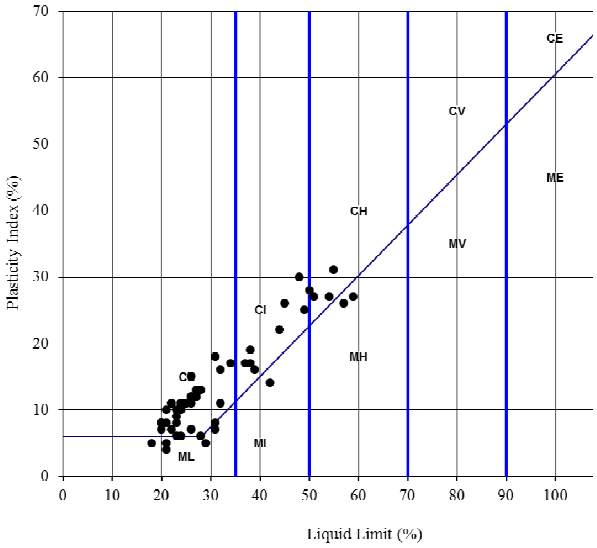


Figure 5.62: Natural Moisture Content & Plasticity Profile: GLCL

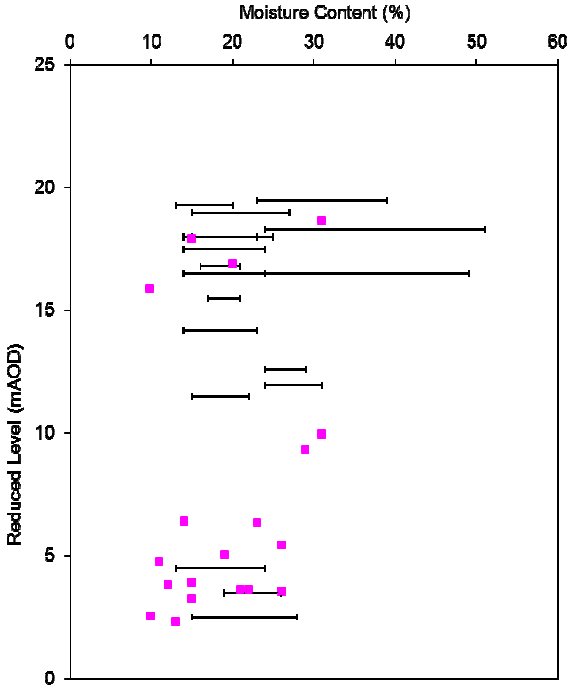


Figure 5.63: Uncorrected SPT N-Value Profile: GLCL

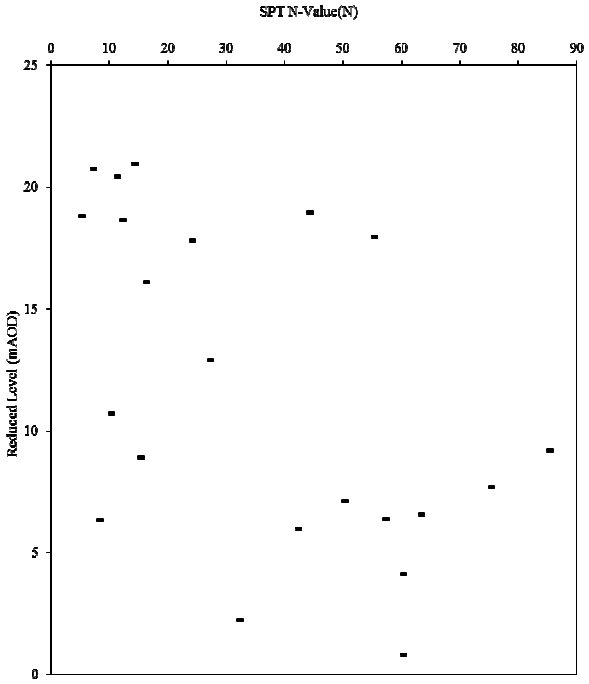


Figure 5.63 presents the uncorrected SPT N-value profile for GLCL. A large data scatter is evident between 5-85, representative of low to extremely high strength (soft to very stiff) deposits. No trend is evident. The data scatter is most probably due to proximity to water bearing granular deposits, with the lower values representing clay interbedded with sand deposits.

Figures 5.64 and 5.65 present the CPT cone resistance profile for the GLCL. Above 14mAOD, cone resistances vary between 1-3% with raised friction ratios of 3-4%; below this cone resistances are of the order of 0.8-1MPa with a friction ratio of 2% indicative of silty clay to clay material in accordance with published empirical CPT interpretations.

Figure 5.64: Cone Resistance Profile (qt): GLCL

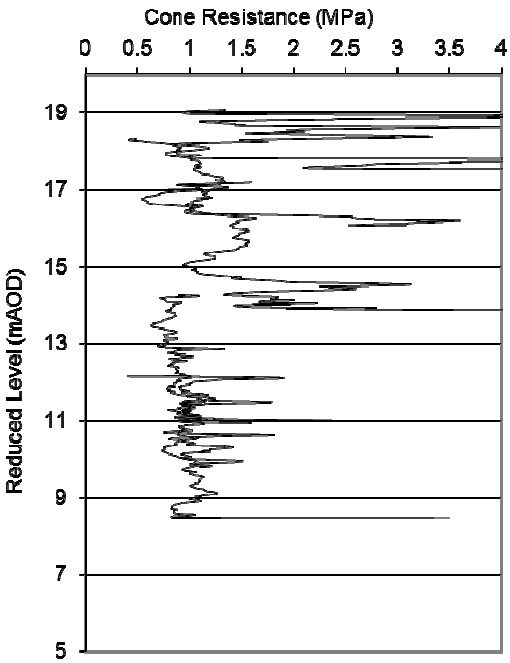


Figure 5.65: Friction Ratio (GLCL)

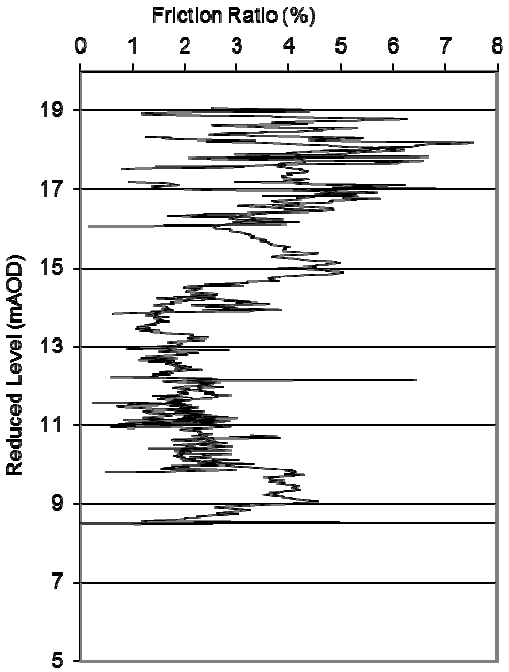


Figure 5.66: Combined Undrained Shear Strength Profile: GLCL

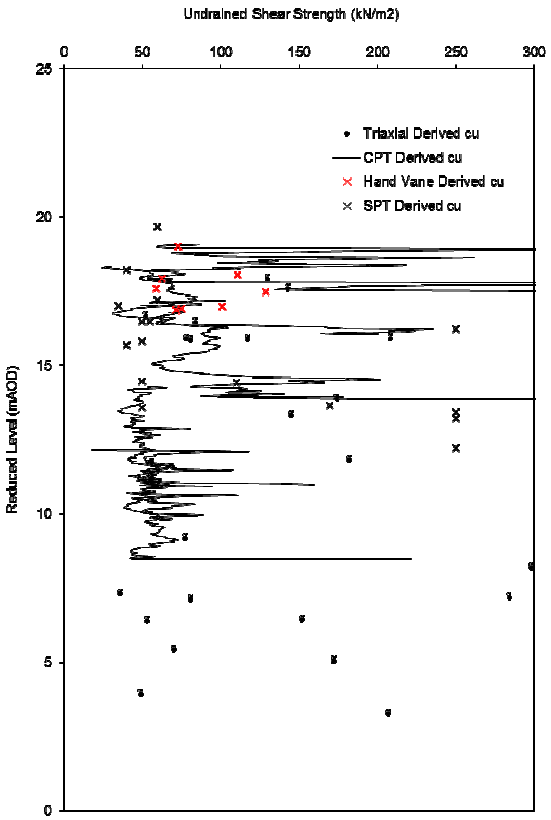


Figure 5.66 presents an undrained shear strength profile for the GLCL derived directly from triaxial tests and in-situ hand vane tests and from empirical derivations from standard penetration testing (SPT's), and cone penetration tests (CPT's).

The following empirical relationships have been adopted:

$c_u = (q_t - \sigma) / N_{kt}$ (Aas et al 1986)[12]

where: c_u = undrained shear strength (kN/m^2)
q_t = corrected cone resistance (kN/m^2)
σ = overburden pressure (kN/m^2)
N_k = cone factor (15 adopted)

$c_u = 5\ N_{60}$ (CIRIA C143 (1995))

f1 = 5 adopted, appropriate for Ip of 10-20%

The data may be seen to possess a significant scatter, hence a lower-bound characteristic strength of 60kN/m^2 is deemed appropriate, particularly when considering the engineering log consistencies of firm to stiff/stiff.

Figure 5.67-5.69.detail consolidation testing undertaken on the GLCL. 7No 1-D oedometer tests were undertaken. The high void ratio tests were all from higher elevation occurrences of the Glacial Till possess compression gradient (Cc) of typically 0.004. The lower elevation tests possess Cc values of the order of 0.0002.

Figures 5.68 and 5.69 detail the coefficient of volume compressibility (m_v) and coefficient of consolidation (c_v) normalised to 100kN/m^2 greater than the insitu stress state. The former plot also contains m_v derived from CPT data utilising a α factor of 3.5 for a low plasticity clay (EN 1997-2:2007 Annex D Table D2). The coefficient of volume compressibility is indicative of a low to medium compressibility soil. c_v varies significantly, however typically it falls below 15m^2/yr. Conservatively for settlement assessment a c_v of 5m^2/yr appears appropriate.

Figure 5.67: 1-D Consolidation Summary Plot: GLCL

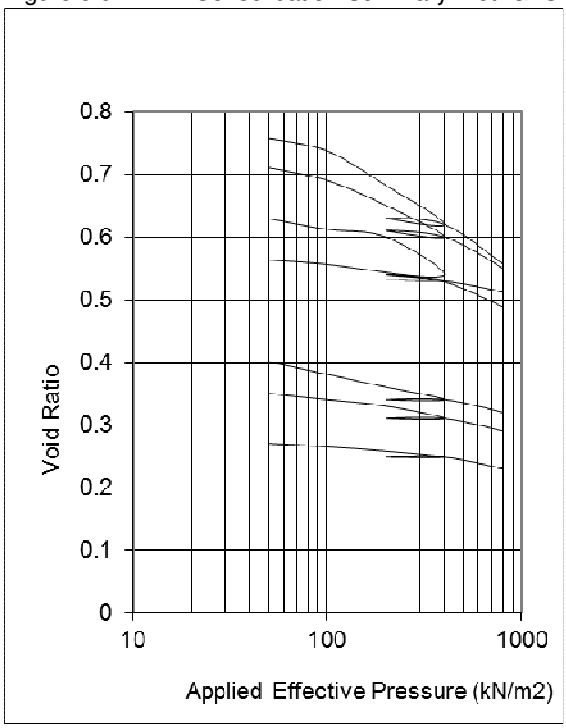


Figure 5.68: Coefficient of Volume Compressibility Profile: GLCL

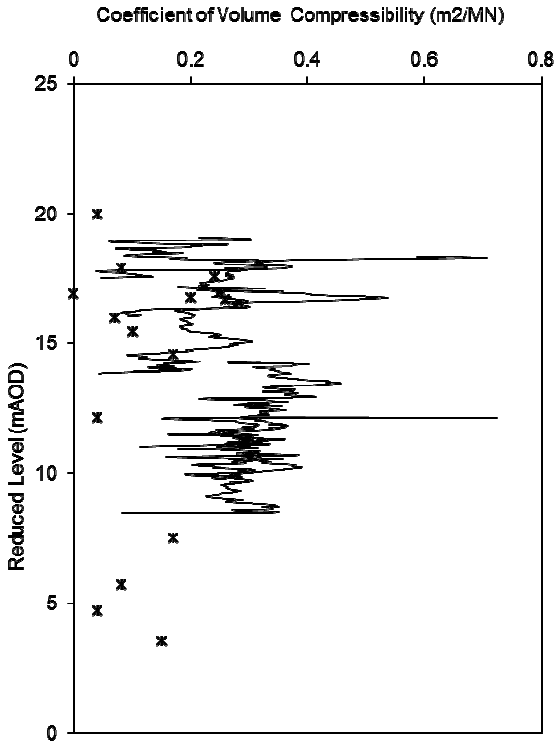


Figure 5.69: Coefficient of Consolidation Profile: GLCL

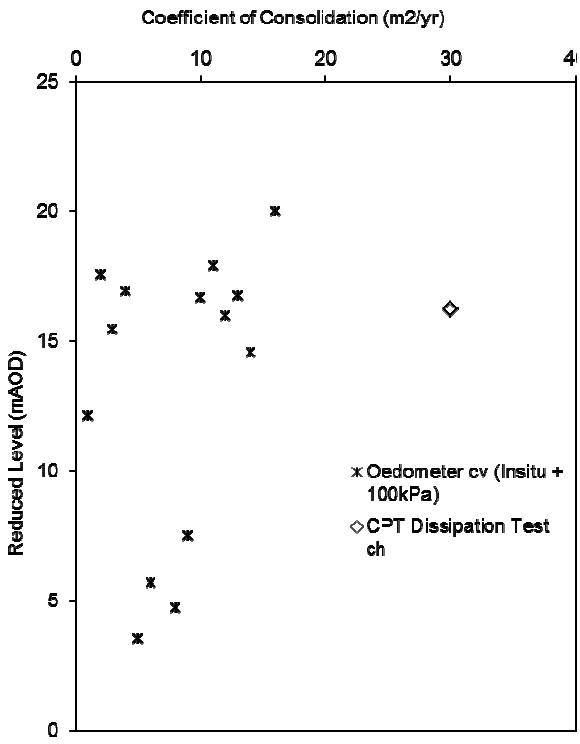


Figure 5.70: pH Profile: GLCL

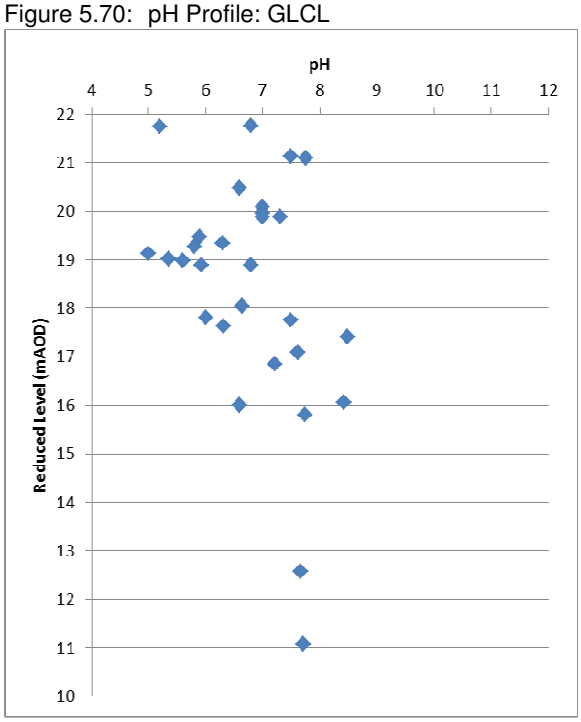
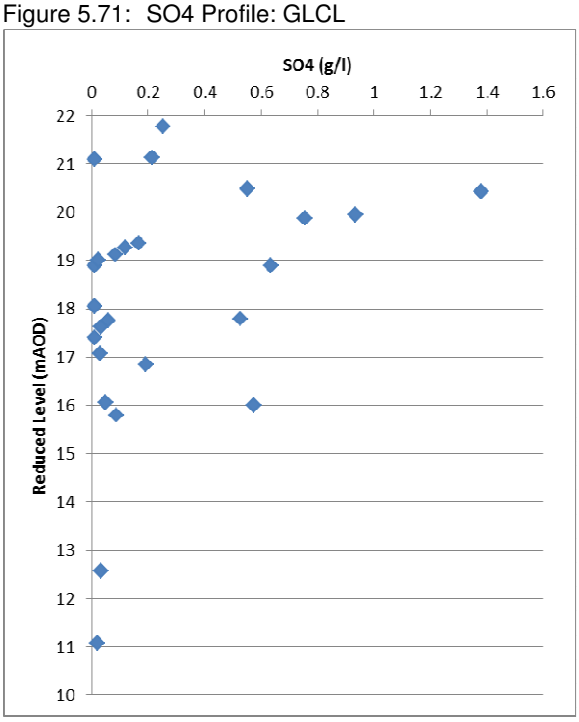


Figure 5.71: SO4 Profile: GLCL



Figures 5.70 & 5.71 present pH and water soluble sulphate profiles for the GLCL. From reference to BRE Special Digest 1, Table C2 a design sulphate classification of DS-2 would again apply.

5.4 Sherwood Sandstone

Sherwood Sandstone forms the bedrock underlying the entire Port Salford site. Rockhead level varies significantly but generally falls from a high elevation of 20mAOD at the REME/Makro NW boundary to a low elevation of 2-5mAOD from Barton Dock Road eastwards, with the rockhead falling relatively steeply across a N-S trending escarpment beneath and parallel to the REME/Port Salford eastern boundary.

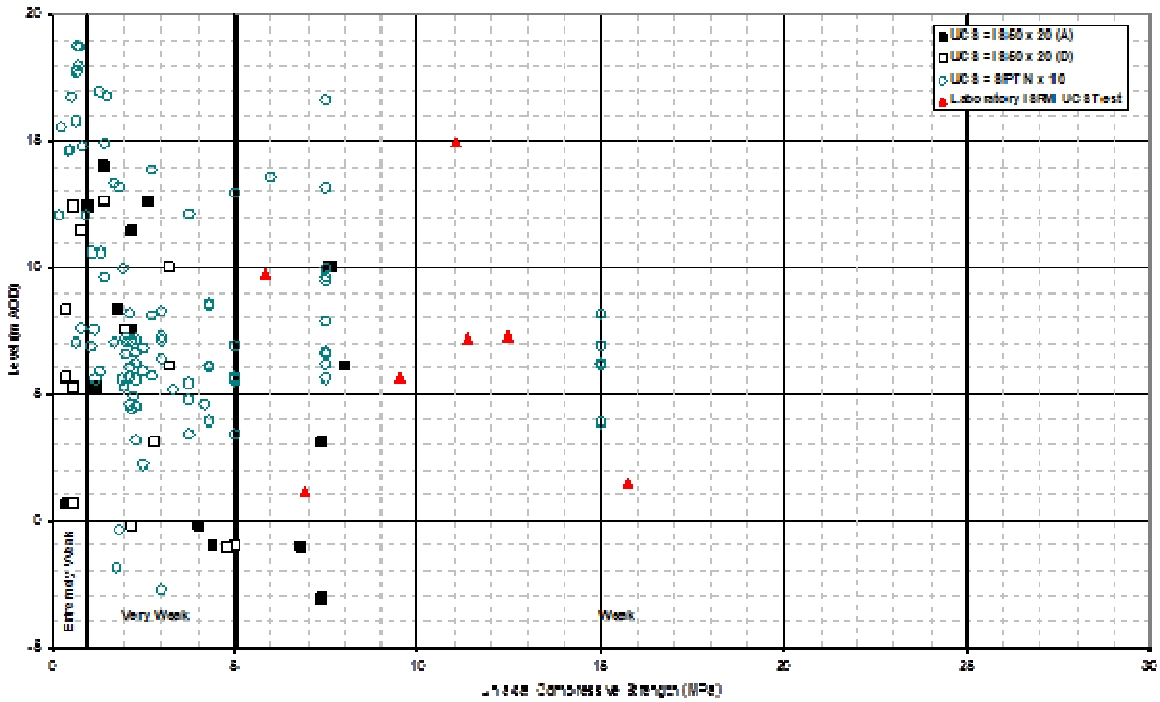
5.4.1 Uniaxial Compressive Strength of Rock

Uniaxial compressive strength tests were undertaken upon suitable size cores recovered during the January 2012 ground investigation. Point Load strength tests were also undertaken on recovered blocks of core that were not suitable for UCS testing. Figure 5.72 indicates the spread of UCS versus elevation with the point load results shown for comparison, adopting a correlation (k) factor of 20. SPT data has also been converted to UCS adopting the following relationship.

σc (KPa) = SPT N x 10 (Cole & Stroud, 1976)

From the plot, the Sherwood Sandstone may be seen to typically possess a strength varying between 1-10MN/m^2 consistent with a very weak to moderately weak rock.

Figure 5.72: Sherwood Sandstone UCS Profile



6. Phase 2 Contaminated Land Assessment

A Phase 2 Contaminated Land Assessment has been undertaken separately by Mott MacDonald for the entirety of the Port Salford Scheme to satisfy Planning Conditions 23 and 24 assigned to the site. For details of the contamination assessment cross reference should be made to Mott MacDonald Report: MMD-293621-G-REP-002: Port Salford Contaminated Land Risk Assessment & Remediation Strategy (2013). The following summary of the contaminated land risk assessment is extracted from the Executive Summary of the aforementioned report:

“Human health risks identified from the testing are primarily associated with site soils; notable contaminants include widespread lead, an isolated exceedance of benzo(a)pyrene and chrysotile asbestos fibres have also been encountered in Made Ground. *Note: Mott MacDonald is unable to provide advice on the management and remediation of asbestos; an accredited asbestos specialist should be appointed to provide remedial advice relating to any asbestos containing materials identified across the site.* The main risks posed to controlled waters from site soils are PAH compounds within the Made Ground, ammoniacal nitrogen and isolated TPH exceedances. Elevated methane and carbon dioxide ground gas concentrations were found, particularly under the warehousing area. Elevated sulphate concentrations in site soils may create a risk to buried concrete structures. Elevated levels of phytotoxic contaminants: copper, boron and zinc were encountered across the proposed landscaping and Salteye Brook diversion areas.”

Report MMD-293621-G-REP-002 should be referred to for the detailed assessment and for details of the proposed remediation strategy for submission to the regulatory authorities.

The geotechnical design solutions should be capable of accommodating the known contamination and any additional contamination encountered during the construction works.

7. Geotechnical Design Discussion

7.1 Outline of Engineering Proposals

The following discussion provides a brief summary of the geotechnical considerations primarily for the Phase 1A development and summarises geotechnical considerations for design. The discussion is based on the Port Salford phasing development dated November 2013; the reader will require to reconcile this discussion against onward scheme development. It is not intended to provide detailed design guidance for the many varied design cases which will arise on a scheme of this size. **Responsibility for individual design elements and Geotechnical Design Reports (GDR's) to cover such elements lie with the detailed designers.**

The proposed engineering works are outlined in Drawing MMD-293621-G-DR-00-XX-13001 reproduced here in Appendix A. The Phase 1A scheme over the main site area seeks to provide a bonded Port off the MSC with a connecting chord railway to the Port Salford Junction and road connections to the A57. The Phase 1C future development sees enlargement of the Port to accommodate two berths, increased Port area to accommodate greater container stacking, rail mounted cranes and increased rail sidings. Phase 1C also allows for development of warehousing adjacent to the Port with associated development of the Port and warehousing roadways. Development of warehousing will require re-alignment of the Salt-Eye at Phase 1C. At Phase 1A, the current understanding is that two rail overbridges will be required for construction to facilitate crossing of the existing Salt-Eye. A third rail overbridge is required for the WGIS re-aligned A57, however contractual responsibility for design and construction of this bridge has yet to be resolved.

Future designers for Phase 1A will require knowledge of the full Phase 1C design such that clashes between the two phases are avoided (i.e. future Phase 1C piling runs should be kept clear of obstruction if possible etc.).

Geotechnical assessment relating to the rail chord north of the A57 is covered separately within the complementary Mott MacDonald Report: Port Salford Intermodal Freight Terminal: Ground Investigation Report: B1762900-3/CV.REP/0001/P01 (2013), hence discussion of the area north of the A57 is excluded from this report.

7.1.1 Phase 1A

7.1.1.1 Port Structures

Phase 1A will allow for development of a reduced Port Area to incorporate 1 off-shore berth and limited container stacking facilities which will be serviced by wheel mounted cranes. The off-shore berth will require construction of a mooring dolphin and attendant elevated platform for loading/unloading. Such structures will require piling to withstand load cases as detailed in the Tender Documents, both water-borne loads and structural crane loads. The container stacking areas are proposed to be located proximal to the existing terraced side-slope for the MSC, and set further back at an off-set >50m from the existing break in slope. A sectional view through this area is provided within Works Information Drawing: MMD-293621-G-DR-00-XX-13002.

A significant risk to work within the immediate vicinity of the existing MSC side slope, is a lack of ground investigation information within this zone and the presence of significant utilities. United Utilities have a sludge pipeline and water main running parallel to the MSC alignment within the terraced side-slope –

these services together with a Telecommunications fibre-optic cable (Virgin Media) have significant wayleaves (40m) which to date have prevented detailed ground investigation. A utilities investigation has been scheduled to determine the exact depth and location of the services, and discussions are understood to be underway with the service providers to establish a service protection agreement. Ground conditions immediately adjacent to the MSC are therefore uncertain at this stage, however it is worth noting that ground levels throughout the area have been raised from the initial 15mAOD. Drawing MMD-293621-G-DR-00-XX-14022 details an historical summary for the Port Salford site; historical OS mapping indicates that the River Irwell was temporarily diverted along two sections of this area to allow construction of the MSC, hence ground conditions may be anticipated to be variable.

At this outline design stage, given that the MSC terraced side-slopes have formerly supported tram lines and moreover would have accommodated a separation bund between the dredge material basin to the north and the MSC, it is assumed that ground conditions beneath the sideslopes will comprise either medium dense granular fill or reworked firm to stiff clay. On this assumption it may be possible for container stacking areas to be accommodated on strip footings subject to localised ground improvement and final services protection agreed way-leaves. Should strip footings impose a load onto the existing services, then either the load will require transfer to deeper competent strata (ie. piled container stacks), services will require isolation via installation of protective sheet piling, or services will require diversion.

7.1.1.2 Bridge Structures

Temporary rail under-bridges are required to facilitate crossing of the rail corridor over the existing Salt-eye channel. The bridges will possess spans of approximately 10-20m with abutments founded at elevations of approximately 13-16mAOD, bearing onto soft Alluvial Deposits. Approach embankments of the order of 3-6m height will be required, hence it is anticipated that load transfer down to the dense glacial gravels or Sherwood Sandstone will be required. Sections through the proposed bridge locations are provided on Drawing MMD-293621-G-DR-00-XX-13003.

7.1.1.3 Ground Improvement

Port Area

Drawing: MMD-293621-G-DR-00-XX-13002 details ground conditions across the Port area. Away from the uncertain ground conditions adjacent to the current MSC side-slopes, ground conditions comprise very soft to soft MGDCS material overlying soft Alluvial Deposits to depths of typically 5-6m. Medium dense Glacial Deposits are typically encountered at depths of 8-10mbgl. These areas will require improvement to prevent failure both in bearing and serviceability failure in settlement. Improvement by means of pre-loading utilising geotextile separators and thick drainage/capping layers may offer a solution, allowing for up-to 6 months pre-loading. Staged surcharge loads to prevent bearing failure would be envisaged to be required with greater loads applied to container stacking areas than elsewhere.

Rail Corridor

Drawing: MMD-293621-G-DR-00-XX-13003 details that south of the northern crossing of the Salt-Eye, there is an area of MGDCS. The rail will cross this on embankment (1-2m high), hence ground improvement or load transfer will likely be required to prevent bearing failure and adverse settlement beneath the footprint of the embankment. Further south on the rail corridor, the railway is anticipated to run in shallow cut through the MGCCW, whilst north of the Salt-Eye the railway traverses MGGW (variable but predominantly granular fill). Rail standards assume a trackbed subgrade modulus of 30MN/m^2; proof

rolling to prove the modulus can be achieved will likely be required. If substandard subgrade is present, solutions to stiffen the trackbed such as basal geogrids, could be incorporated.

7.1.1.4 Earthworks

Slopes will be required to be formed for the permanent works associated with the railway earthworks, for development platforms for the warehousing areas, and for landscaping of the Salt-eye diversion and environmental bunds. For outline designs, slope angles of 1V:2H have been assumed for engineering fill and for cuts within Glacial Deposits; elsewhere within Made Ground and Alluvial Deposits, slope angles of 1V:3H have been assumed.

The intention for the scheme is to maximise re-use of material on site, thereby minimising import and export of materials and minimising waste. Site levels have therefore been determined considering the final Phase 1C site layout, adopting material acceptability criteria determined from the Contaminated Land Assessment and waste assessment there-in, and determined from consideration of the in-situ geotechnical parameters as discussed in Section 5 of this report, to determine material acceptability for engineering re-use.

Drawings: MMD-293621-G-DR-00-XX-13005 and 13006 provide cut-fill contour plots for the Phase 1C and Phase 1A developments respectively, together with details of assumptions related to percentage material acceptability assumed. Volumes, as detailed on the drawings, for the various strata have been determined through the use of Holebase and Surfer software to provide 3-D strata surfaces (clipped as appropriate for areas of landfill/channel deposition), which have then been added into a 3D MX model. The models include consideration of the full Port Salford scheme.

It should be stressed that the historic variable nature of Made Ground type and distribution and the variable nature of the in-situ depositional environment (alluvial), make generalisation of strata uncertain, hence the earthworks balance may be anticipated to vary and will present a risk factor to development. Designers should consider phasing of works and stockpiling of materials such that re-use of materials are optimised.

7.1.2 Phase 1C

7.1.2.1 Port Structures

Phase 1C allows for expansion of the Port to include for a 2nd berth requiring localised excavation into the existing MSC northern bank, and dredging of the MSC bed. The expansion further allows for extension of the port east and west, construction of rail mounted cranes, expansion of the railway to include for freight sidings and expansion of the container stacking areas.

The new berthing pocket will require construction of a quay wall, and the likelihood, given that Sherwood Sandstone levels are deemed to be slightly above the base level of the canal, is that this will require a bored pile solution or a combi-wall solution. Likewise crane rails will also require piling to avoid differential settlement. The proposed alignments for such deep works will require checking against service protection agreements. Port offices are proposed to be constructed within the area of MGDCS. Unless the structures are extremely lightly loaded, these too may require piling.

Extension of the container stacking areas and port highway network is likely to require ground treatment as per Phase 1A where these traverse MGDCS deposits. Where they traverse MGGW deposits the granular nature of the material may prove suitable for foundations subject to proof rolling; should ground

improvement be required the granular nature may make dynamic or vibratory compaction a preferred option.

7.1.2.2 Warehouse Structures

The Port Salford Scheme has an allocated area for warehouse development at Phase 1C. At this stage three plots are proposed, the eastern-most of which will traverse the existing Salt-eye, and a similar flat elevation profile has been allowed for all three. The ground conditions for the three plots will vary significantly, however all three will sit directly upon typically 4-6m of MGDCS or MGGW to some extent. Gas monitoring to date suggests that the sites classify as Gas Characteristic Situation 3, hence passive venting and barriers for hardstanding and buildings is likely to be required, subject to confirmation with the Regulatory Authorities. Foundation options are therefore considered to likely comprise raised floor slabs on piled foundations.

7.1.2.3 Salt-Eye Diversion

To allow warehouse development, the intention is to divert the existing Salt-Eye channel to the south, backfilling the existing channel. The new landscaped cut will allow for improvements to the aquatic and landscaped environment. Backfill of the former channel provides an opportunity for on-site waste disposal subject to isolation and engineering constraints imposed by the overlying proposed works. Disposal of unsuitable engineering material within the channel will require approval of the Regulatory Authorities.

United Utilities are undertaking works in advance of Phase 1C to provide a tunnelled outfall from the Eccles Waste-Water Treatment Works to the present day mouth of the Salt-Eye. The proposed Salt-Eye Diversion at its western end passes between and in close proximity to the proposed Phase 1A rail alignment (situated to the N) and the UU proposed tunnel (situated to the S). The designer should consider the benefit of enabling works in advance of both the Phase 1A railway and the UU tunnel becoming operational (as in the latter case a way-leave will likely apply), to install any temporary or permanent structure requirements of the Salt-Eye Diversion (ie. Sheet pile walls, headwalls etc.).

7.2 Characteristic Design Parameters

Table 7.1 provides characteristic design parameters proposed for existing ground conditions, as supported by the data presented in Chapter 5. These are intended only as guidance to inform design. Future design teams should critically re-asses data and determine characteristic design parameters appropriate for their specific design cases. No reliance can be placed on Table 7.1 for adoption in detailed design.

Table 7.1: Characteristic Geotechnical Design Parameters

Strata	γ' (kg/m3)	omc (%)	c_u [1] (kN/m^2)	c' (kN/m^2)	Φ_p' [2] (°)	E_u [3] (MN/m^2)	E' [4] (MN/m^2)	m_v [5] (m^2/MN)	c_v [6] (m^2/yr)	c_h (m^2/yr)	ν'	k (m/s) [7]
MGGW	17	10-13	-	0	32	-	10	-	-	-	0.3	$2.5\text{x}10^{-7}$ to $3.6\text{x}10^{-5}$
MGDCS	15	20-23	10-20	0	25	$200c_u$	$0.93E_u$	0.9	1.0	3.0	0.4	$2.8 \text{ x } 10^{-10}$
MGCCW	18	10	-	0	32	-	10	-	-	-	0.3	$1\text{x}10^{-4}$
ALLCS	17.5		20-30	0	26	$250c_u$	$0.93E_u$	0.4	3.0	9.0	0.4	$3.7 \text{ x } 10^{-10}$
ALLSG	18	10-13	-	0	32	-	10	-	-	-	0.3	$4\text{x}10^{-4}$
GLSG	20	-	-	0	36	-	25	-	-	-	0.3	$5\text{x}10^{-3}$
GLCL	20	-	60	0	30	$750c_u$	$0.83E_u$	0.2	5.0	10.0	0.25	$3.1 \text{ x } 10^{-10}$
Sherwood Sandstone	22	-	UCS = 2000	35	45		2000				0.25	$1\text{x}10^{-6}$

Notes:
[1] Based on Aas et al (1986), BS8002 Table 2 and CIRIA Report C504: Engineering in Glacial Till Fig 5.1 and plasticity data presented in Chapter 5.
[2] Based on EN1997-2:2007 Tables D1 & F3 and BS8002 Table 3.
[3] Based on empirical correlations to undrained shear strength as summarised in Bowles: Foundation Analysis & Design 5th Edition Table 5.6.
[4] Based on EN1997-2:2007 Table D1 and CIRIA Report C504 Section 8.1.2for granular material. Drained stiffness for cohesive deposits based on elasticity theory.
[5] Based on oedometer test data and CPT empirical correlation EN1997-2:2007: Table D2.
[6] Based on oedometer test data and CPT dissipation test data.
[7] Based on Hazen's formula for granular deposits ($k - 001D_{10}^2$.

7.3 Geotechnical Hazards

Table 7.2 provides details of identified geotechnical hazards for consideration by designers. Geo-environmental hazards are covered separately within Mott MacDonald Report: MMD-293621-G-REP-002: Port Salford Contaminated Land Risk Assessment & Remediation Strategy (2013).

Table 7.2: Ground Hazards

Hazard	Risk/Opportunity	Relative Risk Level	Mitiigation
Ground conditions are variable across development plot areas comprising both in-situ incised channel deposits (potential for localised soft ground) and backfilled/landfilled deposits (potential for soft, gassing, variable deposits)	Variable ground conditions will dictate ground-water and gas flow and will potentially induce differential settlement	High	Design layout should consider avoiding step-changes in ground conditions.
There are significant extents of soft ground deposits predominantly beneath the warehousing and Port areas	Potential for large consolidation settlements and indeed bearing failure	High	Either adoption of deep foundations or ground improvement
Ground conditions within the canal-side corridor adjacent to the MSC have not been investigated due to existing utilities wayleaves. The ground is known to be Made Ground and is indicated to have locally hosted diversion channels for the River Irwell during the MSC construction	The quay-side/canal-side Port will sit above this. Outline design has assumed that ground conditions will comprise predominantly re-worked natural or MGGW. However there is potential for MGDCS or ALLCS to be encountered	High	Further GI is recommended once utilities service protection agreements/or diversions are agreed. Detailed designers to account for this in design
Potential for buried obstructions associated with the landfilled areas (particularly MGGW areas)	Increase construction cost and programme	Moderate	Risk allowance is recommended.
Existing services traverse beneath the site	Potential for service disruption through either construction strike or damage induced by differential settlement	Moderate	Service protection agreements required. Design to be revised as appropriate.
Potential for consolidation settlement to vary.	If optimistic, outline design ground improvement works will increase construction programme	High/Moderate	Recommend loading trials are undertaken in advance of construction
Construction of the Salt-Eye Diversion will require excavation of ground either side of the MSC Barton Dock. There is a 4.7m head difference across the lock. Diversion works will need to account for upstream water levels.	Step change in water levels provide a design risk to stability of excavations upstream of Barton Dock. OPPORTUNITY – the step change in water level may provide potential for capture of hydro-energy.	High	MSC level and quality monitoring should be implemented and designs allow for most onerous water heads.
The Port development will impose significant concentrated vertical loads onto the existing ground.	Potential for de-stabilisation of the existing MSC sideslopes.	High	Additional GI and design assessment for finalised loading regime
Re-use of materials	The variability and distribution of different materials provides significant uncertainty for the mass haul earthworks balance which may result in a significant requirement for import/export.	High	Designers to assess outline design acceptability assumptions and consider best means of phasing works to achieve a balance
Interface with adjoining schemes	There is a construction interface with the WGIS scheme and UU utility diversion schemes	Moderate	Close liaison with adjoining schemes required

8. References

1. Mott MacDonald Report Reference B1762900-3/CV.REP/0001 P01: Port Salford Intermodal Freight Terminal Ground Investigation Report (2013)
2. Eurocode 7 – Geotechnical Design: Part 2: Ground Investigation and Testing BSEN 1997-2:2007
3. Geological Survey of Great Britain (England & Wales): 1:63360: Sheet 85 Manchester Solid & Drift (1970)
4. WS Atkins Northwest report Barton Strategic Employment Site Ground Investigation and Assessment,1998
5. Hyder Report Barton Strategic Employment Site, Phase 1 Feasibility Study Report, May 1999, Report Ref SH11615/D1/2
6. WS Atkins Report, Barton Masterplan, Geotechnical and Environmental Desk Study, May 2000, Report Ref AF6626.005/AR/jw/075.17083
7. WSP Report, Geo-Environmental Site Investigation, Rhodia Ltd, Liverpool Road, Barton Moss, Manchester, Report Ref 91115M/3030(1), October 2000
8. Geotechnics Ltd Report: Port Salford Ground Investigation: Factual Report Volumes 1&2: Report Ref: PN112650 (2012)
9. Foundation & Exploration Services Report Ref: 3462: Barton SES, Salford (1997)
10.

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3. British Railways Board: Civil Engineering Department: Soil Mechanics Section: Report: The Soil Mechanics Investigation carried out in connection with the proposed underbridge 112a over M62 in Barton Moss area: 1972
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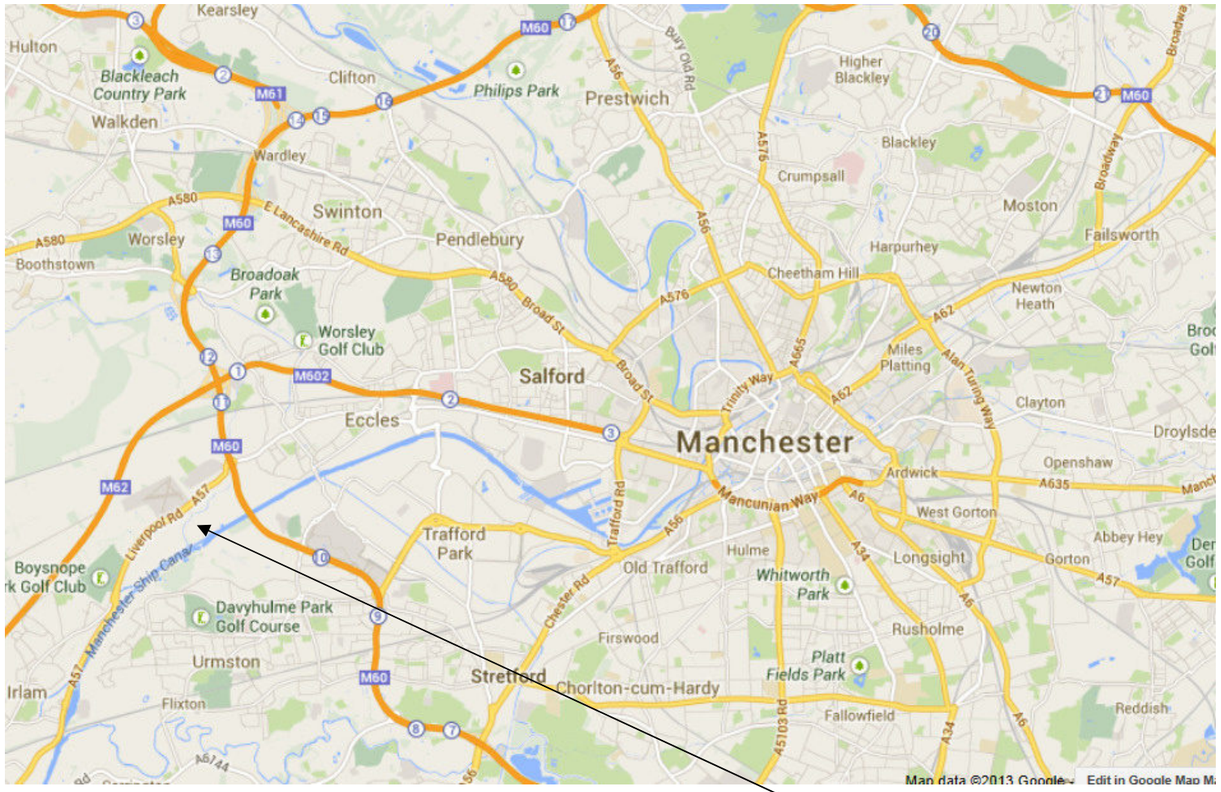
15. British Standards Institute, 2011. BS10175:2011 (2011) Investigation of Potentially Contaminated Sites - Code of Practice BS10175:2011.
16. Nathanail, C.P., McCaffrey, C., Ashmore, M.H., Cheng, Y.Y, Gillett, A., Ogden, R. & Scott, D. 2009.The LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment, 2nd ed. Land Quality Press, Nottingham.
17. Drinking Water Inspectorate, 2010. UK Drinking Water Standards
18. Network Rail Standard NR/L3/ENV/044: Track maintenance, renewal or alteration – used ballast handling (Issue 3, 2011)
19. Network Rail Standard NR/L3/CIV/071: Geotechnical Design (Issue 4, 2012)

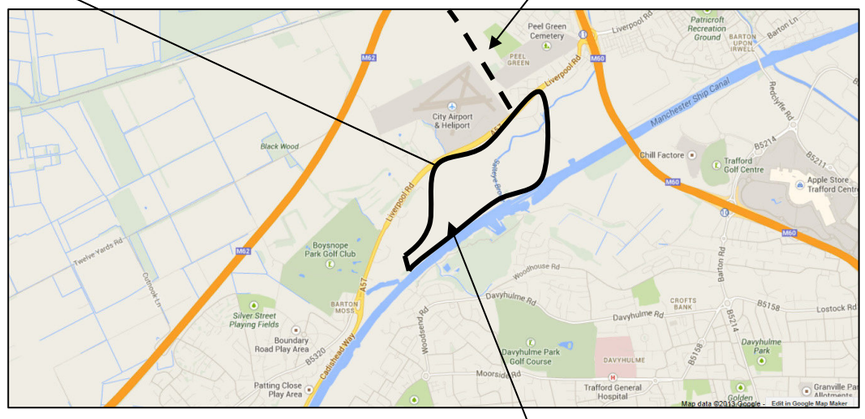
Appendices

Appendix A. Site Location & Photo's



Site Location Plan

Rail Corridor



Port Salford Main Site Area

Plate 1: View of the proposed Port berthing area

Plate 2: View of the Salt-Eye valley looking due south from the Warehouse 3 area

Plate 3: View of the proposed Warehouse 1 area

Plate 4: Historical aerial view of Barton Aerodrome and site area between Salt-Eye and A57. Date of photograph unknown but believed to be circa 1950's. Note the sewage treatment works for the aerodrome within the site boundary and the raised land berm – this berm no longer exists, Victoria Tip landfill having infilled against it

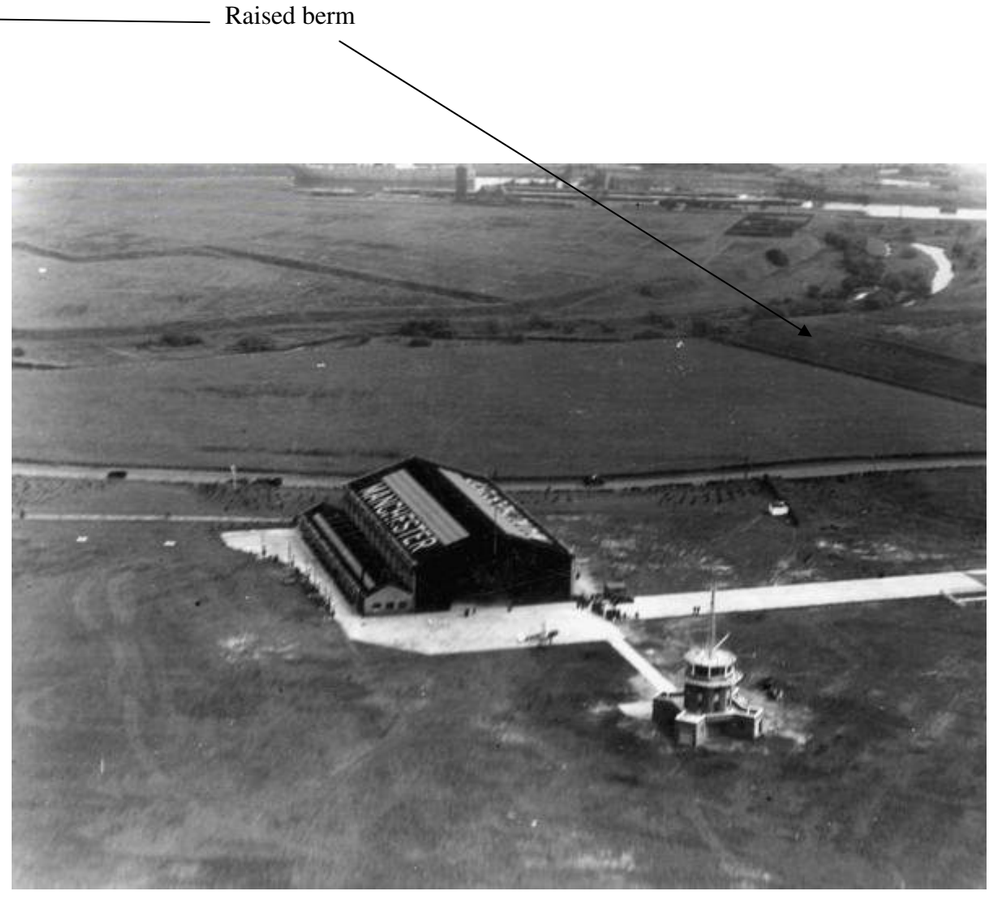


Plate 5: Historical aerial view of Barton Aerodrome looking south towards the Salt-Eye. Date of photograph unknown but believed to be circa 1950's. Note the raised land berm as identified in Plate 4 above.

Plate 6: Historical aerial view of Barton Locks looking eastwards. Date of photograph unknown but believed to be circa 1930's. Note the tram-ways which extended across the length of the Port Salford berthing area

Plate 7: Historical aerial view of the RAF base situated on the former REME area. The date of the photograph is unknown but believed to be circa late 1960's. Note the extent of the former base. The purpose of the large foundation pads located over the western area (now Makro area) is unknown.

Appendix B. Drawings

MMD-293621-G-DR-00-XX-14020	Site Investigation Locations & Historical Land Use
MMD-293621-G-DR-00-XX-14021	Historical Land Use & Proposed Phase 1C Development
MMD-293621-G-DR-00-XX-14022	Geo-Environmental Baseline Plan
MMD-293621-G-DR-00-XX-14024	Geological Cross-Sections Sheet 1/4
MMD-293621-G-DR-00-XX-14025	Geological Cross-Sections Sheet 2/4
MMD-293621-G-DR-00-XX-14026	Geological Cross-Sections Sheet 3/4
MMD-293621-G-DR-00-XX-14027	Geological Cross-Sections Sheet 4/4
MMD-293621-G-DR-00-XX-13001	GA Site Wide Ground Works: Phase 1A
MMD-293621-G-DR-00-XX-13002	Wharf Area Ground Improvement: Phase 1A
MMD-293621-G-DR-00-XX-13003	Private Rail Ground Works: Phase 1A
MMD-293621-G-DR-00-XX-13005	Earthworks Cut-Fill Balance: Phase 1C
MMD-293621-G-DR-00-XX-13006	Earthworks Cut-Fill Balance: Phase 1A

For Post GRIP 3 Ground Investigation works carried out on the existing Network Rail embankment see drawing MMD-293621-G-DR-00-XX-13038

E 14026
C 14025
B 14024
E 14026
F 14027
A 14024
F 14027
C 14025
D 14025
B 14024
A 14024
D 14025

1:5000 0 250m 500m

Notes

1. Landfill boundaries taken from Environment Agency website http://maps.environment-agency.gov.uk and WS Adams Barton Master Plan; Developments Contraints Plan (2000)
2. Ground conditions are detailed within 2 separate scheme specific documents . Ground conditions for the proposed Network Rail Siding north of the A57 are detailed in the Port Salford GRIP 3 Ground Investigation Report ref B1762900-3/CV.REP/00001 P01. Ground conditions for the Port Salford site south of the A57 are detailed in Mott MacDonald Report Ref.:Port Salford Main Site Areas Ground Investigation Report: MMD-293621-G-REP-001.
3. Factual Ground Investigation data cources are reported and detailed in the Legend section.

Key to symbols

- Infilled Land - Former Channel of River Irwell
- Surface Waters of Note
- Believed Line of Culverted Surface Water Course
- Historic Channel of Boyle Brook
- Rail Track of Former Mineral Tramway
- Infilled Land - Landfill & former mineral excavations (MGGW)
- Infilled Land - Inferred Sandstone Arisings From MSC Construction (MGCCW)
- Infilled Land - Inferred Dredged Clay & Silt (incorporates a network of land drains at 10-20m spacing draining to the Boyle Brook culvert and MSC (MGDSC)
- A 14024 Section Line with Drawing Number Detailed
- Former On-Site Sewage Works
- Former WWII Depot (REME) now industrial land use
- Site Boundary
- Area of Believed Night Soils Deposition
- Network Rail Embankment Fill
- Off-Site Potentially Contaminating Land Uses (inc. sewage Treatment Works, Industrial Units, Cemetery and Airport
- Salford City Stadium Development

- BH Borehole
- WS Window Sample
- NSWS Window Sample undertaken on Network Rail land
- CPT Piercocone
- TP Trial Pit
- */S Surface Water Sampling Points

Prefix 'BGS' = Historical Ground Investigation Records sourced from www.bgs.ac.uk
Prefix 'G' = Geotechnics Ltd: Port Salford Ground Investigation (2012) - Factual Report Ref PN112650
Prefix 'UU' = United Utilities Exploratory Hole Records 2012
Prefix 'A57' = Geotechnics Ltd: A57 Bridge Ground Investigation (2012) -Factual Report Ref PN122694
No Prefix - Numerical Series 1-20 WSP Report Ref 91126M/3030
No Prefix - Numerical Series 100-600 - Atkins Report Ref AY2441/AJS/kat/012.8538(3)
Prefix WSCN = Topdrill Ltd. Ref Site No. TOP 0653, January 2011

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	03/12/13	JW	Preliminary Issue	NS	NH

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Co-financed by the European Union
Trans-European Transport Network (TEN-T)

Client
THE PEEL GROUP

Title
Port Salford

Site Investigation Locations and Historical Land Use

Designed	NS	NS	Eng check	NS	NS
Drawn	DC	DC	Coordination	NH	NH
Dwg check	NS	NS	Approved	NH	NH

Scale at A1	Status	Rev
1:5000	PRE	P1

Drawing Number
MMD-293621-G-DR-00-XX-14020

P:\Manchester\Northwest\Projects (Odd)\293621 Port Salford\Drawings\Internally Produced\Geotech\MMD-293621-G-DR-00-XX-14020 Site Investigation Locations.dwg Dec 6, 2013 - 2:00PM emm64705

Area for future Warehouse Development

1:5000 0 250m 500m

P:\Manchester\Northwest\Projects (Odd)\293621 Port Salford\Drawings\Internally Produced\Geotech\MMD-293621-G-DR-00-XX-14021 Site Layout Plan.dwg Dec 6, 2013 - 4:10PM emm64705

Notes

1. Landfill boundaries taken from Environment Agency website http://maps.environment-agency.gov.uk and WS Adams Barton Master Plan; Developments Contraints Plan (2000).
2. WGIS layout based on TTHC Drawing M11108-A-024
3. Proposed Phase 1C General Arrangements taken from MMD-293621-Z-DR-00-XX-12086.

Key to symbols

- Infilled Land - Former Channel of River Irwell
- Surface Waters of Note
- Believed Line of Culverted Surface Water Course
- Historic Channel of Boyle Brook
- Rail Track of Former Mineral Tramway
- Infilled Land - Landfill & former mineral excavations (MGGW)
- Infilled Land - Inferred Sandstone Arisings From MSC Construction (MGCCW)
- Infilled Land - Inferred Dredged Clay & Silt (incorporates a network of land drains at 10-20m spacing draining to the Boyle Brook culvert and MSC (MGDCS)
- Former On-Site Sewage Works
- Former WWII Depot (REME) now industrial land use
- Site Boundary
- Area of Believed Night Soils Deposition
- Network Rail Embankment Fill
- Off-Site Potentially Contaminating Land Uses (inc. sewage Treatment Works, Industrial Units, Cemetery and Airport
- Salford City Stadium Development
- Landscape Areas

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	03/12/13	JW	Preliminary Issue	NS	NH

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Client
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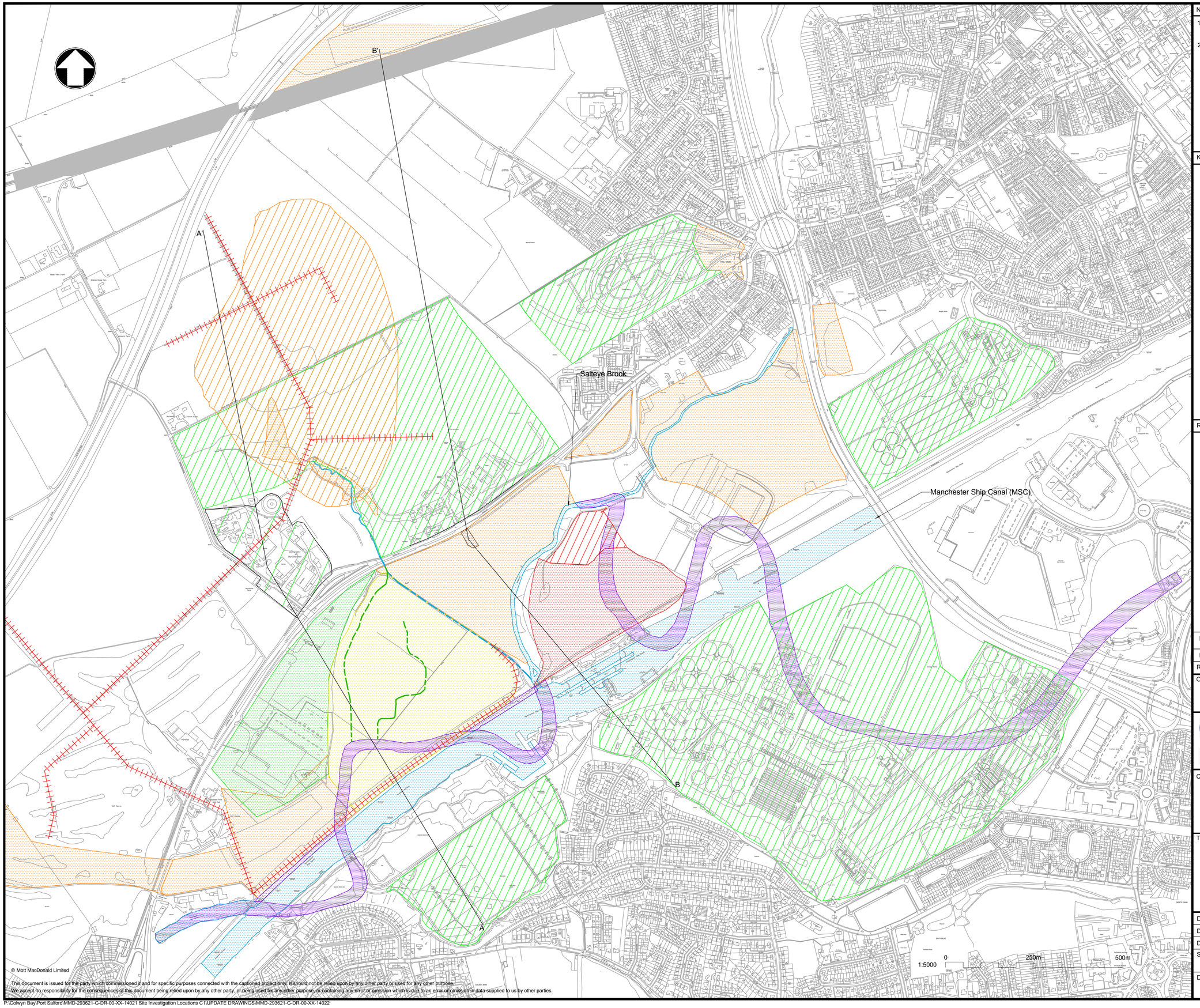
Title
Port Salford
Historical Land Use & Proposed Phase 1C Development

Designed	NS		Eng check	NS	
Drawn	DC		Coordination	NH	
Dwg check	NS		Approved	NH	

Scale at A1: 1:5000
Status: PRE
Rev: P1

Drawing Number
MMD-293621-G-DR-00-XX-14021



Notes

1. Landfill boundaries taken from Environment Agency website http://maps.environment-agency.gov.uk and WS Adams Barton Master Plan; Developments Contraints Plan (2000)
2. This drawing is to be read in conjunction with the Port Salford Contaminated Land Assessment and Remediation Strategy = MMD-293621-G-REP-002

Key to symbols

- Infilled Land - Former Channel of River Irwell
- Surface Waters of Note
- Believed Line of Culverted Surface Water Course
- Historic Channel of Boyle Brook
- Rail Track of Former Mineral Tramway
- Infilled Land - Landfill & Former Mineral Excavations (MGGW)
- Infilled Land - Inferred Sandstone Arisings From MSC Construction (MGCCW)
- Infilled Land - Inferred Dredged Clay & Silt (incorporates a network of land drains at 10-20m spacing draining to the Boyle Brook Culvert and MSC) (MGDCS)
- Former On-Site Sewage Works
- Former WWII Depot (REME) now industrial land use
- Area of Believed Night Soils Deposition
- Network Rail Embankment Fill
- Off-Site Potentially Contaminating Land Uses (inc. sewage treatment works, industrial units, cemetery and airport)
- Potential area of (MGDCS)
- A — A' / B — B' Conceptual Model Cross Section Lines

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	08/11/13	KL	Section Markers Added and Adjustment to Key	NS	NH
P1	22/08/12	DC	Preliminary Issue	NS	NH

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Title
Port Salford

Geo-Environmental Baseline Plan

Designed	NS		Eng check	NS	
Drawn	DC		Coordination	NH	
Dwg check	NS		Approved	NH	

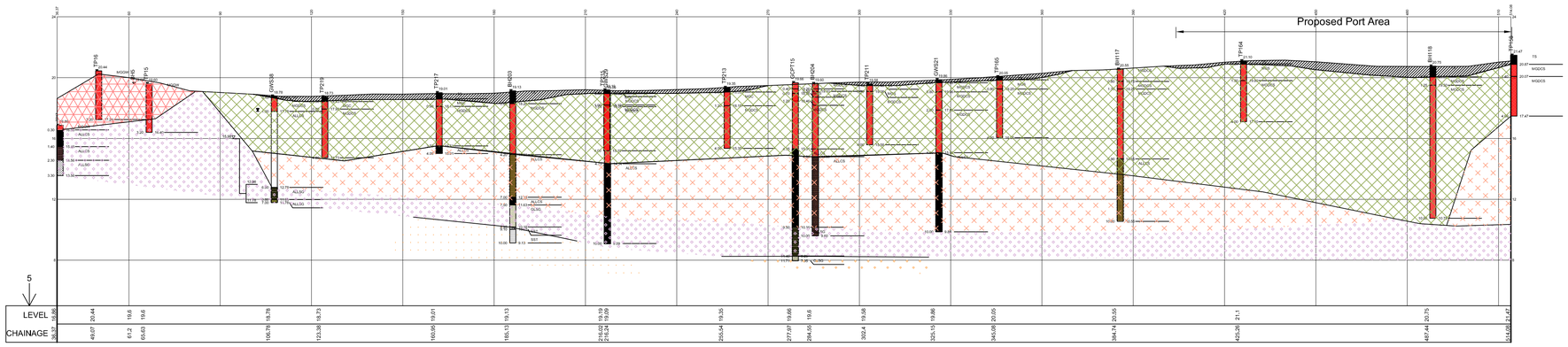
Scale at A1: 1:5000
Status: PRE
Rev: P2

Drawing Number
MMD-293621-G-DR-00-XX-14022

P:\Colwyn Bay\Port Salford\MMD-293621-G-DR-00-XX-14021 Site Investigation Locations C1\UPDATE DRAWINGS\MMD-293621-G-DR-00-XX-14022

NW

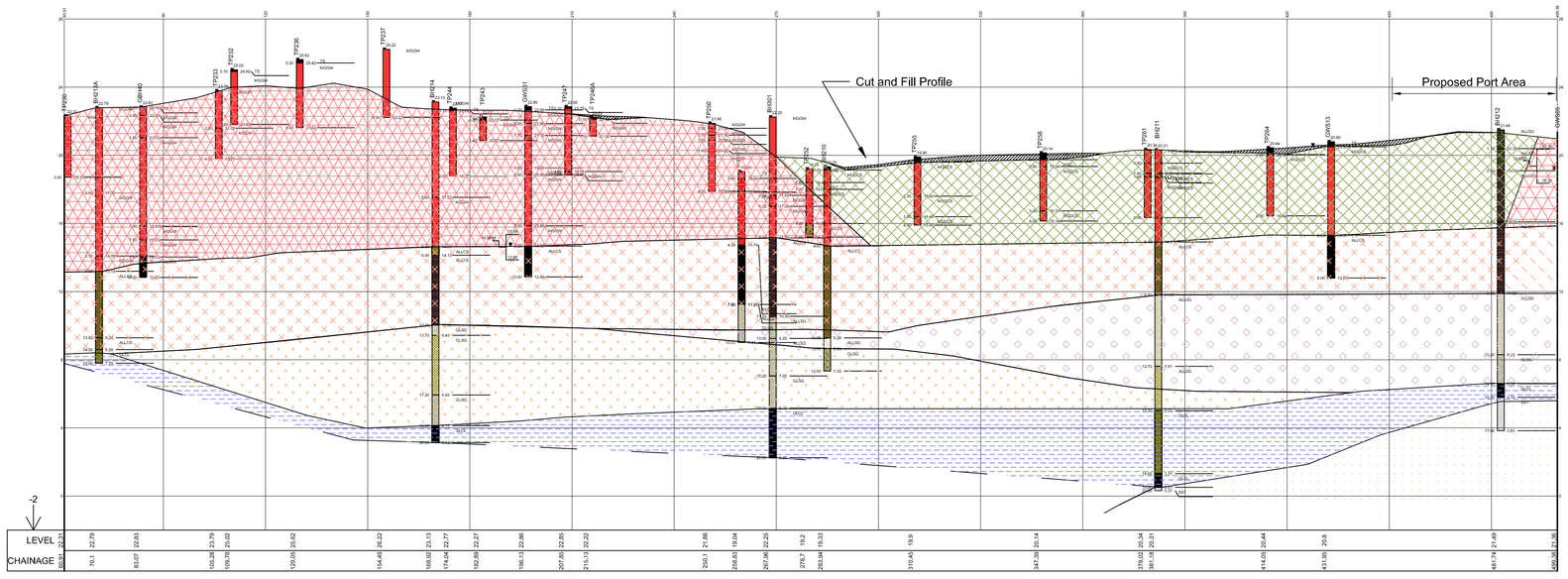
SE



Section A-A
Not to Scale

NW

SE



Section B-B
Not to Scale

Notes

Published geological mapping:

- Historical ground investigation borehole records from the British Geological Survey.
- WS Atkins report Barton Strategic Employment Site Ground Investigation and Assessment, 30 January 1998, Report Ref AY2441/AJS/kat/012,8538(3)
- Hyder Report Barton Strategic Employment Site, Phase 1 Feasibility Study Report, May 1999, Report Ref SH11615/D1/2
- WS Atkins Report, Barton Masterplan, Geotechnical and Environmental Desk Study, May 2000, Report Ref AF6626.005/AR/jw/075.17083
- WSP Report, Geo-Environmental Site Investigation, Rhodia Ltd, Liverpool Road, Barton Moss, Manchester, Report Ref 91115M/3030(1), October 2000
- Port Salford Planning Submission, Capita Symonds Structures 2005
- Geotechnics Ltd, Factual Report on Ground Investigation, Report Ref PN112650, March 2012.
- MMD-293621-G-DR-00-XX-14020 Geo-Environmental Baseline Plan with Phase 1A overlay (previously 11020) (Done)
- MMD-293621-G-DR-00-XX-14021 Site Investigation Locations & Sub-division of GI Analysis Areas (to be done)

Key to symbols

- Topsoil
- Glacial Clay
- Peat
- Sherwood Sandstone
- Made Ground Embankment Fill
- Made Ground General Waste [MGGW]
- Made Ground Dredged Clay Silt [MGDCS]
- Made Ground Canal Construction Waste [MGCCW]
- Alluvial Clay Silt
- Alluvial Sands and Gravels
- Glacial Sands & Gravels

Reference drawings

Site Information Drawings:
MMD-293621-G-DR-00-XX-14020 Site Investigation Locations and Historical Land Use

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	4/12/13	AJE	Preliminary Issue	NH	LE

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Client
THE PEEL GROUP

Title
Port Salford
Geological Cross Sections
Section A: Proposed Warehouse 1
Section B: Proposed Warehouse 2
Sheet 1 of 4

Designed	N Haynes		Eng check	N Haynes	
Drawn	A. Emmott		Coordination	N Haynes	
Dwg check	N Haynes		Approved	L Edmonds	
Scale at A1	NTS	Status	PRE	Rev	P1

Drawing Number
MMD-293621-G-DR-00-XX-14024

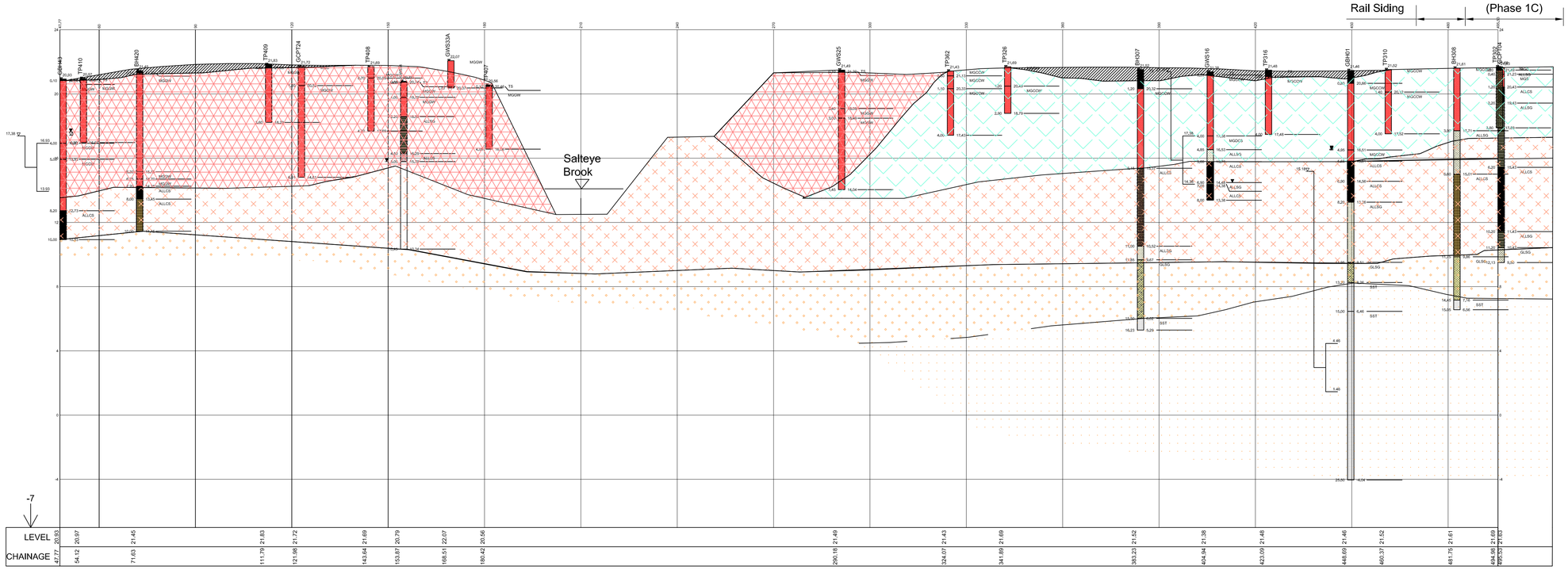
P:\Manchester\Northwest\General\Ground Engineering and Environment Group\Projects\Port Salford\Final Drawings\Drawings
Justin\Sections\MMD-293621-G-DR-00-XX-14024 Section A-B.dwg Dec 6, 2013 - 8:09AM emm64705

N

S

Proposed Private Rail Siding

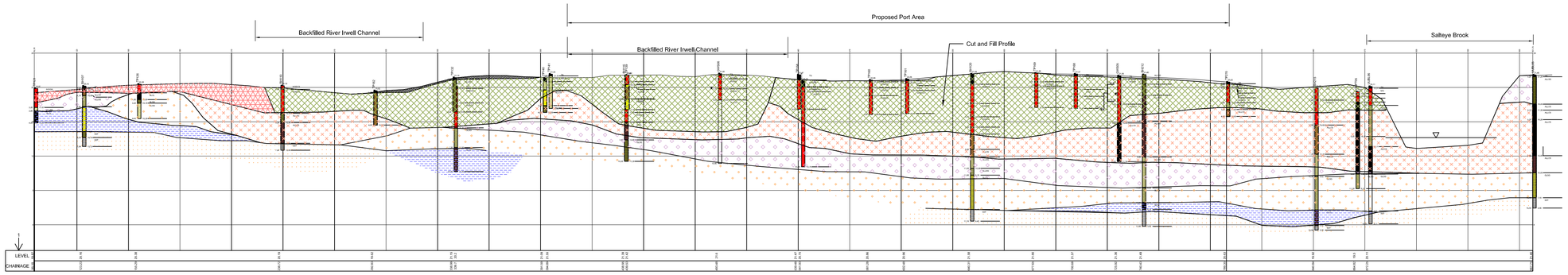
Proposed Salteye Brook Diversion (Phase 1C)



Section C-C
Not to Scale

SW

NE



Section D-D
Not to Scale

Notes

Published geological mapping:

- Historical ground investigation borehole records from the British Geological Survey.
- WS Atkins report Barton Strategic Employment Site Ground Investigation and Assessment, 30 January 1998, Report Ref AY2441/AJS/kat/012.8538(3)
- Hyder Report Barton Strategic Employment Site, Phase 1 Feasibility Study Report, May 1999, Report Ref SH11615/D1/2
- WS Atkins Report, Barton Masterplan, Geotechnical and Environmental Desk Study, May 2000, Report Ref AF6626.005/AR/jw/075.17083
- WSP Report, Geo-Environmental Site Investigation, Rhodia Ltd, Liverpool Road, Barton Moss, Manchester, Report Ref 91115M/3030(1), October 2000
- Port Salford Planning Submission, Capita Symonds Structures 2005
- Geotechnics Ltd, Factual Report on Ground Investigation, Report Ref PN112650, March 2012.
- MMD-293621-G-DR-00-XX-14020 Geo-Environmental Baseline Plan with Phase 1A overlay (previously 11020) (Done)
- MMD-293621-G-DR-00-XX-14021 Site Investigation Locations & Sub-division of GI Analysis Areas (to be done)

Key to symbols

- Topsoil
- Glacial Clay
- Peat
- Sherwood Sandstone
- Made Ground Embankment Fill
- Made Ground General Waste [MGGW]
- Made Ground Dredged Clay Silt [MGDCS]
- Made Ground Canal Construction Waste [MGCCW]
- Alluvial Clay Silt
- Alluvial Sands and Gravels
- Glacial Sands & Gravels

Reference drawings

Site Information Drawings:
MMD-293621-G-DR-00-XX-14020 Site Investigation Locations and Historical Land Use

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	5/12/13	AJE	Preliminary Issue	NH	LE

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Title

Port Salford
Geological Cross Sections
Section C: Proposed Warehouse 3
Section D: Quay Wall
Sheet 2 of 4

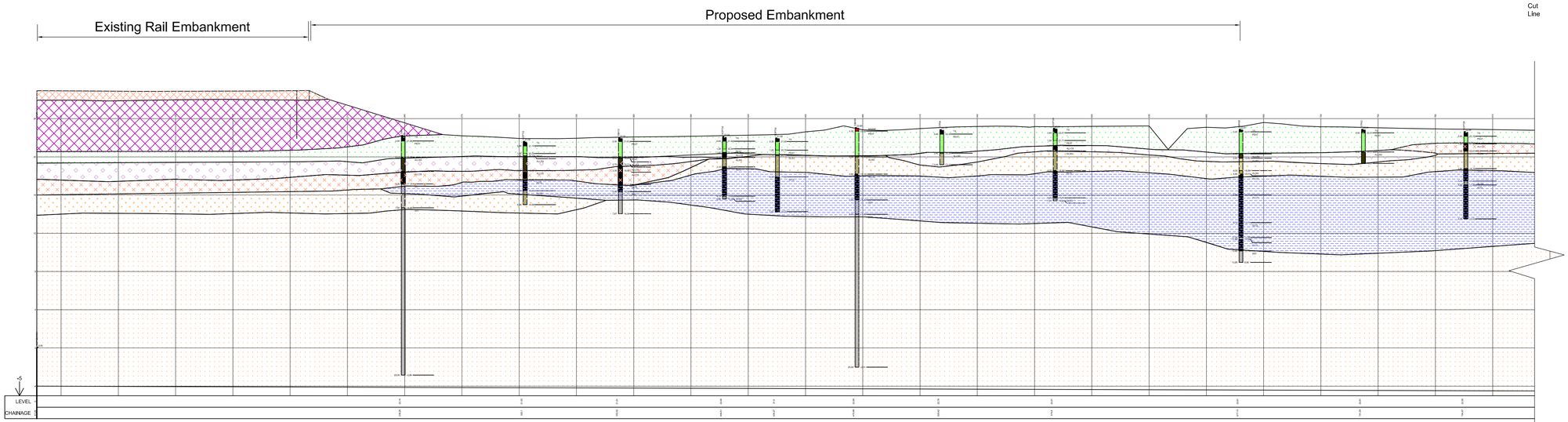
Designed	N Haynes		Eng check	N Haynes	
Drawn	A Emmott		Coordination	N Haynes	
Dwg check	N Haynes		Approved	L Edmonds	

Scale at A1	Status	Rev
NTS	PRE	P1

Drawing Number
MMD-293621-G-DR-00-XX-14025

N

S



Section E-E
Not to Scale

N

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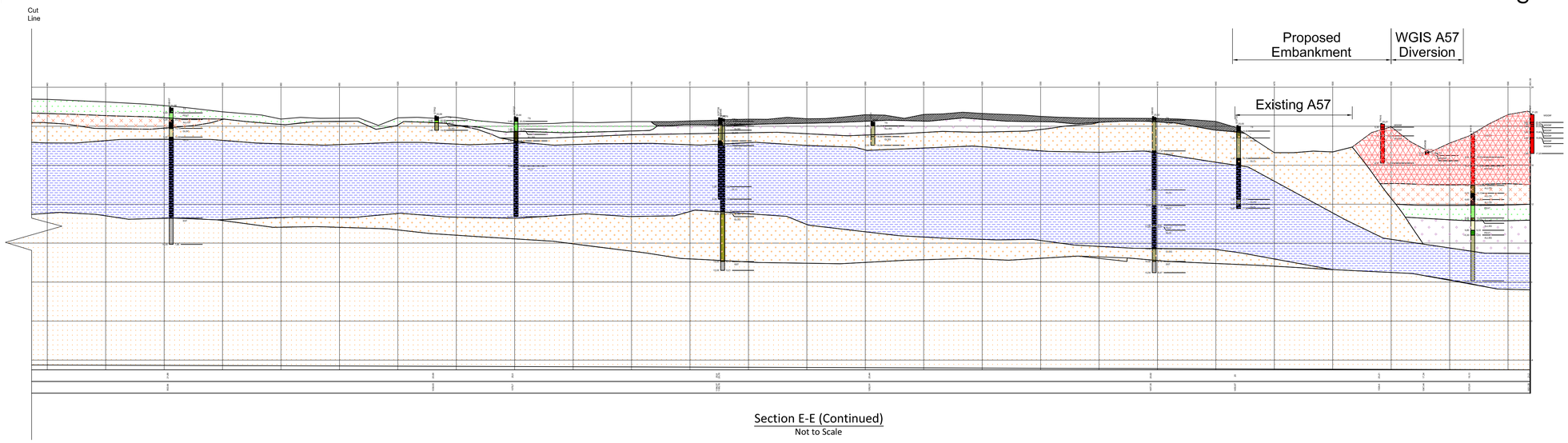

Section E-E (Continued)
Not to Scale

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Justin\Sections\MMD-293621-G-DR-00-XX-14026 Section E.dwg Dec 6, 2013 - 8:08AM emmi64705

Notes

Published geological mapping:

- Historical ground investigation borehole records from the British Geological Survey.
- WS Atkins report Barton Strategic Employment Site Ground Investigation and Assessment, 30 January 1998, Report Ref AY2441/AJS/kat/012.8538(3)
- Hyder Report Barton Strategic Employment Site, Phase 1 Feasibility Study Report, May 1999, Report Ref SH11615/D1/2
- WS Atkins Report, Barton Masterplan, Geotechnical and Environmental Desk Study, May 2000, Report Ref AF6626.005/AR/jw/075.17083
- WSP Report, Geo-Environmental Site Investigation, Rhodia Ltd, Liverpool Road, Barton Moss, Manchester, Report Ref 91115M/3030(1), October 2000
- Port Salford Planning Submission, Capita Symonds Structures 2005
- Geotechnics Ltd, Factual Report on Ground Investigation, Report Ref PN112650, March 2012.
- MMD-293621-G-DR-00-XX-14020 Geo-Environmental Baseline Plan with Phase 1A overlay (previously 11020) (Done)
- MMD-293621-G-DR-00-XX-14021 Site Investigation Locations & Sub-division of GI Analysis Areas (to be done)

Key to symbols

- Topsoil
- Glacial Clay
- Peat
- Sherwood Sandstone
- Made Ground Embankment Fill
- Made Ground General Waste [MGGW]
- Made Ground Dredged Clay Silt [MGDCS]
- Made Ground Canal Construction Waste [MGCCW]
- Alluvial Clay Silt
- Alluvial Sands and Gravels
- Glacial Sands & Gravels

Reference drawings

Site Information Drawings:

MMD-293621-G-DR-00-XX-14020 Site Investigation Locations and Historical Land Use
MMD-293621-G-DR-00-XX-13041 Network Rail Siding: Geological Sections Sheet 1
MMD-293621-G-DR-00-XX-13042 Network Rail Siding: Geological Sections Sheet 2

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	5/12/13	AJE	Preliminary Issue	NH	LE

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Client

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Title

Port Salford
Geological Cross Sections
Section E: Railway Corridor
Sheet 3 of 4

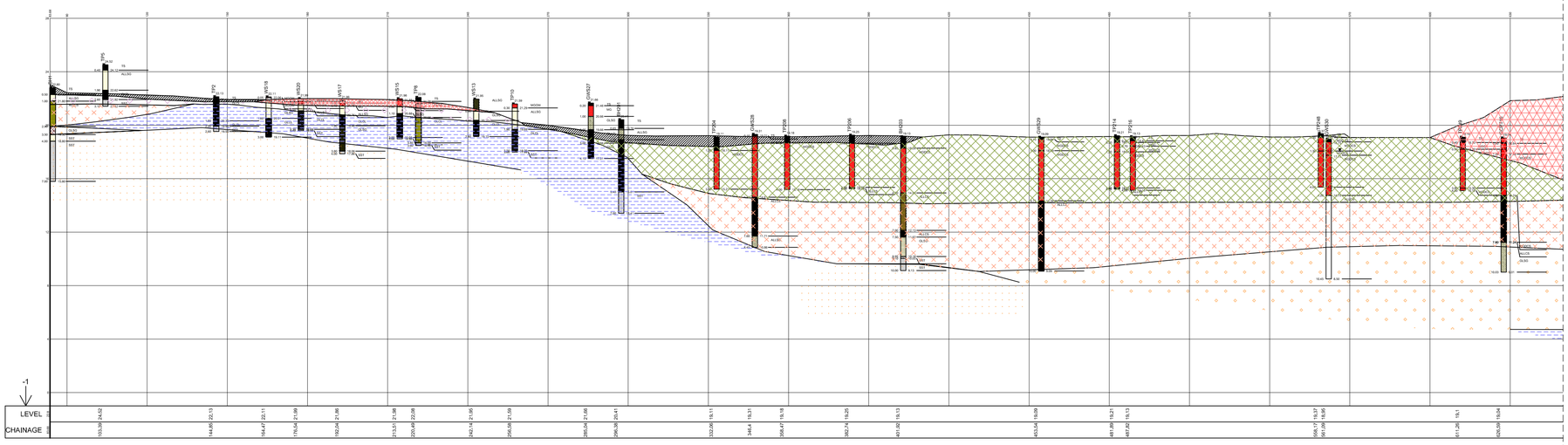
Designed	N Haynes		Eng check	N Haynes	
Drawn	A. Emmott		Coordination	N Haynes	
Dwg check	N Haynes		Approved	L Edmonds	

Scale at A1	Status	Rev
NTS	PRE	P1

Drawing Number
MMD-293621-G-DR-00-XX-14026

SW

CUT LINE

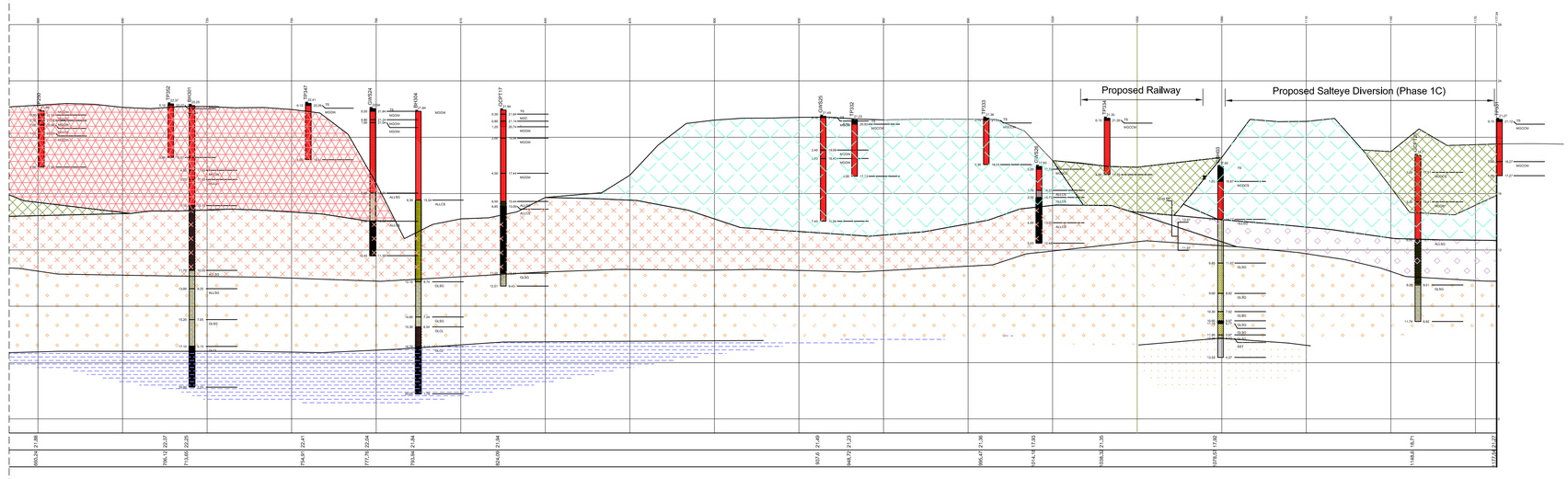


CUT LINE

Section F-F
Not to Scale

NE

CUT LINE



CUT LINE

Section F-F Continued
Not to Scale

Notes

Published geological mapping:

- Historical ground investigation borehole records from the British Geological Survey.
- WS Atkins report Barton Strategic Employment Site Ground Investigation and Assessment, 30 January 1998, Report Ref AY2441/AJS/kat/012.8538(3)
- Hyder Report Barton Strategic Employment Site, Phase 1 Feasibility Study Report, May 1999, Report Ref SH11615/D1/2
- WS Atkins Report, Barton Masterplan, Geotechnical and Environmental Desk Study, May 2000, Report Ref AF6626.005/AR/jw/075.17083
- WSP Report, Geo-Environmental Site Investigation, Rhodia Ltd, Liverpool Road, Barton Moss, Manchester, Report Ref 91115M/3030(1), October 2000
- Port Salford Planning Submission, Capita Symonds Structures 2005
- Geotechnics Ltd, Factual Report on Ground Investigation, Report Ref PN112650, March 2012.
- MMD-293621-G-DR-00-XX-14020 Geo-Environmental Baseline Plan with Phase 1A overlay (previously 11020) (Done)
- MMD-293621-G-DR-00-XX-14021 Site Investigation Locations & Sub-division of GI Analysis Areas (to be done)

Key to symbols

- Topsoil
- Glacial Clay
- Peat
- Sherwood Sandstone
- Made Ground Embankment Fill
- Made Ground General Waste [MGGW]
- Made Ground Dredged Clay Silt [MGDCS]
- Made Ground Canal Construction Waste [MGCCW]
- Alluvial Clay Silt
- Alluvial Sands and Gravels
- Glacial Sands & Gravels

Reference drawings

Site Information Drawings:
MMD-293621-G-DR-00-XX-14020 Site Investigation Locations and Historical Land Use

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	5/12/13	AJE	Preliminary Issue	NH	LE

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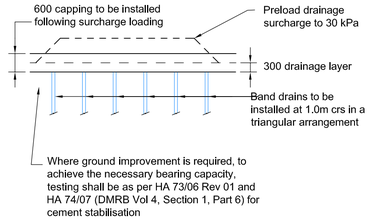
Title

Port Salford
Geological Cross Sections
Section F: Site Wide Section
Sheet 4 of 4

Designed	N Haynes		Eng check	N Haynes	
Drawn	A Emmott		Coordination	N Haynes	
Dwg check	N Haynes		Approved	L Edmonds	

Scale at A1	Status	Rev
NTS	PRE	P1

Drawing Number
MMD-293621-G-DR-00-XX-14027



Detail 1
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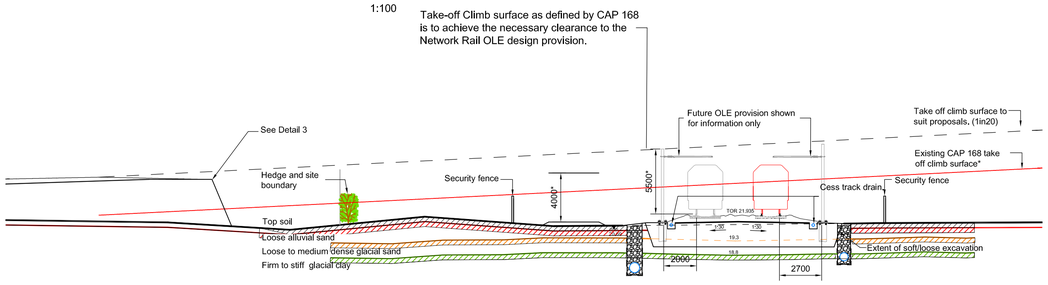

Detail 2
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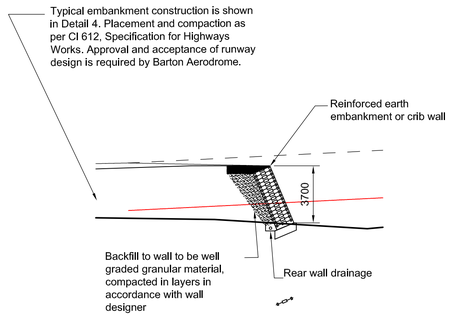

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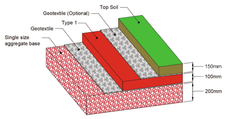

Detail 4: Seeded/ Turf Runway
NTS

Plan
1:5000

Notes

1. All dimensions in metres unless otherwise stated.
2. This drawing should be read in conjunction with the reference drawings detailed below.
3. Ground conditions are derived as follows:
   - Port Salford Main Site Area: Ground Investigation Report: MMD-293621-G-REP-001
   - Port Salford Network Rail Sidings: Ground Investigation Repotr: B1762900-3/CV.RGP/0001
4. Historically thesite has been bordered by industrial land-use and possess a history of land reclamation. Details of contamination risk assessment and proposed remediation are provided within: Port Salford Contaminated Land Risk Assessment and Remediation strategy: MMD-293621-G-RGP-002
5. Design and construction of Network Rail Sidings will be subject to Network Rail Outside Parties GRIP 4-8 Approval Process. The approved GRIP3 submission package is included within the tender package for onward development by the contractor.

Key to symbols

- WGIS
- Site Boundary
- Hard standing
- Proposed Railway Tracks
- Landscaping
- Manchester Ship Canal
- Localised thin layers of Made Ground overlying Glacial Till
- Infilled Land - Landfill & former mineral excavations [MGGW]
- Infilled Land - Inferred Sandstone Arisings From MSC Construction [MGCCW]
- Infilled Land - Inferred Dredged Clay & Silt (incorporates a network of land drains at 10-20m spacing draining to the Boyle Brook culvert and MSC [MGDCS]

Reference drawings

Reference Design Drawings:
- MMD-293621-G-DR-00-XX-13001 General Arrangement: Site Wide Ground Works
- MMD-293621-G-DR-00-XX-13002 Port Area Ground Works
- MMD-293621-G-DR-00-XX-13003 Private Rail Sidings Ground Works
- MMD-293621-D-DR-00-XX-13005 Earthworks Cut-Fill Balance: Phase 1C
- MMD-293621-D-DR-00-XX-13006 Earthworks Cut-Fill Balance: Phase 1A
- MMD-293621-G-DR-00-XX-13039 Network Rail Siding: Ground Improvement & Ancillary Civils
- MMD-293621-G-DR-00-XX-13040 Network Rail Siding: Civil Engineering General Arrangement
- MMD-293621-G-DR-00-XX-13041 Network Rail Siding: Post GRIP3 Ground Investigation and Minimum Baseline Monitoring Requirements

Site Information Drawings:
- MMD-293621-G-DR-00-XX-14020 Site Investigation Locations and Historical Land Use
- MMD-293621-G-DR-00-XX-14021 Historical Land Use and Proposed Phase 1A Development
- MMD-293621-G-DR-00-XX-14022 Geo-Environmental Baseline Plan
- MMD-293621-G-DR-00-XX-14023 Geo-Environmental Site Zoning Plan
- MMD-293621-G-DR-00-XX-14024 Geological Cross Sections A & B
- MMD-293621-G-DR-00-XX-14025 Geological Cross Section C & D
- MMD-293621-G-DR-00-XX-14026 Geological Cross Section E
- MMD-293621-G-DR-00-XX-14027 Geological Cross Section F
- MMD-293621-G-DR-00-XX-14030 Assessment Criteria: Organic Exceedances in Soils
- MMD-293621-G-DR-00-XX-14031 Assessment Criteria: In-Organic Exceedances in Soils
- MMD-293621-G-DR-00-XX-14032 Assessment Criteria: Organic Exceedances in Leachate
- MMD-293621-G-DR-00-XX-14033 Assessment Criteria: In-Organic Exceedances in Leachate
- MMD-293621-G-DR-00-XX-14034 Assessment Criteria: Organic Exceedances in Water
- MMD-293621-G-DR-00-XX-14034 Assessment Criteria: In-Organic Exceedances in Water
- MMD-293621-G-DR-00-XX-13041 Network Rail Siding: Geological Sections Sheet 1
- MMD-293621-G-DR-00-XX-13042 Network Rail Siding: Geological Sections Sheet 2

Rev	Date	Drawn	Description	Ch'k'd	App'd
00	29/11/2013	RJD	Tender Issue	PC	LE

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Trans-European Transport Network (TEN-T)

Client
THE PEEL GROUP

Title
Port Salford

General Arrangement
Site Wide Ground Works
Phase 1A

Designed	L Edmonds		Eng check	-	
Drawn	R Dickinson		Coordination	-	
Dwg check	P Clayton		Approved	L Edmonds	

Scale at A1	Status	Rev
As Shown	TEN	P1

Drawing Number
MMD-293621-G-DR-00-XX-13001

P:\Manchester\Northwest\General\Ground Engineering and Environment Group\Projects\Port Salford\Final Drawings\Drawings
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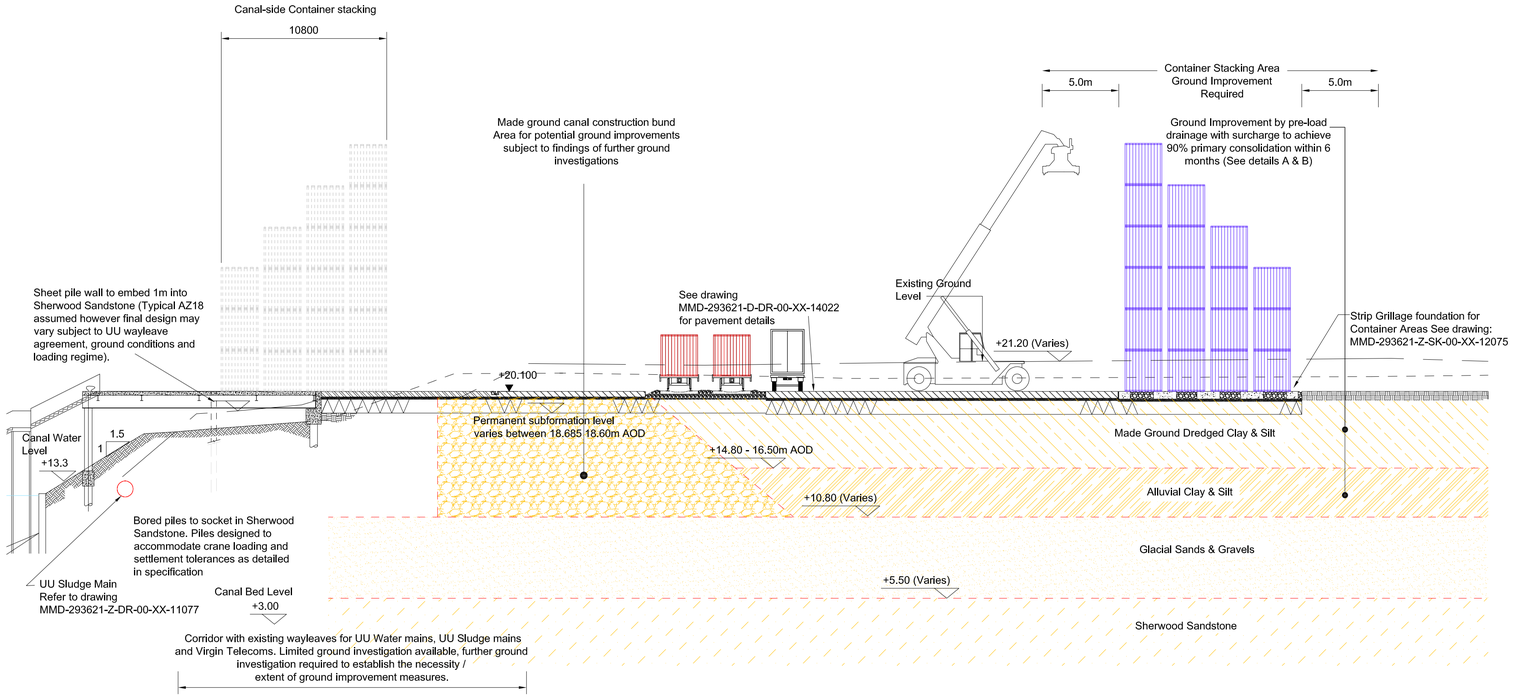
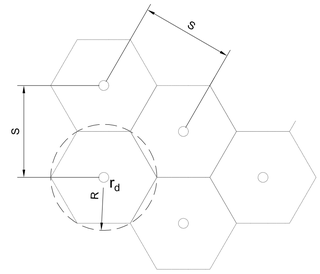


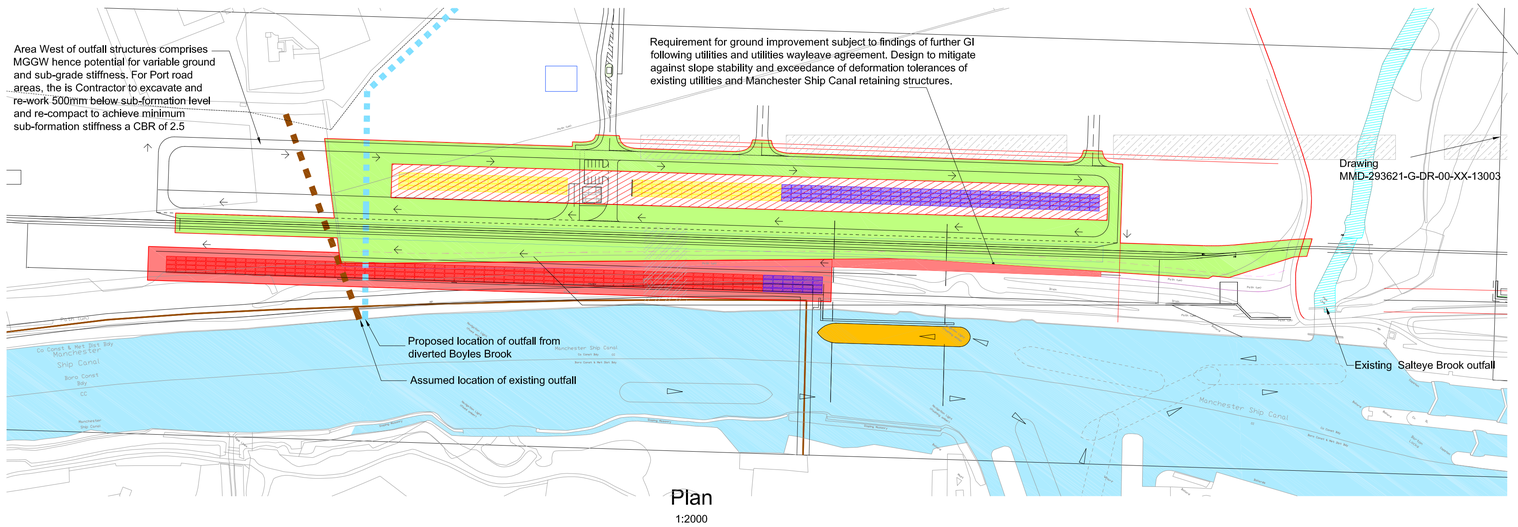
DETAIL B

1. BAND DRAIN DIAMETER D = 0.1m
2. INSTALLATION PATTERN = TRIANGULAR
3. INSTALLATION SPACING S = 1.0m



R = 0.525S

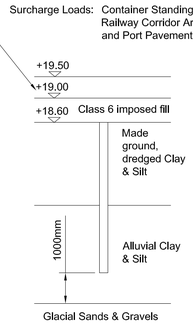
TRIANGULAR PATTERN



Plan

1:2000

Detail A



1. Ground to be excavated to base of drainage layer
2. Geotextile separator to be placed and granular drainage platform placed, band drains (or similar) to be punched through separator and installed as per Detail B. Drains to terminate 1.0m from base of Alluvial Clay & Silt to prevent opening of drainage pathways to underlying Aquifer Deposits
3. Class 6 capping to be placed up to 19.50m AOD for ultimate incorporation into pavement construction , covered with Geotextile Separator.
4. Preload drainage surcharge to be applied in staged construction so as to avoid bearing failure. Drainage effluent to be collected in lined sumps and tested in accordance with the requirements of the Remediation Strategy to determine discharge options
5. Contractor to design settlement monitoring system. Surcharge to be applied until 90% primary consolidation is achieved.

Notes

1. All dimensions in metres unless otherwise stated
2. Refer to drawing MMD-293621-Z-DR-00-XX-12074 for all reference drawings.
3. All levels in metres to Ordnance Datum.
4. Ground conditions are detailed within Port Salford Main Site Area: Ground Investigation Report: MMD-293621-G-REP-001 and cross sections A,B and D on drawings MMD-293621-G-DR-00-XX-14024 and 14025.
5. Bulk earthworks will require to comply with the Port Salford Remediation Strategy (MMD-293621-G-REP-002) or as agreed with the Regulatory Authorities.
6. Bulk Earthworks material to be in accordance with the Specification for Highway Works, Series 600 and the Employers Requirements.
7. Utility locations are detailed on White Young Green Drawing 4 below. Further investigation works to determine true positions of utilities are on-going.

Key to symbols

Container Standing Area MGDCS / ALLCS (90kNm² Surcharge Loading)

Port and Rail Area MGDCS / ALLCS (50kNm² Surcharge Loading)

Area of existing utility wayleaves for United Utilities and Virgin Media. Further Ground investigation is to be undertaken to assess the requirements for ground improvement. No construction works permitted in this area until service diversions are complete and wayleaves agreed.

Reference drawings

Updated GRIP 3 Submission drawings:

1.	MMD-293621-G-DR-00-XX-13001	GA Site Works Ground Works Phase 1A
2.	MMD-293621-G-DR-00-XX-13003	Private Rail Sidings: Ground Works.
3.	MMD-293621-G-DR-00-XX-12074	Phase 1A General Arrangement and References

White Green Young drawing:

4.	A074607-27 -ME-01	Existing Site Services

Rev	Date	Drawn	Description	Ch'k'd	App'd
00	12/10/12	JW	Tender Issue	NH	CH

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Trans-European Transport Network (TEN-T)

Client
THE PEEL GROUP

Title
Port Salford

Wharf Area Ground Improvement
Phase 1A

Designed	N Haynes	N Haynes	Eng check	C Harding	C Harding
Drawn	A Crowe	pp RJD	Coordination	N Haynes	N Haynes
Dwg check	G Miles	G Miles	Approved	L Edmonds	L Edmonds

Scale at A1	Status	Rev
as noted	TEN	00

Drawing Number
MMD-293621-G-DR-00-XX-13002

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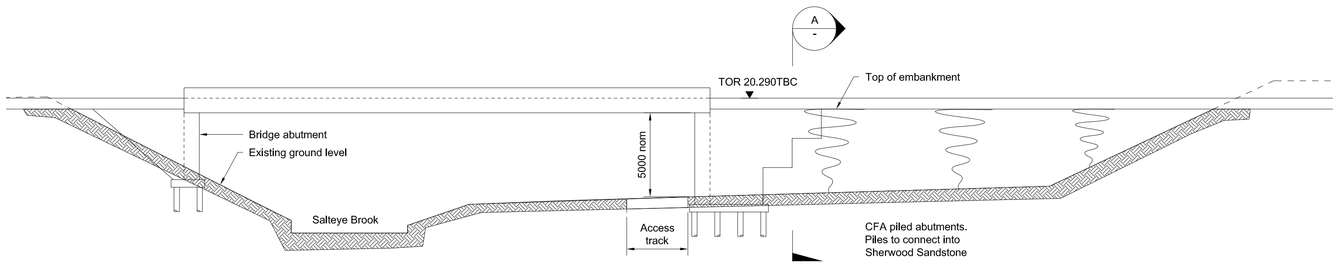
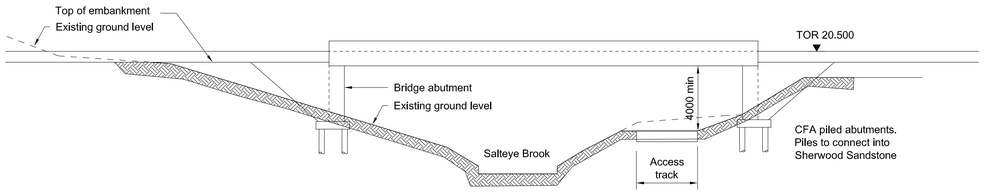


South Elevation Bridge No.2

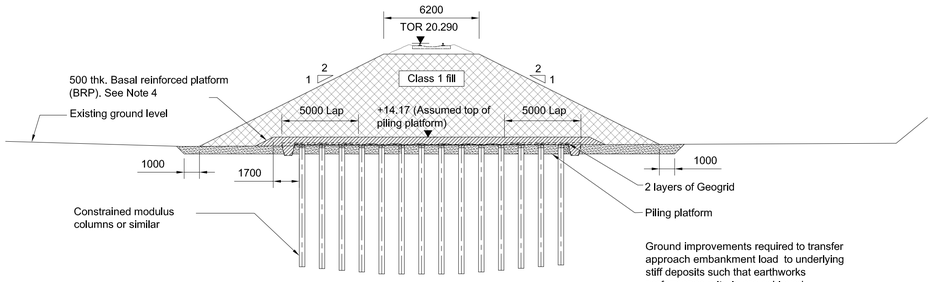
1:200

Note:
Bridge elevations shown indicatively. Refer to Bridge OAIPs and drawings



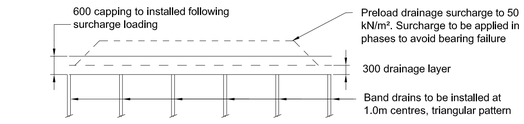
West Elevation Bridge No.1

1:200

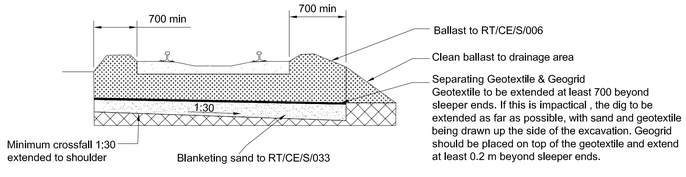


Ground improvements required to transfer approach embankment load to underlying stiff deposits such that earthworks performance criteria are achieved

Section A
1:200

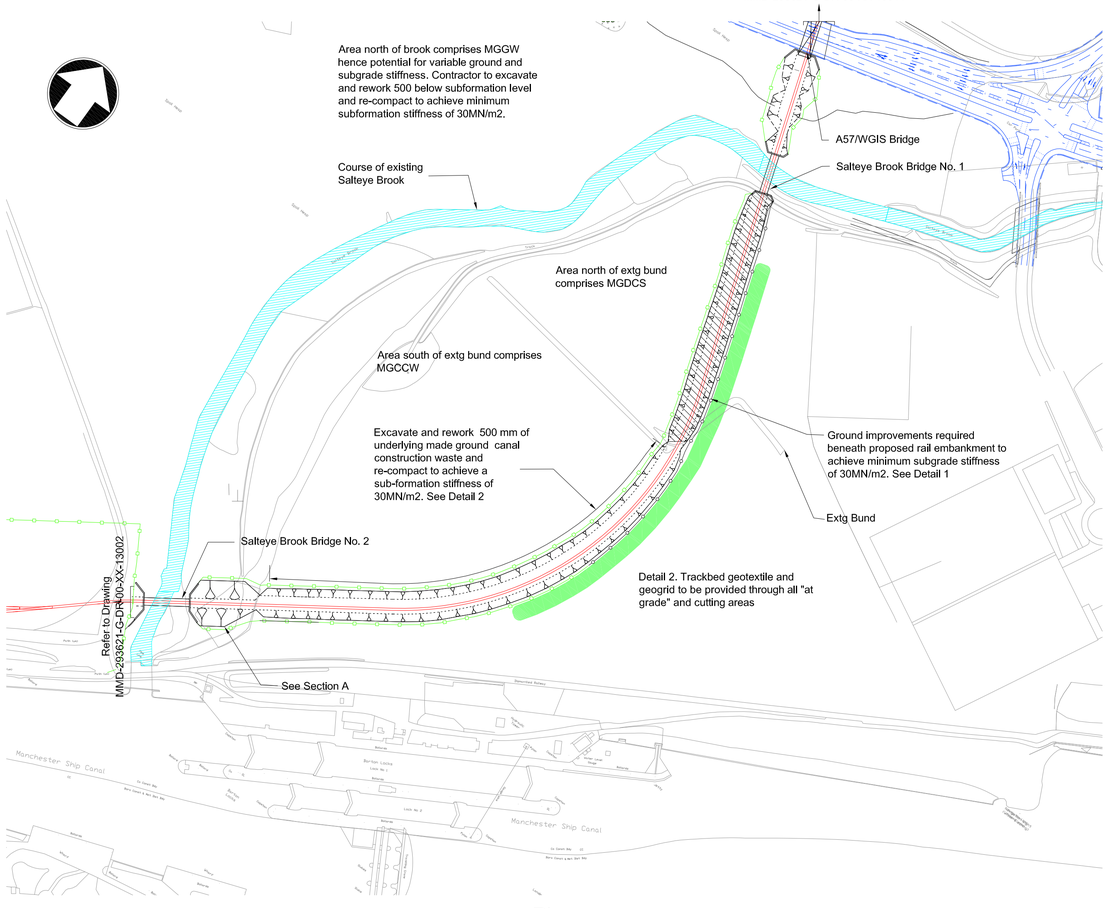


Detail 1
1:100
Preloaded Drainage



Detail 2
1:50
Standard Track Bed

Area north of brook comprises MGGW hence potential for variable ground and subgrade stiffness. Contractor to excavate and rework 500 below subformation level and re-compact to achieve minimum subformation stiffness of 30MN/m2.



Plan

1:2000

Notes

1. All dimensions in millimetres unless otherwise stated.
2. Refer to drawing MMD-293621-Z-DR-00-XX-12074 for all reference drawings
3. All levels in metres to Ordnance Datum.
4. BRP to comprise of Class 1A or 1B, compacted fill in accordance with paragraph 612 of Specification for Highway Works, Series 600 reinforced earth geogrid.
5. General embankment fill to comprise of Class 1, well compacted fill in accordance with paragraph 612 of Specification for Highway Works, Series 600.
6. Ground conditions are detailed within Port Salford Main Site Area: Ground Investigation Report, MMD-293621-G-RGP-001 and cross sectios D and F on drawings MMD-293621-G-DR-00-XX-14025 and 14027.

Key to symbols

Proposed Railway Tracks

Proposed Road (Public Highway)

Reference drawings

1. MMD-293621-C-DR-00-XX-101 - Salteye Brook Bridge 1 OAIP
2. MMD-293621-C-DR-00-XX-102 - Salteye Brook Bridge 2 OAIP
3. MMD-293621-G-DR-00-XX-14025 - Geological Cross Section D
4. MMD-293621-G-DR-00-XX-14027 - Geological Cross Section F

Reference documents

1. 293621-10-A Port Salford - Salteye Brook Bridge 1 OAIP
2. 293621-11-A Port Salford - Salteye Brook Bridge 2 OAIP
3. 293621-G-RGP-001 Port Salford Main Site Area: Ground Investigation Report

Rev	Date	Drawn	Description	Ch'k'd	App'd
00	05/12/2013	RJD	Tender Issue	NH	LSE

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Client
THE PEEL GROUP

Title
Port Salford
Private Rail Ground Works

Designed	N Haynes		Eng check	C Harding	
Drawn	R Dickinson		Coordination	N Haynes	
Dwg check	N Haynes		Approved	L Edmonds	

Scale at A1: As Shown
Status: TEN
Rev: 00

Drawing Number
MMD-293621-G-DR-00-XX-13003

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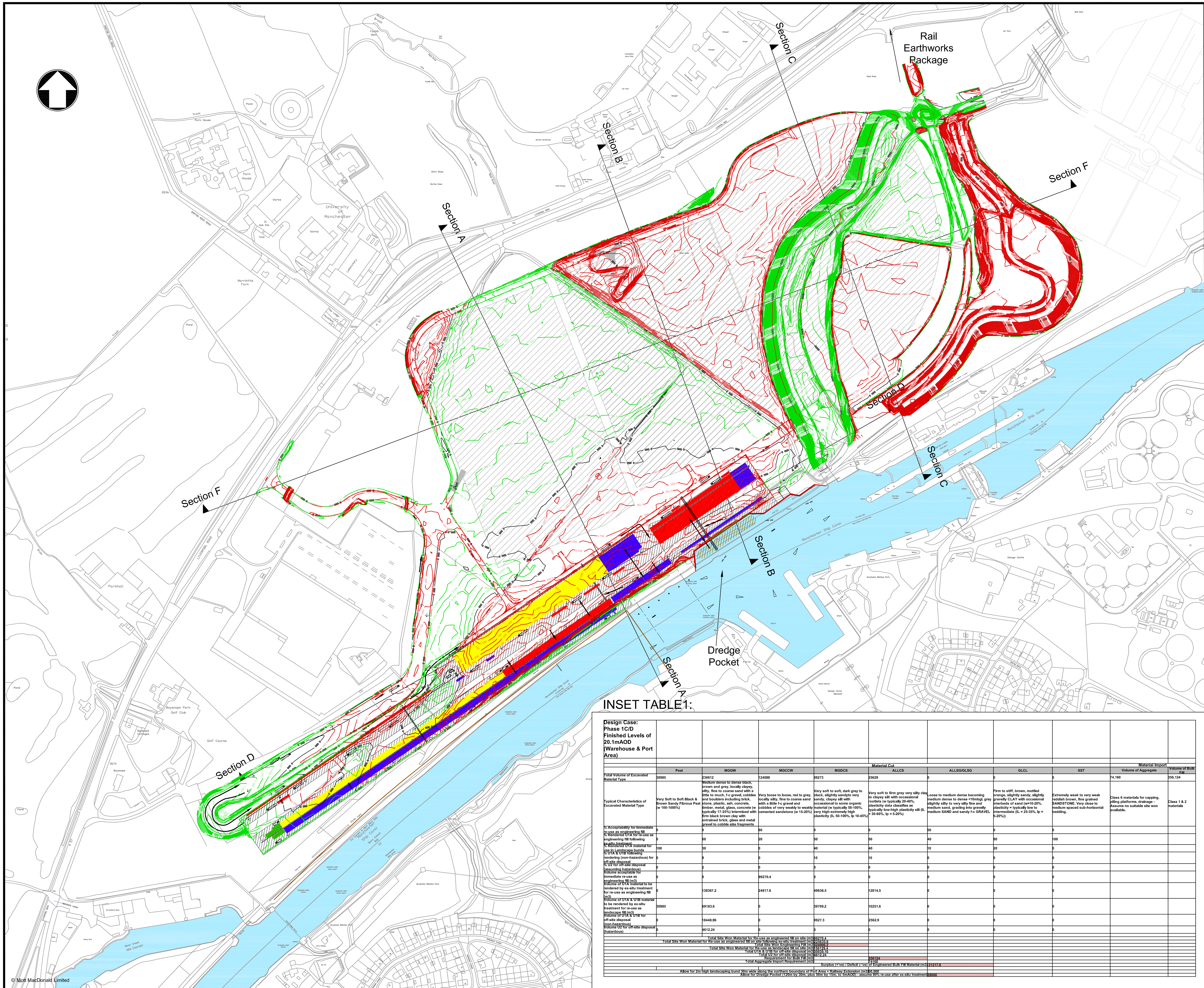

INSET TABLE1:

Design Case: Phase 1C/D Finished Levels of 20.1mAOD (Warehouse & Port Area)	Material Cut								Material Import	
	Peat	MGGW	MGCCW	MGDCS	ALLCS	ALLSG/GLSG	GLCL	SST	Volume of Aggregate	Volume of Bulk Fill
Total Volume of Excavated Material Type	30985	230612	124088	99273	25629	0	0	0	74,160	356,124
Typical Characteristics of Excavated Material Type	Very Soft to Soft Black & Brown Sandy Fibrous Peat (w 100-1000%)	Medium dense to dense black, brown and grey, locally clayey, silty, fine to coarse sand with a little to much, f-c gravel, cobbles and boulders including brick, stone, plastic, ash, concrete, timber, metal, glass, concrete (w typically 17-25%) intermixed with firm black brown clay with entrained brick, glass and metal gravel to cobble size fragments	Very loose to loose, red to grey, locally silty, fine to coarse sand with a little f-c gravel and cobbles of very weakly to weakly cemented sandstone (w 15-20%)	Very soft to soft, dark grey to black, slightly sandyto very sandy, clayey silt with occassional to some organic material (w typically 50-100%, very high-extremely high plasticity (IL 50-100%, Ip 10-45%)	Very soft to firm grey very silty clay to clayey silt with occassional rootlets (w typically 20-40%, plasticity data classifies as typically low-high plasticity silt (IL = 30-60%, Ip = 5-20%)	Loose to medium dense becoming medium dense to dense <10mbgl, grey slightly silty to very silty fine and medium sand, grading into gravelly medium SAND and sandy f-c GRAVEL	Firm to stiff, brown, mottled orange, slightly sandy, slightly gravelly CLAY with occasional interbeds of sand (w=10-20%, plasticity = typically low to intermediate (IL = 25-35%, Ip = 5-20%))	Extremely weak to very weak reddish brown, fine grained SANDSTONE. Very close to medium spaced sub-horizontal bedding.	Class 6 materials for capping, piling platforms, drainage - Assume no suitable site won available.	Class 1 & 2 materials
% Acceptability for Immediate re-use as engineering fill	0	0	80	0	0	50	0	0		
% Rendered U1A for re-use as engineering fill following ex-situ treatment	0	60	20	50	50	40	80	100		
% Rendered U1A material for use in Landscape bunds	100	30	0	40	40	10	20	0		
% U1A & U1B following rendering (non-hazardous) for off-site disposal	0	8	0	10	10	0	0	0		
% U2 for off-site disposal (assuming hazardous)	0	2	0	0	0	0	0	0		
Volume acceptable for immediate re-use as engineering fill (m3)	0	0	99270.4	0	0	0	0	0		
Volume of U1A material to be rendered by ex-situ treatment for re-use as engineering fill (m3)	0	138367.2	24817.6	49636.5	12814.5	0	0	0		
Volume of U1A & U1B material to be rendered by ex-situ treatment for re-use as landscape fill (m3)	30985	69183.6	0	39709.2	10251.6	0	0	0		
Volume of U1A & U1B for off-site disposal (non-hazardous)	0	18448.96	0	9927.3	2562.9	0	0	0		
Volume U2 for off-site disposal (hazardous)	0	4612.24	0	0	0	0	0	0		

Total Site Won Material for Re-use as engineered fill on site (m3)	99270.4
Total Site Won Material for Re-use as engineered fill on site following ex-situ treatment (m3)	225635.8
Total Site Won Engineering Fill (m3)	324906.2
Total Site Won Material for Re-use as landscape fill on site (m3)	150129.4
Total U1A & U1B for off-site disposal (m3)	30939.16
Total U2 for off-site disposal (m3)	4612.24
Requirement for Bulk Fill (m3)	356124
Total Aggregate Import Requirement (m3)	74160
Surplus (+'ve) / Deficit (-'ve) of Engineered Bulk Fill Material (m3)	-31217.8
Allow for 2m high landscaping bund 30m wide along the northern boundary of Port Area + Railway Extension (m3)	66,000
Allow for Dredge Pocket (120m by 30m, plus 50m by 15m, to 5mAOD) - assume 80% re-use after ex-situ treatment	28000

P:\Manchester\Northwest\General\Ground Engineering and Environment Group\Projects\Port Salford\Final Drawings\MMD-293621-G-DR-00-XX-13005
Earthworks Cut-Fill Balance Phase 1C.dwg Dec 12, 2013 - 5:21PM cla66821

Notes

1. All dimensions in millimetres unless otherwise stated
2. Due to the large site area the Contract shall aim to minimise disposal of arisings and importation of materials. The Contractor should seek to utilise The Definition of Waste: Development Industry Code of Practice Version 2 (2011), to minimise waste.
3. This Drawing is for information only and intends to show indicative areas of cut/fill for the Phase 1C Development assuming finalised surface levels of 20.1m AOD for the Port and warehousing areas, with other areas grading to existing levels. Assumptions relating to material suitability for re-use and application ofex-situ treatments to render material useful are inherent in the volumes quoted in Inset Table 1. No contractual reliance can be placed on these volumes.
4. This plan details proposed cut/fill lines for the Phase 1C works south of the A57. It excludes rail package earthworks (north of the A57), landscaping and dredging proposals. The location of these missing earthwork elements are detailed on the plan.
5. Ground information data to inform the earthworks balance may be found within the Port Salford Ground Investigation Report: MMD-293621-G-REP-001 Cross-sectional drawings: MMD-G-DR-00-XX-14024 - 14027 detail ground conditions across the site.
6. Inset Table 1 details the material volumes broken down per stratum/material type, inclusive of the missing earthworks elements discussed in note 4.

Key to symbols

CUT CONTOUR OF LEVEL DIFFERENCE (m)

FILL CONTOUR OF LEVEL DIFFERENCE (m)

Container Stacking Areas

Port Hardstanding Development Areas

Based on :
20.1m AOD finished levels for the Port Area, assuming:
Carriageway construction depth of 920mm
PQQ construction depth of 1415mm
Topsoil strip of 300mm

For the Warehouse Development Areas a sitre enabling plateau of 20.1mAOD has been assumed.

Reference drawings

For details of sections refer to drawing ref.

MMD-293621-G-DR-00-XX_14024 - 14027: Port Salford Geological Cross - Section
MMD-293621-Z-DR-00-XX_12086: Port Salford Phase 1C: General Arrangement

Rev	Date	Drawn	Description	Ch'k'd	App'd
00	10/12/13	AJE	Tender Issue	NH	CH
P1	29/10/13	JW	Preliminary Issue	MB	LE

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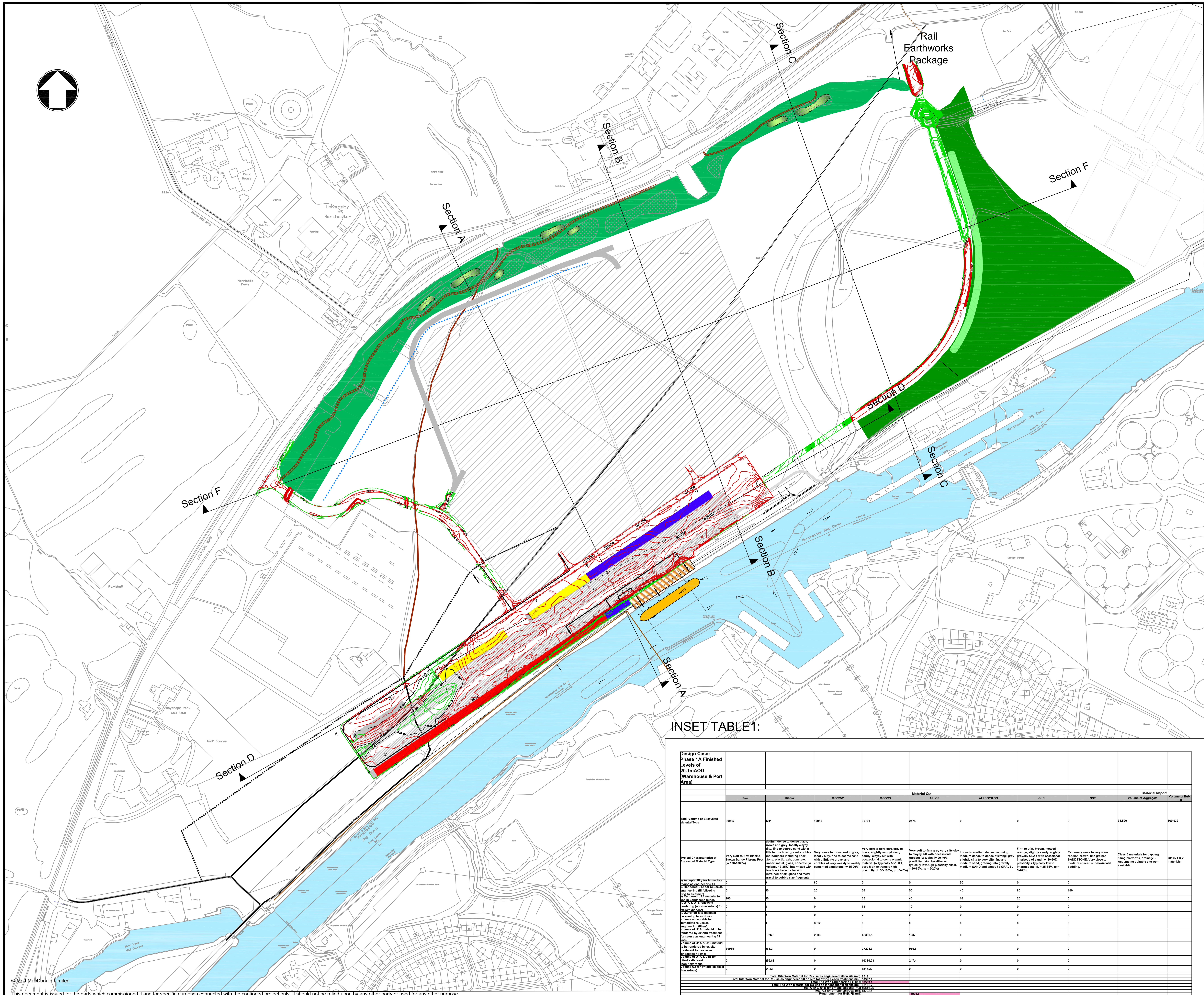
Client
THE PEEL GROUP

Title
Port Salford
Earthworks Cut-Fill Balance Phase 1C

Designed	P. Whittaker		Eng check	-	-
Drawn	P. Whittaker		Coordination	-	-
Dwg check	M Basting		Approved	L Edmonds	
Scale at A1 1:2500		Status TEN		Rev 00	

Drawing Number
MMD-293621-G-DR-00-XX-13005



INSET TABLE1:

Design Case: Phase 1A Finished Levels of 20.1mAOD (Warehouse & Port Area)	Material Cut								Material Import	
	Peat	MGGW	MGCCW	MGDCS	ALLCS	ALLSG/GLSG	GLCL	SST	Volume of Aggregate	Volume of Bulk Fill
Total Volume of Excavated Material Type	30985	3211	10015	90761	2474	0	0	0	38,520	169,932
Typical Characteristics of Excavated Material Type	Very Soft to Soft Black & Brown Sandy Fibrous Peat (w 100-1000%)	Medium dense to dense black, brown and grey, locally clayey, silty, fine to coarse sand with a little to much, f-c gravel, cobbles and boulders including brick, stone, plastic, ash, concrete, timber, metal, glass, concrete (w typically 17-25%) intermixed with firm black brown clay with entrained brick, glass and metal gravel to cobble size fragments	Very loose to loose, red to grey, locally silty, fine to coarse sand with a little f-c gravel and cobbles of very weakly to weakly cemented sandstone (w 15-20%)	Very soft to soft, dark grey to black, slightly sandyto very sandy, clayey silt with occassional to some organic material (w typically 50-100%, very high-extremely high plasticity (IL 50-100%, Ip 10-45%)	Very soft to firm grey very silty clay to clayey silt with occassional rootlets (w typically 20-40%, plasticity data classifies as typically low-high plasticity silt (IL = 30-60%, Ip = 5-20%)	Loose to medium dense becoming medium dense to dense <10mbgl, grey slightly silty to very silty fine and medium sand, grading into gravelly medium SAND and sandy f-c GRAVEL	Firm to stiff, brown, mottled orange, slightly sandy, slightly gravelly CLAY with occasional interbeds of sand (w=10-20%, plasticity = typically low to intermediate (IL = 25-35%, Ip = 5-20%))	Extremely weak to very weak reddish brown, fine grained SANDSTONE. Very close to medium spaced sub-horizontal bedding.	Class 6 materials for capping, piling platforms, drainage - Assume no suitable site won available.	Class 1 & 2 materials
% Acceptability for Immediate re-use as engineering fill	0	0	80	0	0	50	0	0		
% Rendered U1A for re-use as engineering fill following ex-situ treatment	0	60	20	50	50	40	80	100		
% Rendered U1A material for use in Landscape bunds	100	30	0	30	40	10	20	0		
% U1A & U1B following rendering (non-hazardous) for off-site disposal	0	8	0	18	10	0	0	0		
% U2 for off-site disposal (assuming hazardous)	0	2	0	2	0	0	0	0		
Volume acceptable for immediate re-use as engineering fill (m3)	0	0	8012	0	0	0	0	0		
Volume of U1A material to be rendered by ex-situ treatment for re-use as engineering fill (m3)	0	1926.6	2003	45380.5	1237	0	0	0		
Volume of U1A & U1B material to be rendered by ex-situ treatment for re-use as landscape fill (m3)	30985	963.3	0	27228.3	989.6	0	0	0		
Volume of U1A & U1B for off-site disposal (non-hazardous)	0	256.88	0	16336.98	247.4	0	0	0		
Volume U2 for off-site disposal (hazardous)	0	64.22	0	1815.22	0	0	0	0		
Total Site Won Material for Re-use as engineered fill on site (m3)				8012						
Total Site Won Material for Re-use as engineered fill on site following ex-situ treatment (m3)				50547.1						
Total Site Won Engineering Fill (m3)				58559.1						
Total Site Won Material for Re-use as landscape fill on site (m3)				60166.2						
Total U1A & U1B for off-site disposal (m3)				16841.26						
Total U2 for off-site disposal (m3)				1879.44						
Requirement for Bulk Fill (m3)					169932					
Total Aggregate Import Requirement (m3)					38520					
Surplus (+'ve) / Deficit (-'ve) of Engineered Bulk Fill Material (m3)						-111372.9				
Allow for 2m high landscaping bund 20m wide along the northern boundary of Port Area + Railway Extension (m3)					57000					

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Earthworks Cut-Fill Balance Phase 1A.dwg Dec 12, 2013 - 5:22PM cla66821

Notes

1. All dimensions in millimetres unless otherwise stated
2. Due to the large site area the Contract shall aim to minimise disposal of arisings and importation of materials. The Contractor should seek to utilise The Definition of Waste: Development Industry Code of Practice Version 2 (2011), to minimise waste.
3. This Drawing is for information only and intends to show indicative areas of cut/fill for the Phase 1A Development assuming finalised surface levels of 20.1m AOD for the Port area, with other areas grading to existing levels. Assumptions relating to material suitability for re-use and application of ex-situ treatments to render material useful are inherent in the volumes quoted in Inset Table 1. No contractual reliance can be placed on these volumes.
4. This plan details proposed cut/fill lines for the Phase 1A works south of the A57. It excludes rail package earthworks (north of the A57) and landscaping proposals. The location of these missing earthwork elements are detailed on the plan.
5. Ground information data to inform the earthworks balance may be found within the Port Salford Ground Investigation Report: MMD-293621-G-REP-001 Cross-sectional drawings: MMD-G-DR-00-XX-14024 - 14027 detail ground conditions across the site.
6. Inset Table 1 details the material volumes broken down per stratum/material type, inclusive of the missing earthworks elements discussed in Note 4.

Key to symbols

CUT CONTOUR OF LEVEL DIFFERENCE
FILL CONTOUR OF LEVEL DIFFERENCE
Future Warehouse Development Area
Container Storage Area
Port Hardstanding Area

Based on :
20.1m AOD finished levels
Carriageway construction depth of 920mm
PQQ construction depth of 1415mm
Topsoil strip of 300mm

Reference drawings

For details of sections refer to drawing ref.

MMD-293621-G-DR-00-XX_14024 - 14027: Port Salford Geological Cross - Section
MMD-293621-Z-DR-00-XX_12086: Port Salford Phase 1C: General Arrangement

Rev	Date	Drawn	Description	Ch'k'd	App'd
00	10/12/13	AJE	Tender Issue	NH	CH
P1	29/10/13	JW	Preliminary Issue	MB	LE

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Trans-European Transport Network (TEN-T)

Client
THE PEEL GROUP

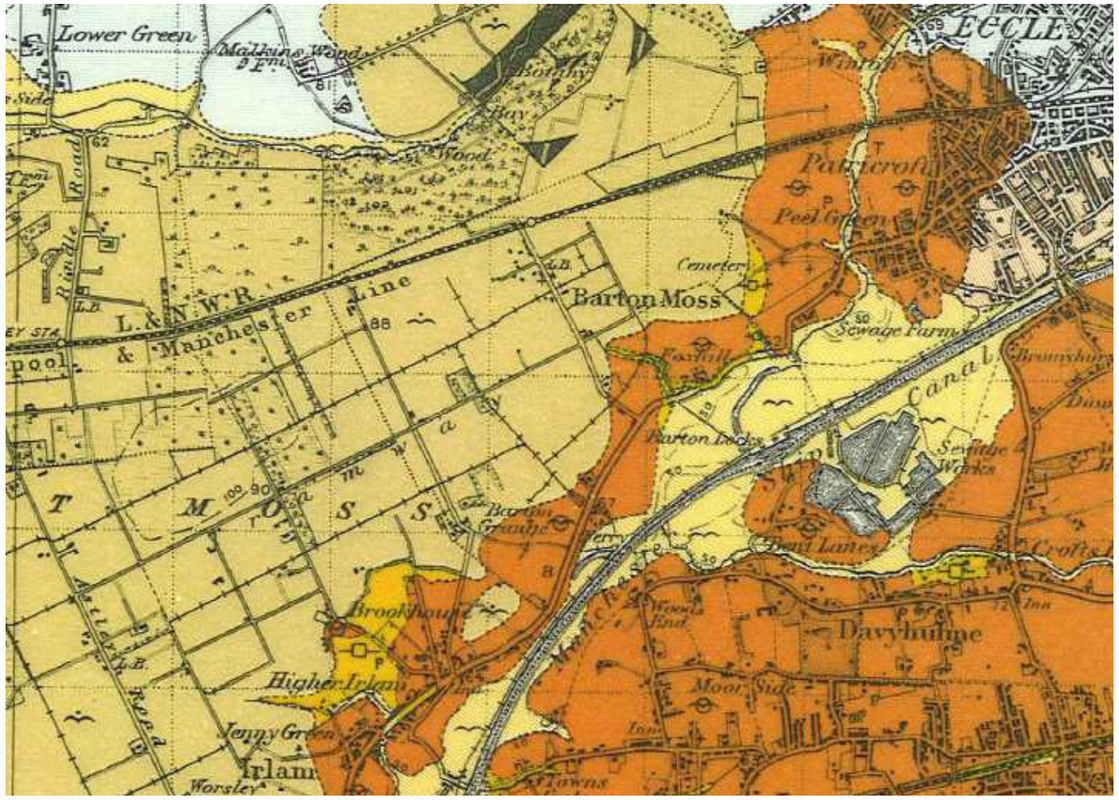
Title
Port Salford
Earthworks Cut-Fill Balance Phase 1A

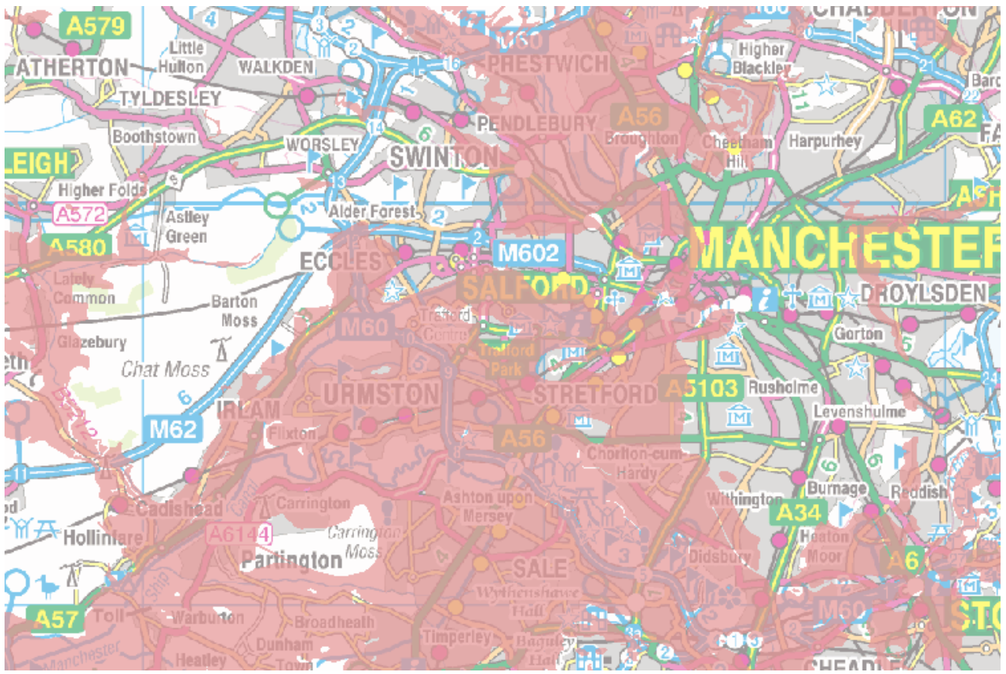
Designed	P. Whittaker	Eng check	-
Drawn	P. Whittaker	Coordination	-
Dwg check	M Basting	Approved	L Edmonds

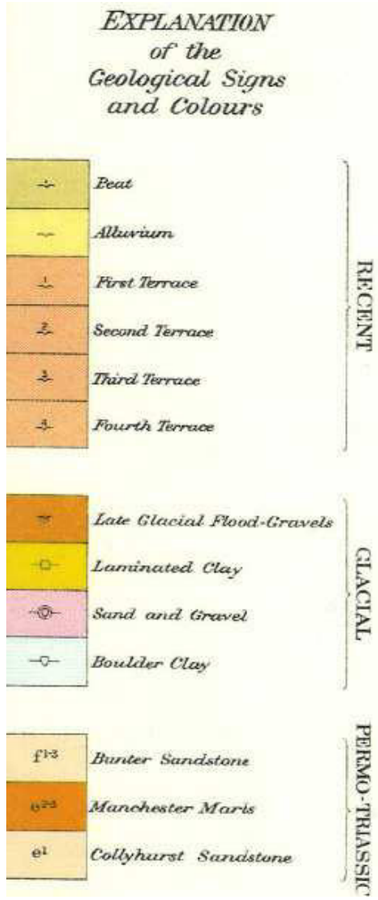
Scale at A1: 1:2500 | Status: TEN | Rev: 00

Drawing Number
MMD-293621-G-DR-00-XX-13006

Appendix C. Published Geological & Hydrogeological Data & Desk Study Extracts



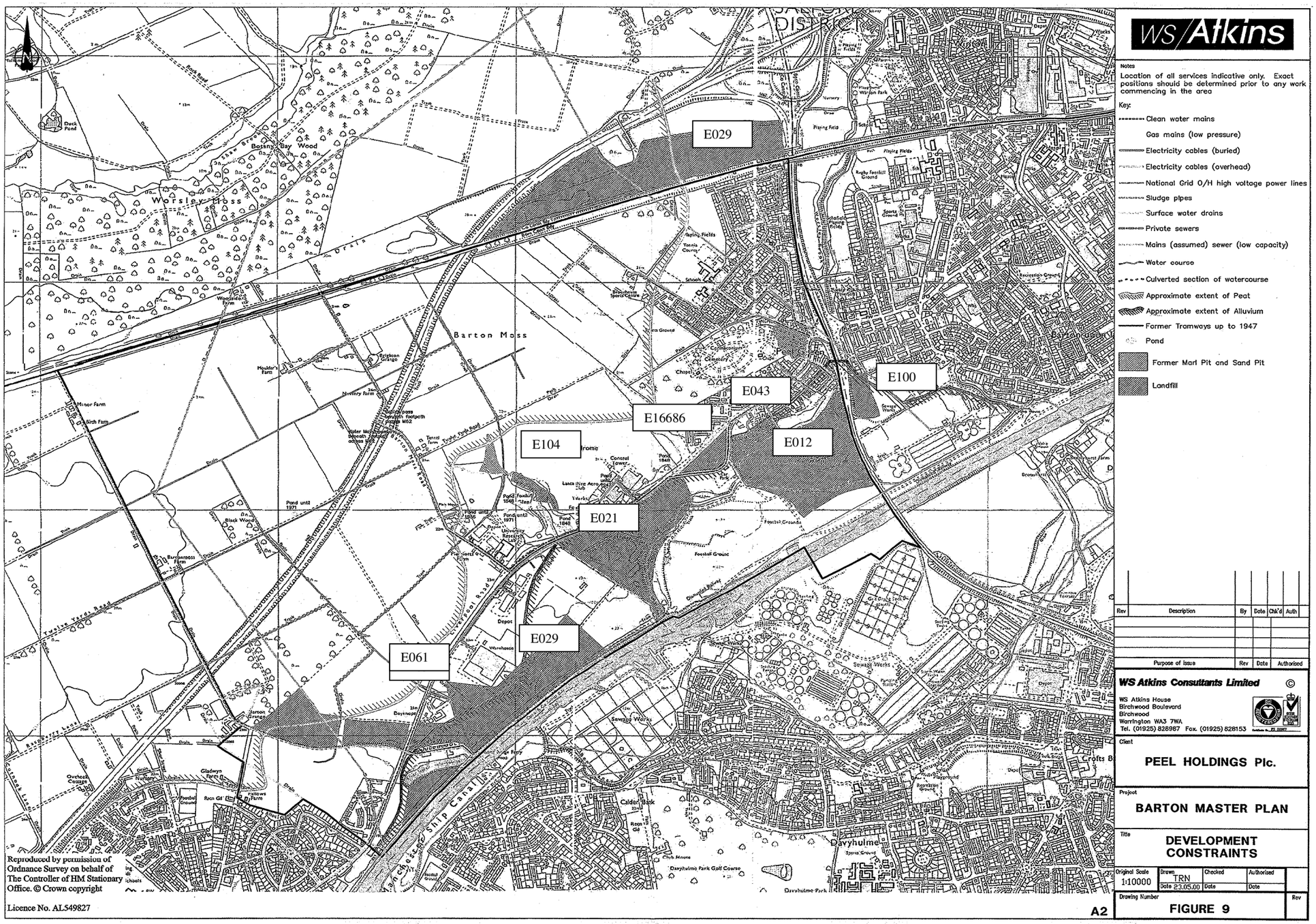




Published BGS Drift Geology Map

Environment Agency Groundwater Classification

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



WS/Atkins

Notes
Location of all services indicative only. Exact positions should be determined prior to any work commencing in the area

Key:
- Clean water mains
- Gas mains (low pressure)
- Electricity cables (buried)
- Electricity cables (overhead)
- National Grid O/H high voltage power lines
- Sludge pipes
- Surface water drains
- Private sewers
- Mains (assumed) sewer (low capacity)
- Water course
- Culverted section of watercourse
- Approximate extent of Peat
- Approximate extent of Alluvium
- Former Tramways up to 1947
- Pond
- Former Marl Pit and Sand Pit
- Landfill

Rev	Description	By	Date	Chk'd	Auth

Purpose of issue	Rev	Date	Authorised

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Client
PEEL HOLDINGS Plc.

Project
BARTON MASTER PLAN

Title
DEVELOPMENT CONSTRAINTS

Original Scale	Drawn	Checked	Authorised
1:10000	TRN		
	Date 23.05.00	Date	Date

Drawing Number
FIGURE 9

Rev