

Phase I & II Geo-Environmental Assessment

Station Square, Rochdale

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This report dated 04 April 2025 has been prepared for **Rochdale Borough Council** (the “Client”) in accordance with the terms and conditions of appointment (the “Appointment”) between the Client and **Arcadis Consulting (UK) Limited** (“Arcadis”) for the purposes specified in the Appointment. For avoidance of doubt, no other person(s) may use or rely upon this report or its contents, and Arcadis accepts no responsibility for any such use or reliance thereon by any other third party.

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1 Introduction

1.1 Appointment

Arcadis Consulting (UK) Ltd (Arcadis) has been commissioned by Rochdale Borough Council (RBC, 'the Client') to complete a combined Phase 1 and 2 Geo-Environmental Assessment for the redevelopment of Rochdale Station Square, Greater Manchester.

1.2 Proposed Development

The development was granted planning permission in July 2023 (22/01551/FUL) and involves the construction of public realm including a new public square, relocation of the existing taxi rank and car parking spaces, and associated works. The general arrangement and illustrative masterplans are included in Appendix A.

1.3 Existing Information

No historical ground investigation information has been provided to Arcadis for review, and a search of the online planning portal has not identified historical intrusive investigations within the site boundary.

A search of British Geological Survey (BGS) records using GeoIndex (Ref 1) identifies several confidential historical boreholes within 150m of the site, including a location onsite at Lower Tweedale Street. Logs from these boreholes are not available for review and consequently are not included in this assessment.

1.4 Objectives

The Phase 1 and 2 Geo-Environmental Assessment was commissioned to support discharge of planning condition 13 relating to land contamination.

The objectives of the Phase 1 desk-based assessment are to:

- Establish the environmental setting of the site including the geology, hydrology, and hydrogeology.
- Evaluate the environmental sensitivity of the site with regards to ecology, archaeology, previous mining/quarrying activities, ground subsidence etc.
- Assess the likely environmental condition of the site based on its current and historical use, and that of the immediate surrounding area.
- Develop a Conceptual Site Model (CSM) to produce a preliminary risk assessment identifying and qualitatively assessing risks to potential Human Health and Controlled Water receptors.

Following on from the desk-based study, a Phase 2 intrusive ground investigation has been scoped and completed to fulfil the following objectives:

- To investigate the extent and nature of any ground contamination and environmental conditions related to any historical or current on-site and off-site land-uses identified in the Phase I Conceptual Site Model (CSM).
- To provide sufficient information to undertake a Tier 2 Generic Quantitative Risk Assessment (GQRA).
- To refine the CSM and the environmental risk of the site to potential receptors identified during the preliminary risk assessment.
- To prepare an interpretive report detailing the above with recommendations for remediation measures (if required) and any other further work.

1.5 Scope of Works

To achieve the objectives the following scope of desk-based work was defined and undertaken:

- Review and evaluate the published and readily available information concerning the site including:
 - Information available on the local planning portal for the site and immediate surrounds.
 - Public register and environmental information – provided by Groundsure (Appendix B).
 - Historical Ordnance Survey maps – provided by Groundsure (Appendix B).
 - British Geological Survey (BGS) published maps and GeoIndex Online Viewer (Ref 1) including relevant archive borehole records.
 - The UK Radon Map (Ref 2).
 - The Mining Remediation Authority (MRA) online interactive map viewer (Ref 3).
 - The Environment Agency (EA) Catchment Data Explorer (Ref 4).
 - EA Flood Risk Maps for England (Ref 5).
 - EA Data provided on the Multi-Agency Geographical Information for the Countryside (MAGIC) website (Ref 6).
 - Publicly available Google Earth satellite imagery (Ref 7).
- Obtain a preliminary Unexploded Ordnance (UXO) screening assessment, to provide an indication on the likelihood of UXO being present beneath the site (Appendix C).
- Develop a CSM and prepare a Preliminary Risk Assessment in line with UK regulatory guidance.
- Outline any potential contamination risks associated with the ground conditions at the site.

Subsequently, a scope of intrusive ground investigation was completed alongside the pavement survey works, whereby four locations were cored to enable the underlying soils to be hand excavated to a depth of 1m bgl (metres below ground level). On excavation, the soils were logged, and samples collected for chemical laboratory analysis to provide information on the ground conditions at the site.

This report presents a review of the desk study sources and findings of the intrusive investigation, including a geo-environmental assessment based on the interpretation of the encountered ground conditions and Tier 2 GQRA completed using the results of the soil sampling analysis.

1.6 Reliability of Information / Limitations

Arcadis warrants that the services performed were conducted in a competent and professional manner in accordance with sound consulting practices and procedures.

Arcadis cannot warrant the actual property conditions described in this report beyond matters amenable to confirmation within the limits of this report.

Arcadis' liability, pursuant to the terms of the appointment of Arcadis by RBC, is strictly limited to the work undertaken and the matters contained and specifically referred to in this report.

A copy of Arcadis' Study Limitations is presented in Section 13.

1.7 Reliance

It is understood that the current report will be prepared for the use of RBC. The contents of this report may not be used or relied upon by any person other than this party without the express written consent and authorisation of Arcadis.

PHASE 1 PRELIMINARY RISK ASSESSMENT

2 Site Setting

2.1 Site Location

The site is located within Rochdale Town Centre in Greater Manchester. The site forms part of the larger multi-modal transport hub, whereby the offsite Northern Rail-operated heavy rail station on the Calder Valley Main Line (also previously known as the Caldervale Line) adjoins with the onsite tram / light rail stop on the Metrolink's Oldham and Rochdale Line. The approximate centre of the site is located at OS Grid Reference SD 89853 12676 (E 389853, N 412676) and the nearest postcode is OL11 1DR. The site location is presented in Figure 2-1 below.

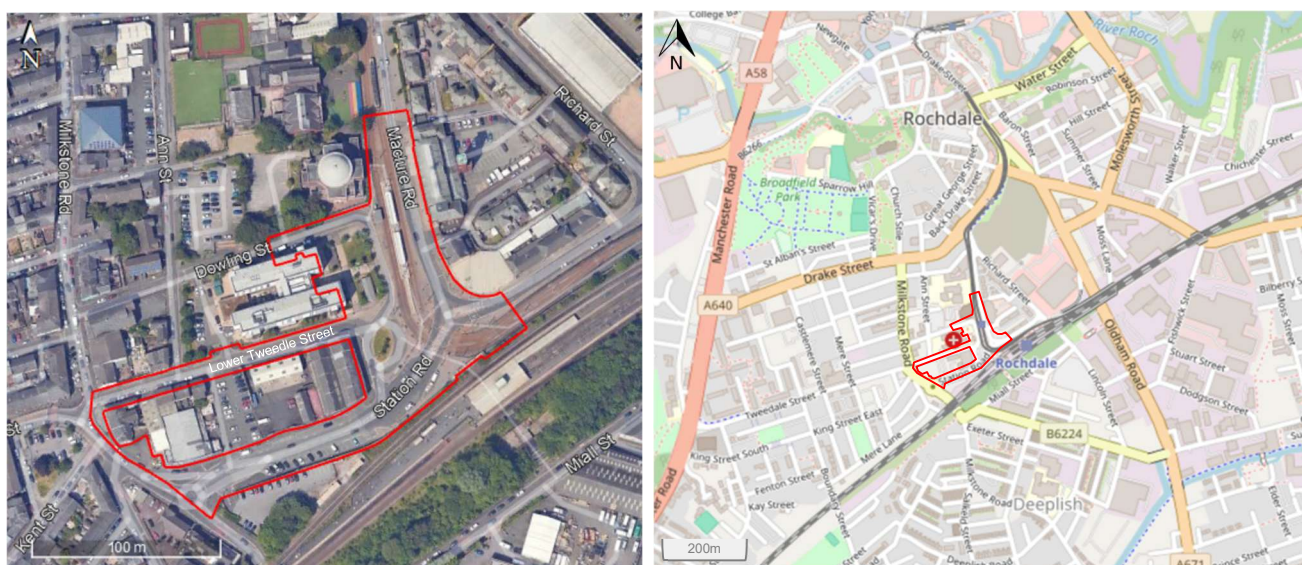


Figure 2-1: Site Location Plan © Google (Ref 7) and OpenStreetMap (Ref 8)

2.2 Site Description

The site covers approximately 1.38 hectares (ha) of land occupied by tram / light rail and road infrastructure of Maclure Road, Dowling Street, Lower Tweedle Street and Station Road. As shown by recent satellite imagery available on Google Earth (Figure 2-1), ground cover predominately comprises hardstanding, with limited areas of soft landscaping. Ground elevation across the site is relatively consistent at approximately 140m AOD (metres above ordnance datum), with a platform access ramp at the Manchester Metrolink Rochdale Station.

2.3 Surrounding Land uses

The site is located in a built-up area comprising transport infrastructure and mixed residential, commercial and industrial development with the following adjacent land uses:

- North – Predominantly commercial land use with some residential properties. River Roch is located approximately 520m to the north.
- East – Industrial parks, with residential housing beyond.
- South – Rochdale Railway Station and Caldervale Railway Line, with residential housing beyond and Rochdale Canal approximately 450m to the south.

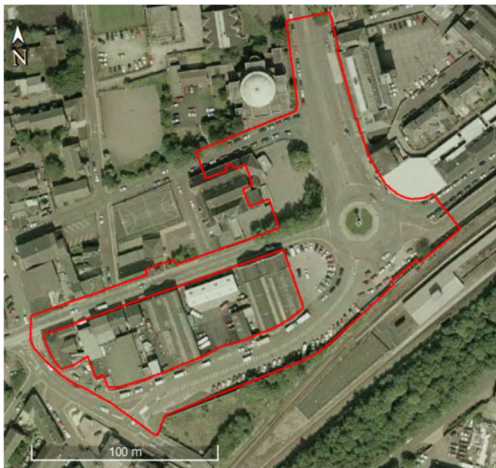
- West – Commercial and residential properties.

3 Site History

3.1 On-site History

A review of historical mapping dated from 1849 to 2024, presented within the Groundsure Report (Appendix B) and recent Google Earth imagery (Ref 7), has been completed and a summary of the site history is provided in Table 3-1 below. The review does not present a complete history of the site but highlights historical aspects which may have led to contaminative or other notable impacts.

Table 3-1: On-Site History

Year	Details	Potential Source of Contamination
1849	The site comprises open land, with some minor structures and landscaping mapped in the north.	Made Ground
1891 - 1892	The previous structures are absent, and the site (and surrounding area) has undergone redevelopment, with the construction of the Rochdale Station ticket office (to serve offsite railway line) and road infrastructure including existing Dowling Street, Lower Tweedle Street and Station Road. An additional road identified as 'Pitt Street' is partly constructed along the eastern site boundary.	Made Ground Road infrastructure
1910	Pitt Street is absent and the current Maclure Road has been constructed in its place. In addition, a tramway is shown crossing the centre of the site, constructed along Lower Tweedle Street, running east to west. A school building partly extends into the site area.	Made Ground Road and tramway infrastructure
1930	Expansion of the existing tramway infrastructure, with a second route constructed along Maclure Road, running north to south.	
1957 - 2010	All tramway infrastructure has been removed, and new road infrastructure has been constructed in its place, including a roundabout and car park, as shown on Google Earth imagery dated 2005.  Figure 3-1: Aerial Imagery January 2005 © Google (Ref 7)	Made Ground Road infrastructure
2013 - present	According to online sources the Metrolink stop at Rochdale Railway Station opened to passengers in 2013 and review of publicly available satellite imagery (Ref 7) indicates minimal change to the site layout to the present day.	Made Ground Road and tramway infrastructure

3.2 Potentially Contaminative History of the Surrounding Area

Based on historical maps dated from 1847 to 2024 provided by Groundsure (Appendix B) and Google imagery (Ref 7), the pertinent and potentially contaminative history of the area surrounding the site is summarised below in Table 3-2.

Table 3-2: Off-Site History

Year	Details	Potential Source of Contamination
1847	The site is surrounded by industrial and agricultural land, residential housing, and railway infrastructure. The Calder Valley Main Line branch of the Lancashire and Yorkshire Railway is located roughly 50m south of the site. The Rochdale Branch Canal is shown approximately 200m east, comprising various wharf banked mills. Rochdale Town Centre is shown to the north, with the River Roch approximately 520m north of the site. A large estate, covering approximately 10 hectares (ha) and identified as 'Castlemere' is shown to the immediate west of the site, comprising a house and grounds (woodland and a terrace).	Made Ground Rail, road and canal infrastructure
1890 - 1910	Castlemere Estate is no longer shown, and the area is occupied by residential housing. Expansion of the Calder Valley Main Line, with multiple railway tracks shown, immediately adjacent to the southern site boundary. Railway works and goods sheds associated with the Calder Valley Main Line are identified between 300 and 500m east. Various industrial works have been constructed in the surrounding area, including iron works, leather works, wool cotton and card mills located between 100 to 500m south.	Made Ground Rail infrastructure Industrial works
1928	Industrial works to the southwest of the site, now include engineering and empress, with a carriage shed beyond.	Made Ground Industrial works
1957	A fire station is identified to the immediate east off Maclure Road. A garage and works are labelled immediately offsite between Lower Tweedale Street and Station Road.	Fire Station Garage Industrial Works
1975	Rochdale Branch Canal approximately 200m east has been infilled.	Made Ground
1992 - 2003	Several garages, works and a depot are now labelled immediately offsite between Lower Tweedale Street and Station Road.	Garage Industrial Works Depot
2024	The adjacent fire station is now labelled museum.	-

3.3 Site History Summary

The earliest available OS maps show the site was initially open land, with some small structures present. From the late 1800's, redevelopment of the site and surrounding area began, with the construction of road and tramway infrastructure onsite. Expansion of the tramway system continued until the mid-1900's, before it was removed and replaced by road infrastructure. It was not until 2013 that the existing tramway and Metrolink stop were constructed on site, as part of Phase 3 of the Metrolink's expansion (Ref 9). Review of publicly available satellite imagery (Ref 7) indicates minimal change to the site layout from 2013 to present.

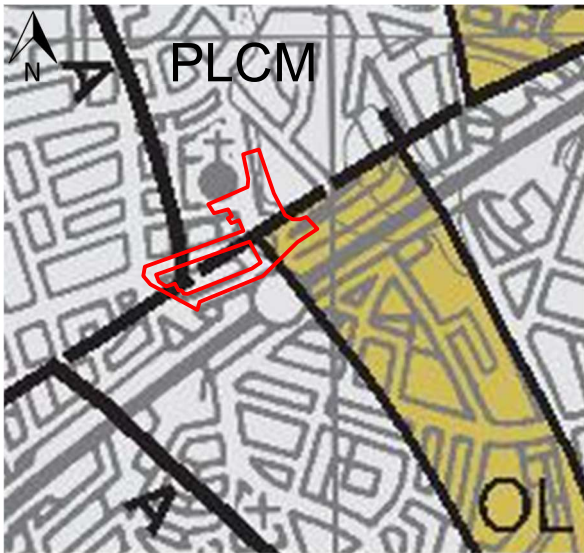
The surrounding land use has historically comprised industrial and agricultural land, residential housing, railways, tramways and canals, with several garages, works and a fire station located adjacent to the site.

4 Environmental Setting

4.1 Geology

The regional geological information pertaining to the site was gained from a review of the BGS 1:50,000 scale maps (Manchester, Sheet 85, 2010/2011), BGS online GeoIndex website (Ref 1), archive borehole records and a site-specific Groundsure Insight Report (Appendix B).

Table 4-1: Summary of Published Geology

Unit	Published Information
Artificial	The BGS maps do not indicate the presence of Made Ground, however considering the site history, Made Ground is likely to be present. <i>No available archive borehole records located onsite.</i>
Superficial	Glaciofluvial Deposits (GFDU) are mapped across the entire site, predominantly comprising sand and gravel, locally with lenses of silt, clay or organic material. The BGS Buried Valleys dataset indicates the presence of a buried valley beneath the Rochdale area. The modelled thickness beneath the site is 10 – 20m. <i>Archive borehole records within 500m of the site were generally advanced to <10-20m bgl and identified several metres of loose to medium dense sand and gravel, with soft to stiff interbedded clay layers.</i>
Bedrock	The site is underlain by the Pennine Lower Coal Measures Formation (PLCM), comprising interbedded mudstone, siltstone and sandstone, with coal seams. BGS maps indicate sandstone of the Old Lawrence Rock (OL) to subcrop in the southeastern corner of the site. In addition, the Arley coal seam, is indicated to subcrop through the western area of the site, orientated north to south. These features are shown on Figure 4-1 below. <i>Archive boreholes within a 500m radius of the site did not advance into bedrock.</i>  The map shows a grey area labeled 'PLCM' (Pennine Lower Coal Measures Formation) and a yellow/green area labeled 'OL' (Old Lawrence Rock Sandstone). A thick solid line with the letter 'A' indicates the Arley coal seam. A dashed line represents a geological fault, and a thin solid line represents a geological boundary. A north arrow is in the top left corner. <i>Figure 4-1: Map of Bedrock Geology. Extract of BGS 1:50,000 Series, Manchester, Sheet 85, 2010.</i> <i>Grey – Pennine Lower Coal Measures Formation (PLCM). Yellow/green – Old Lawrence Rock Sandstone (OL). Thick solid line with letter 'A' annotation - Arley coal seam. Dashed line – geological fault with crossmark on downthrown side. Thin solid line – geological boundary.</i>
Faults	The BGS bedrock geology map, extract presented as Figure 4-1, indicates a fault crosses the central portion of the site, trending northeast to southwest and downthrowing the geology to the northwest.

4.2 Radon Affected Areas

The Radon Potential data classifies areas on their likelihood of a property having a Radon Level at or above the action level in Britain.

Review of the Indicative Radon Map of the UK (Ref 2) shows that the maximum radon potential is indicated to be 1-3 %.

The Groundsure report, accurate to 50m, confirms maximum radon potential of between 1-3% in the eastern portion of the site, with the majority of the site classified as having the lowest band of radon potential at less than 1%.

4.3 Ground Stability Issues

The Groundsure report (Appendix B) indicates the following with regards to ground stability issues:

- Negligible risk from shrink-swell clays.
- Negligible risk from compressible deposits.
- Negligible risk from ground dissolution of soluble rocks.
- Very low risk from running sands.
- Very low risk from collapsible deposits.
- Very low risk from landslides.

4.4 Mining Activity

A review of the Mining Remediation Authority (MRA) interactive web map viewer (Ref 3) confirms that the site is located within a Coal Mining Reporting Area. The western edge of the site is located within a Development High Risk Area, which appears to be associated with potential underground working of the Arley coal seam.

No mine entries are shown within the vicinity of the site, and no underground or surface coal mine workings are recorded beneath the site.

Review of the mining, ground workings and ground cavities chapters of the Groundsure Report (Appendix B) confirm the following:

- No mining activities related to tin / clay, or brine / gypsum extraction records have been identified on site.
- No natural cavities or historical mineral planning areas have been recorded within 500m.
- No underground workings, non-coal mining records or mining cavities have been recorded within 1km.

Based on the review of available information, mining risk beneath the site is considered to be low. The risk from potential unrecorded workings of the Arley seam is likely to be low given the depth to bedrock indicated by local BGS borehole records and the buried valley dataset to be <10-20m.

4.5 Hydrogeology and Groundwater Vulnerability

4.5.1 Aquifer Classification

The EA classifies the superficial Glaciofluvial Deposits and Pennine Lower Coal Measures Formation underlying the site as Secondary A Aquifers, characterised by permeable layers capable of supporting water supplies at a local scale, and in some cases forming an important source of base flow to rivers.

4.5.2 Groundwater Vulnerability

Regarding groundwater vulnerability, the onsite soils are classified as having a high leaching potential, with an infiltration value of >70%. Consequently, the highly permeable superficial sand and gravel deposits are characterised as having a high vulnerability, and the underlying bedrock geology, with a secondary flow mechanism governed by fracturing, a low vulnerability.

Moreover, EA Data provided on the Multi-Agency Geographical Information for the Countryside (MAGIC) website indicates that vulnerability of groundwater to a pollutant (discharged at ground level) at the site is classified as 'medium to high'.

The site is located within the Northern Manchester Carboniferous Aquifers groundwater body catchment, classified by the EA as having a poor overall status, with respect to chemical and quantitative ratings (2019) (Ref 4).

4.5.3 Groundwater Abstractions / Discharges

Review of the hydrogeology and current industrial land use chapters of the Groundsure Report (Appendix B) confirm the following:

- No active groundwater abstraction licences onsite or within 2km of the site.
- No potable water abstraction licenses onsite or within 2km of the site.
- No licensed discharges of treated or untreated effluent to controlled waters are recorded onsite or within 500m of the site.

4.5.4 Protection Zones

No groundwater Source Protection Zones (SPZ) or Drinking Water Safeguard zones are mapped onsite, or within 500m of the site.

4.5.5 Groundwater Flooding

Concerning groundwater flooding susceptibility, the Groundsure Report (Appendix B) states that there is moderate risk for groundwater flooding to occur at the surface or enter property situated below ground level (basement / cellars). No historical flood events from groundwater have been recorded by the EA since records began in 1946.

4.5.6 Groundwater Level and Flow Direction

Due to the absence of available ground investigation data at or within the immediate vicinity of the site, groundwater elevation and flow direction are undetermined. The nearest historical BGS boreholes in the wider surrounding area indicate the absence of a shallow groundwater body. Boreholes SD81SE561 and SD81SE562 approximately 300m northwest did not encounter groundwater to their drilled depths of 9.0 and 6.4m bgl respectively. Boreholes SD914SW191 and SD91SW192 approximately 290m east recorded groundwater at 8.0m and 7.0m respectively within superficial sand strata.

Nevertheless, regional groundwater flow is anticipated to be in a general northwest direction, towards the River Roch, which flows to the west.

4.6 Hydrogeology

4.6.1 Surface Water Features

There are no surface water features recorded onsite or within 250m of the site. The nearest surface water feature is the Rochdale Canal, located approximately 450m southeast (at its closest point).

The River Roch is located roughly 520m north (at its closest point) and the site is located within the Roch (Source to Spodden) surface water body catchment, classified by the EA as having an overall moderate status, comprising a moderate ecological rating and a fail chemical rating (2019) (Ref 4).

4.6.2 Surface Water Flooding

Regarding surface water flood risk, the Groundsure Report (Appendix B) and the EA Flood Risk Maps for England (Ref 4) provide the following information:

- The site does not lie within 50m of an area determined to be at risk of river or coastal flooding.
- The site is in Flood Zone 1 (less than 0.1% chance of flooding from rivers or the sea) and offsite areas which are classified as Flood Zones 2 and 3 are located over 50m from site.
- No historical flood events have been recorded by the EA since records began in 1946.
- Moderate risk of surface water flooding is indicated in localised areas on site from extreme rainfall events (1 in 100 years, 0.3m – 1.0m). However, negligible to no risk is determined for the majority of the site.

4.6.3 Surface Water Abstractions / Discharges

Review of the hydrogeology and current industrial land use chapters of the Groundsure Report (Appendix B) confirm the following:

- No active surface water abstraction licences onsite or within 2km of the site.
- No licensed discharges of treated or untreated effluent to controlled waters are recorded onsite or within 500m of the site.
- No discharges of Special Category Effluents to public sewerage systems onsite or within 500m of the site.
- No discharges of specified substances under the Environmental Protection Regulations 1991 to surface waters onsite or within 500m of the site.

4.6.4 Dangerous Substances

There are no records for the discharge of a List 1 or 2 dangerous substance onsite or within 500m of the site.

4.6.5 Pollution Incidents

The Groundsure report (Appendix B) indicates two substantiated pollution incidents within 500m of the site boundary. These are summarised below:

- An incident located 138m northwest of the site from August 2001 relating to the pollution of commercial and household waste. The incident was considered to have a minor impact on land and air quality (category 3) and no impact to water quality (category 4).
- An incident located 416m east of the site from September 2001 relating to construction and demolition materials and household waste. The incident was assessed to have a minor impact on land quality (category 3) and no impact on water or air quality (category 4).

4.7 Landfills and Waste Management Activities

The following information has been collated on review of the waste and landfill chapter of the Groundsure report (Appendix B):

- No active or recent landfill sites within 500m of the site.
- One historical landfill within 500m of the site; located 307m east and formerly operated by the Rochdale Timber Company between 1987 and 1990 for inert, industrial and commercial waste.
- One licensed waste site within 500m of the site; located 205m east and operated by Rochdale Auto Spares for metal recycling.
- No onsite waste exemption records, however, there are thirty off-site records within 500m of the site boundary. The closest record is located 95m east of the site relating to the storage of non-agricultural waste. Other records within 250m of the site relate to the treatment and use of waste, most frequently linked to the repair / refurbishment of Waste Electrical and Electronic Equipment (WEEE).

4.8 Current Industrial Land Use

The Groundsure report (Appendix B) identifies the onsite tramway infrastructure as a potentially contaminative industrial land use. An additional forty-eight potentially contaminative industrial sites are reported within 250m. These relate to a variety of activities including electrical infrastructure (substations), railway infrastructure (Calder Valley Main Line), vehicle repair / testing / servicing, commercial units, business parks, industrial estates and unspecified works or factories. No historical tanks are identified to have been present onsite.

One petrol filling station is recorded within 500m of the site, located 495m northeast. The Groundsure Report (Appendix B) identifies the station as obsolete and satellite imagery (Ref 7) shows the station to have been demolished.

The site is not designated as Contaminated Land under Part 2a of the Environmental Protection Act 1990.

The site is not a registered Control of Major Accident Hazard site (COMAH).

Nine records of licenced pollutant releases (Part A(2)/B) have been identified within 500m of the site, two of which are located within 250m and relate to the respraying of road vehicles; a historical permit at Henlys Ford of Rochdale (116m northeast) and a current permit at Mellor Coachcraft (125m southeast).

4.9 Ecological Considerations

4.9.1 Ecologically sensitive areas

There are no ecologically sensitive sites (e.g. Special Protection Areas (SPA), Special Areas of Conservation (SAC) or nature reserves) at the site, or within 250m of the site boundary.

4.9.2 Environmentally Sensitive Areas

There are no environmentally sensitive land uses (e.g. Nitrate Vulnerable Zones / Sensitive Areas, Designated Ancient Woodland, Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSI) or areas of adopted green belt) at the site, or within 250m of the site boundary.

4.9.3 Visual and Cultural Designations

Maclure Road located onsite is a designated conservation area. In addition, the Roman Catholic Church of St John the Baptist, located 18m north and accessed from Dowling Street is a designated listed building.

No other visual or cultural designations (e.g., world heritage sites, listed buildings, registered parks and gardens) are located onsite or within the immediate vicinity (100m).

4.10 Unexploded Ordnance Screening Assessment

Zetica Unexploded Ordnance (UXO) Risk mapping indicates that the site is within an area of 'low' bomb risk, characterised as having 15 bombs per 1000 acre or less. A copy of the Risk Map is presented in Appendix C.

A preliminary UXO pre desk study assessment (PDSA) was requested, and this indicates there were several World War I and II strategic targets within 5km of the site including:

- Docks, wharves, and warehouses on the River Roch.
- Transport infrastructure and public utilities.
- Industries important to the war effort, including munitions factories and engineering and metal works.
- Military barracks, camps, depots, and training areas.
- Anti-invasion defences.

During World War II the site was located in the County Borough of Rochdale, which officially recorded high explosive bombs with a bombing density of 0.4 bombs per 405 ha. However, there are no available records to indicate the site was bombed. The PDSA concludes that a detailed desk study, whilst always prudent, is not considered essential in this instance. A copy of the PDSA is presented in Appendix C.

5 Preliminary Conceptual Site Model

This section summarises the findings of this desk-based assessment and site reconnaissance in the form of a Conceptual Site model (CSM).

The CSM provides a qualitative evaluation of potentially active “contaminant linkages” at the site; these being plausible scenarios whereby a contamination source is connected to a possible receptor by one or more pathways:

- Potential sources of contamination: these include any actual or potentially contaminating materials and activities, located either on or near the site.
- Potential pathways for contamination migration: these comprise the routes or mechanisms by which contaminants may migrate from the source to the receptor including environmental migration pathways and human health exposure pathways.
- Potential receptors of contamination including present and/or future land users, ecological systems, water resources and property.

5.1 Potential Contamination Sources

Potential sources of contamination are summarised below.

Table 5-1: Potential Sources of Contamination

Source	Potential Contaminants of Concern
On-site	
Made Ground – associated with historical phases of development and road infrastructure.	Asbestos, metals, Polycyclic Aromatic Hydrocarbons (PAH), hydrocarbons, Benzene, Toluene, Ethylbenzene, Xylene (BTEX), inorganics. Ground Gas – potentially elevated concentrations of methane, carbon dioxide and hydrogen sulphide.
Tramway – trams started to become electrified in the late 19th and early 20th centuries and historical mapping indicates their presence onsite between 1910 – 1975 and 2013 – present day.	Metals, asbestos, lubricating oils, hydrocarbons, PAH.
Vehicle Parking – associated with potential spills / leaks from vehicle parking or maintenance activities.	Hydrocarbons, lubricants, volatile and semi-volatile organic compounds (VOCs and SVOCs).
Off-site	
Railway Land – historical and existing infrastructure of the Calder Valley Main Line including tracks, good and carriage sheds and works.	Lubricating oils, hydrocarbons, PAH, solvents, sulphate, metals, herbicides, pesticides.
Fire Station – present on historical maps from 1968. Currently operated as a museum.	Asbestos, Per- and polyfluoroalkyl substances (PFAS), metals, hydrocarbons, BTEX, VOCs and SVOCs.
Industrial Land Uses – historical garages, works, mills etc.	May include metals, inorganic compounds, PAH, solvents, sulphate, fuels and oils, asbestos. Ground gas, vapours, hydrocarbons in dissolved phase in groundwater, vapour risk.

Source	Potential Contaminants of Concern
Made Ground – associated with development and infilling of the Rochdale Branch Canal.	Asbestos, metals, PAH, hydrocarbons, BTEX, inorganics. Ground Gas – potentially elevated concentrations of methane, carbon dioxide and hydrogen sulphide.

5.2 Contamination Pathways

Potential migration pathways are based on the sites perceived current condition and the proposed end use. The site is being considered for a public realm project, including a new public square, relocation of a taxi rank and car parking spaces. Minimal soft landscaping is incorporated into the scheme and includes peripheral ornamental shrub, tree pits and rain garden. For the purpose of the assessment, a Commercial land use is considered the most applicable and has been adopted.

5.2.1 Airborne Migration Pathways

Airborne pathways via which particulate and / or vaporised ground contaminants can migrate to sensitive receptors within soil (air pores), and the above ground atmosphere include:

- The site will predominantly be covered in hardstanding, however small areas of soft standing are anticipated. As such, particulate inhalation due to dust generation is a potentially active pathway. During development works, sub-surface soils will be exposed at the surface and therefore dust and airborne fibres have the potential to be generated and inhaled by site operatives if not appropriately managed or mitigated.
- Vapour inhalation pathways in relation to soil are potentially active irrespective of site status. A vapour inhalation pathway in relation to isolated / perched groundwater may be potentially active if a shallow groundwater body is identified during intrusive investigation.
- The development scheme is for public realm works; there are no permanent enclosed structures proposed. Therefore, migration of permanent ground gases (CO₂, CH₄, O₂), including those generated by potential soil / groundwater contamination, to sensitive receptors and subsequent accumulation in confined spaces leading to asphyxiation and / or explosion is not considered active.

5.2.2 Direct Contact Exposure Pathways

Pathways via which ground contaminants can migrate to human receptors by ingestion and / or absorption:

- Small areas of soft landscaping will be present as part of the development. As such, direct contact pathways in relation to soil are considered active.
- A direct contact pathway in relation to isolated / perched groundwater may potentially be active if a shallow groundwater body is identified during intrusive investigation.
- Direct contact pathways will be active throughout the construction phase when the sub-surface soils are exposed in excavations / earthworks.

5.2.3 Aqueous Migration Pathways

Pathways via which ground contaminants can migrate to controlled water receptors include:

- Leaching of contaminants in the shallow soils is likely to be negligible in areas of hardstanding where infiltration of rainfall would be minimal. However, in areas of soft landscaping infiltration of rainfall may occur prompting the migration of any dissolved phase contamination, as such this pathway is considered potentially active.
- Lateral migration of potential on-site, and off-site contamination onto site, is considered active, as groundwater within the superficial deposits and bedrock is considered likely mobile. However, a shallow

water table is not anticipated, and therefore their viability as a medium for the transport of contamination is likely limited.

5.3 Contamination Receptors

With reference to Part 2a of the Environmental Protection Act (1990), the potential receptors to be considered in any contaminated land scenario can be categorised as follows.

5.3.1 Human Health

Site users (general public) are the primary receptors of concern with regards to contamination risk.

Contamination risks to construction workers are not appraised by chronic (long term) exposure human health risk assessments. There are no appropriate published criteria applicable to the assessment of potential risks to construction workers. The potential risks should be addressed by a site-specific construction workers risk assessment and implementation of appropriate health and safety measures, to adequately mitigate any potential risks. All works should be conducted in accordance with the CDM regulations 2015 or any other relevant guidance. Construction workers are not considered further as human health receptors.

Users of the adjacent buildings (neighbouring residents) could also be at risk. However, for exposure to occur, active cross-boundary migration pathways would be required.

5.3.2 Controlled Waters

Groundwater beneath the site requires consideration and protection. The underlying superficial and bedrock strata are classified as Secondary A Aquifers. There is therefore the potential for mobility both laterally and vertically. Hence, groundwater resources are considered to potentially be at risk from contamination originating on-site or off-site.

There are no surface water features onsite or within 250m of the site. The nearest surface water feature is the Rochdale Canal, located roughly 450m southeast (at its closest point). Considering the distance from site it is considered unlikely for any potential pollutants to reach the watercourse. Therefore, for the purposes of this report surface waters have not been considered as a potential receptor.

5.4 Preliminary Qualitative Risk Assessment

Based on the CSM, the following table presents the plausible Source-Pollutant-Receptor (SPR) linkages that apply to this site, including the likelihood of risk to receptor.

Table 5-2: Preliminary Qualitative Risk Assessment

Potential Receptor	Potential Source	Potential Pathway	Risk
Future End-Users General Public and maintenance workers	On-Site Sources (Made Ground, tramway and vehicle parking)	Soil Leaching / Aqueous Migration Dermal Contact & Ingestion Particulate / Fibre Inhalation Vapour Inhalation	Low - Moderate
	Off-Site Point Sources	Soil Leaching / Aqueous Migration	Low - Moderate

	(Infilled land, railway land, industrial land uses and historical fire station)	Vapour Inhalation	
Controlled Waters Groundwater in underlying Secondary A superficial and bedrock aquifers	Made Ground and On-Site Sources	Soil Leaching / Aqueous Migration	Low - Moderate
Landscaping Future landscaping	Contaminated Soil – phytotoxic contaminants	Vegetation Root Uptake	Moderate (easily mitigated by providing clean planting medium)

*Based on the most appropriate commercial land-use scenario without any mitigation / remediation measures

5.5 Overall Environmental Risk

The site is currently occupied by a tramway and road infrastructure, with limited areas of soft landscaping. Historically the site has been subject to earthworks for the construction and later demolition of an earlier tramway system, which ran along Maclure Road and Lower Tweedle Street. The potential for the underlying soil to be impacted by contamination cannot be discounted at this stage.

Based on the information contained within the preliminary risk assessment, it is considered by Arcadis that the site represents a Low to Moderate risk to potential receptors from potentially contaminated ground.

PHASE 2 GROUND INVESTIGATION

6 Ground Investigation Scope & Methodology

SOCOTEC UK Limited (SOCOTEC) were commissioned to complete a pavement survey predominantly focussed on obtaining cores of the existing road network. A limited intrusive ground investigation involving the advancement of several hand excavated pits was undertaken alongside this, with soil logging and sampling completed by an Arcadis consultant. Works were completed overnight on the 20th – 21st December 2024 to minimize impacts to the road network as much as reasonably practicable.

The scope of works completed at the site which pertain to the investigation of ground contamination included:

- Four hand excavated pits, following pavement coring, to a maximum depth of 1m below ground level (m bgl).
- Logging, photography and sampling of the soil.
- Chemical laboratory analysis of soil samples.

The completed investigation locations are presented in Figure 6-1 below. Locations were designed to provide broad spatial coverage across the site, and target the shallow Made Ground. It should be noted that an additional two locations were planned as part of the original investigation, however, these were removed after consultation with the client.

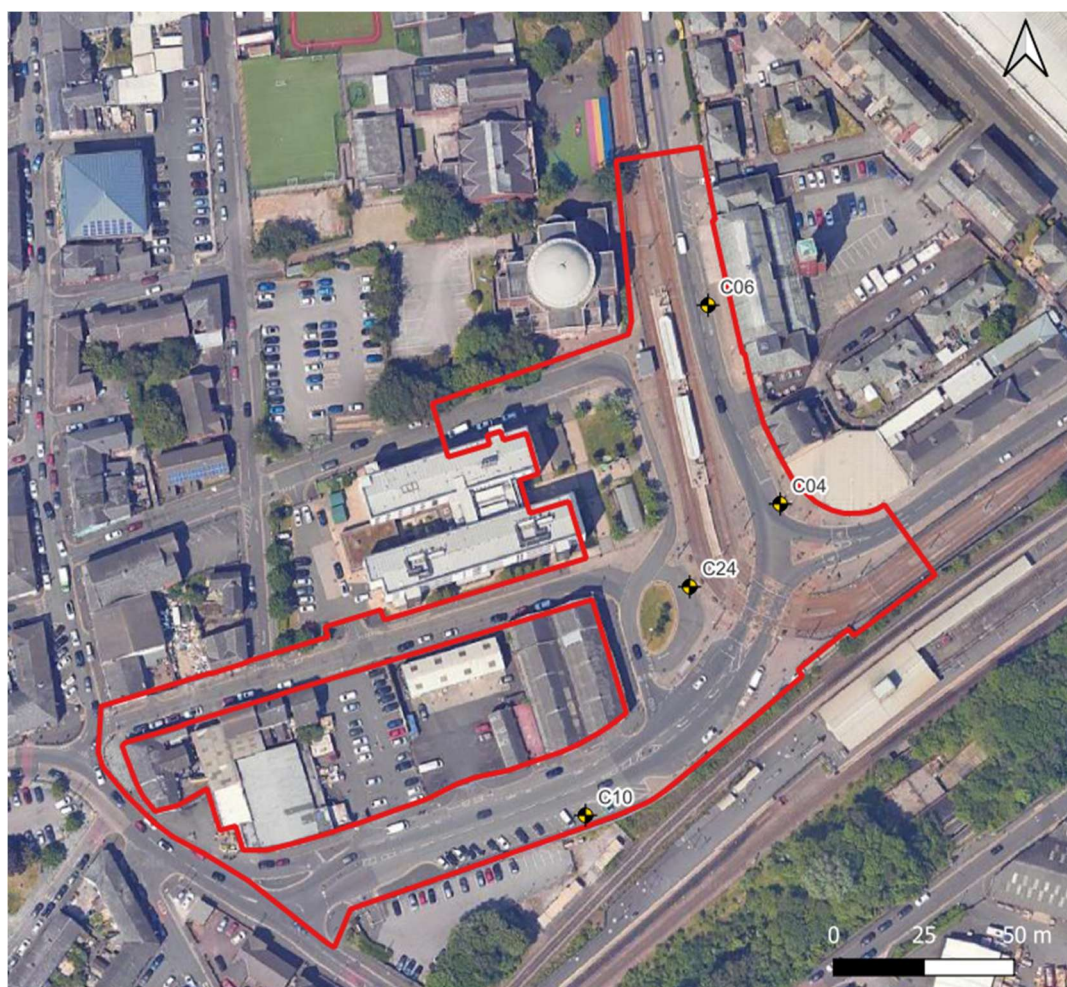


Figure 6-1: Exploratory Hole Location Plan © Google (Ref 7)

All pavement coring was undertaken using a stand-alone towable coring unit, utilizing a 300mm barrel to provide a sufficient diameter hole for the subsequent advancement of hand excavated pits.

Following coring, each hole was advanced using insulated hand tools to the scheduled depth or until an obstruction was encountered. Geological logs produced by the attending Arcadis consultant for each location are included in Appendix D.

Representative soil samples were also collected and sent to a UKAS/MCERTS accredited laboratory to be tested for a broad range of potential contaminants. Full testing results are included in Appendix E.

7 Ground Conditions

7.1 Stratigraphy

A detailed description of the ground conditions encountered during the investigation can be seen within the logs presented in Appendix D. Table 7-1 below presents a summary of the ground conditions encountered at the site.

Table 7-1: Site Stratigraphy

Type	Soil Type	Base Depth Range (m bgl) and locations	General Description and Interpretation
Made Ground	Macadam	0.13 (C10) - 0.25 (C04) Found at all locations	
	Concrete	0.45 (C06 Only)	Concrete (no reinforcement)
	Gravels	0.50 (C10) - 0.6 (C24) (C04, C10, C24)	Found as a yellowish beige silty sandy GRAVEL of limestone (Type 1). or An orangish brown clayey sandy GRAVEL of brick, sandstone and porcelain.
	Sands	0.7 (C10 Only)	Found as a dark brown gravelly SAND with frequent cobbles of red brick and sandstone and gravel of brick and sandstone.
	Clay	1.0* (C04 Only)	Found as a dark grey slightly sandy CLAY.
	Cobbles	0.27 (C10) – 0.75 (C06) * (C06, C10 Only)	Found as brown sandy COBBLES of subangular brick and sandstone. or Sandstone cobble setts, approximately 15cm x 15cm x 15cm.

*Depth proven

7.2 Hydrogeology

Groundwater was not encountered during the investigation.

7.3 Soil Quality

Table 7-2: Soil Quality

Data	General Description and Interpretation
Visual or olfactory evidence of contamination – soil	Visual and olfactory evidence of contamination was limited to hydrocarbon odours noted within the Made Ground at: • C04 at 0.55m bgl – 1.00 m bgl. • C10 at 0.27m bgl – 0.50m bgl.
Asbestos	No suspected asbestos observed in soils.
Laboratory Analysis	Results of the laboratory analysis are presented in Appendix E.

8 Contamination Assessment

8.1 Chemical Testing

Samples for contamination testing were sent to ALS Environmental (ALS), an MCERTS and UKAS accredited chemical testing laboratory.

The contamination testing carried out is summarised below and the laboratory certificates are included in Appendix E.

All soil samples were submitted for the following suite of testing:

- Metals inc. arsenic, boron, cadmium, chromium, chromium (Hexavalent), copper, lead, nickel, selenium, zinc and mercury.
- Total petroleum hydrocarbons criteria working group (TPH-CWG).
- Speciated polycyclic aromatic hydrocarbons (PAH).
- Phenols.
- Cyanide.
- Total Organic Carbon (TOC).
- Soil Organic Matter (SOM).
- Asbestos screen.
- pH.

Additionally, select samples were also submitted for soil leachate testing, including the following determinands:

- Metals inc. arsenic, boron, cadmium, chromium, chromium (Hexavalent), copper, lead, nickel, selenium, zinc and mercury.
- TPH CWG.
- PAH.
- Phenols.
- Cyanide.
- Dissolved Organic Carbon (DOC).
- pH.

8.2 Assessment Methodology

In line with LCRM (Ref 10), a Tier 2 Generic Quantitative Risk Assessment (GQRA) has been undertaken to determine the significance of the measured concentrations of contaminants from the chemical analysis in relation to the potentially active source-pathway-receptor linkages.

The GQRA comprises the comparison of the measured concentrations in soil with applicable Generic Assessment Criteria (GAC) which comprise the readily available "Suitable 4 Use Levels" (S4UL's) as published by LQM/CIEH (Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3223. All rights reserved).

S4UL's have been derived in line with the developments in UK human health risk assessment since 2009, in particular the additional land uses, and exposure assumptions presented in Defra's Category 4 Screening Levels (C4SL) guidance. However, the S4UL's are all based on Health Criteria that represent minimal or tolerable levels of risks to health as described in the Environment Agency's SR2 guidance, ensuring that the resulting assessment criteria are 'suitable for use' under planning.

S4UL's based on a Commercial end use have been used, considering a soil organic matter content of 1%. This is considered to be the most applicable scenario given the development plans include widespread hardstanding across the site, with only minor peripheral landscaping included.

Measured concentrations of contaminants in soil leachate have been compared against Drinking Water Standards (DWS) protective of aquifers which may be used as potable supply, to provide an indication of risk to groundwater.

The results of the soil and soil leachate GQRA are presented in the tables in Appendix F and summarised in the following sections.

8.3 Summary of Laboratory Results

8.3.1 Soil

A total of 6no. samples of Made Ground soils were submitted for laboratory analysis. Full GAC comparison tables are included in Appendix F, and exceedances above the GAC where above the test limit of detection, are summarised in the table below:

Table 8-1: Soil Exceedances of Generic Assessment Criteria

Receptor	Contaminant	GAC (mg/kg)	No. exceeding	Exceedance concentration range (mg/kg)	Exceedance Location (m bgl)
Human Health – Commercial (1% SOM)	Benzo(b)fluoranthene	44	1	123	C10 (0.4)
	Benzo(a)pyrene	35	1	96.1	C10 (0.4)
	Dibenz(a,h)anthracene	3.5	1	8.96	C10 (0.4)

All of the soil samples were screened for asbestos containing material (ACM). No asbestos was identified in the samples analysed.

8.3.2 Soil Leachate

In addition, 4no. of the Made Ground soil samples were submitted for leachate analysis. The table below summarises the exceedances above the DWS where concentrations are recorded above the laboratory method detection limit.

Table 8-2: Soil Leachate Exceedances of Drinking Water Standards

Receptor	Contaminant	GAC (µg /l)	No. exceeding	Exceedance concentration range (µg/l)	Exceedance Location (m bgl)
Controlled Waters – Aquifers	Arsenic	10	1	29.5	C06 (0.6)

Receptor	Contaminant	GAC (µg/l)	No. exceeding	Exceedance concentration range (µg/l)	Exceedance Location (m bgl)
UK Drinking Water Standards	Lead (filtered)	10	1	21	C06 (0.6)
	Benzo(b)fluoranthene	0.025	2	0.434-1.24	C06 (0.6) C10 (0.4)
	Benzo(k)fluoranthene (filtered)	0.025	2	0.193-0.479	C06 (0.6) C10 (0.4)
	Benzo(a)pyrene	0.01	2	0.325-0.946	C06 (0.6) C10 (0.4)
	Benzo(g,h,i)perylene (filtered)	0.025	2	0.255-0.87	C06 (0.6) C10 (0.4)
	Indeno(1,2,3-c,d)pyrene (filtered)	0.025	2	0.167-0.712	C06 (0.6) C10 (0.4)
	pH (lab) (filtered)	6.5-9.5	1	9.51	C06 (0.6)

8.4 Risk Evaluation

8.4.1 Human Health

Widespread, gross or potentially mobile contamination impacts have not been identified at the site. Sampling and testing of soils has been undertaken and assessed against GACs for a Commercial end use, which is applicable considering the development plans for the site. With regards to human health receptors in this scenario, exceedances of the GAC for several PAHs were recorded in the shallow Made Ground in one location (C10 at 0.4m bgl).

This particular sample was obtained from an area proposed for car parking, and therefore these soils will be beneath hardstanding removing the driving exposure pathways for PAHs which comprise direct exposure including soil ingestion/inhalation and dermal contact.

As per the approved masterplan included within Appendix A, the majority of the site area will be covered by hardstanding. Minimal soft landscaping will be incorporated into the scheme and will include peripheral ornamental shrub, tree pits and small areas of rain garden along the highway. The risk to human health from PAHs in soils is therefore considered to be low.

Given the current site layout, site-won topsoil will not be available for re-use in the scheme, and therefore a suitable growing medium will need to be imported for the planting. This should meet the requirements of the landscape architect and will also ensure that Made Ground soils will not be exposed at the surface in the limited areas of soft landscaping.

8.4.2 Controlled Waters

There are no surface water receptors located within influencing distance of the site and therefore they are not regarded as receptors and have not been considered in this assessment.

The superficial Glaciofluvial Deposits and Pennine Lower Coal Measures Formation beneath the site are classified as Secondary A Aquifers and are therefore considered potential Controlled Water receptors.

Given the limited depth of ground investigation, groundwater was not recorded in any of the hand pits. The closest available historical borehole records suggest groundwater may sit at least 7m bgl. Soil leachate samples were therefore scheduled for analysis. Comparison of soil leachate directly with Drinking Water Standards is considered to be a conservative assessment as there are no recorded groundwater abstraction points or potable water abstraction licenses within 2km of the site, and the site is not located within a groundwater SPZ. Additionally, attenuation of the contaminants of concern (CoC) as the pore water migrates through the unsaturated zone, or attenuation and dilution in the aquifer is not considered. However, soil leachate has been used here in the absence of groundwater data to provide an indication of the potential risk to the aquifers.

The soil leachate results showed exceedances of the DWS for several metals and PAHs in two samples. These exceedances were marginal, and generally within one order of magnitude of the DWS.

The proposed development will involve the majority of the site area being covered by impermeable hardstanding. This will act to limit vertical movement of precipitation through the soil profile across much of the site, thereby restricting mobilisation of contaminants within site soils. Based on the above, and given the minor exceedances recorded, the conservative nature of the assessment and the likely depth to the groundwater table, the risk to groundwater from contaminants within the site soils is considered to be low.

9 Other Development Considerations

9.1 Soils Management

Careful planning and management of soils prior to and during any excavation works will ensure optimum disposal / re-use of the resource.

The production of aggregates from inert / uncontaminated waste (such as crushed concrete and brick) usually falls under the WRAP Quality Protocol “Aggregates from inert waste” and therefore these are generally excluded from the following advice.

If any Made Ground arisings, or impacted natural soil arisings, are deemed chemically and geotechnically suitable for re-use on site and there is a genuine requirement for fill materials within the development, it will be necessary to demonstrate this and declare the material as non-waste through a Materials Management Plan (MMP) under the CL:AIRE Code of Practice; supported by a development-specific, regulator approved Remediation Strategy (through the Planning process).

9.2 Waste Characterisation & Disposal

The 6no. soil samples submitted for laboratory analysis have been assessed using the waste classification software HazWasteOnline™, to provide a preliminary indication on the likely classification of soils as hazardous or non-hazardous waste, should they be required to be disposed off-site as waste. These results are included in Appendix G.

All samples have been assessed in accordance with WM3 guidance (Ref 11). The assessment found that 5no. of the samples tested would be classifiable as non-hazardous should they require off-site disposal as waste (17 05 04 in the List of Waste (Construction and Demolition Wastes comprising soil and stones)).

1no. sample from C10 at 0.4m bgl would be classifiable as hazardous waste with the following hazardous properties: HP 3(i): Flammable, HP 7: Carcinogenic, and HP 11: Mutagenic. These hazardous properties are based on the concentration of TPH. The sample was noted as having a hydrocarbon odour during the investigation.

Once waste has been classified as either hazardous or non-hazardous, Waste Acceptance Criteria (WAC) testing is undertaken to determine if the waste meets the requirements for disposal in the required landfill. This is a standard set of tests that look at long term behaviour of the waste and includes leachate analysis. The results are compared against a set of legislative thresholds. These results will indicate if non-hazardous waste is inert and therefore is suitable for disposal in an inert landfill and is also required to facilitate disposal at hazardous landfills if the initial assessment indicates hazardous waste. It is not required for disposal of non-hazardous wastes which are not inert.

WAC testing for disposal can only be undertaken on the actual material due to be disposed. During the redevelopment the appointed Principal Contractor will be responsible for the appropriate management of waste generated and the WAC testing prior to disposal.

In all cases where soils require off-site disposal, the materials need to be managed under the appropriate legislation and consideration given to any remedial techniques that could be used to improve the soil condition and enhance the sustainability of the operation. As a last resort only should soils be classified as waste and disposed of at a licensed landfill.

It is the responsibility of the waste producer to ensure that the waste carrier and destination facility operates under appropriate/legal licenses and permits.

9.3 Health, Safety and Environment

Despite the findings of the testing there remains a potential for more-significantly impacted soils to be encountered; consideration should therefore be given to the level of personal protective equipment (PPE) that should be provided to future site operatives. All work on site should be conducted in accordance with appropriate Health and Safety guidance.

Care should be taken to minimise the risk of potentially contaminative incidents occurring during redevelopment. Good working practices should be adopted during construction works in order to minimise the risk of contamination occurring as a result of spillage or leakage of fuels, oils or chemicals stored or used at the site during re-development. All such materials should be sited on an impervious base within a bund and should be adequately secured. In particular, care should be taken to prevent fuel, oils or other mobile contamination sources from entering any surface water drains at the site.

Throughout any redevelopment works, due regard should be given to potential detrimental effects on the surroundings including noise, vibration, odour and dust.

10 Updated Conceptual Site Model & Risk Assessment

10.1 Updated Geoenvironmental Risk Assessment

Table 10-1: Updated Geoenvironmental Risk Assessment

Potential Receptor	Potential Source	Potential Pathway	Risk
Future End-Users General Public and maintenance workers	On-Site Sources (Made Ground, tramway and vehicle parking)	Soil Leaching / Aqueous Migration Dermal Contact & Ingestion Particulate/Fibre Inhalation Vapour Inhalation	Low
	Off-Site Point Sources (Infilled land, railway land, industrial land uses and historical fire station)	Soil Leaching / Aqueous Migration Vapour Inhalation	Low
Controlled Waters Groundwater in underlying Secondary A superficial and bedrock aquifers	Made Ground and On-Site Sources	Soil Leaching / Aqueous Migration	Low
Landscaping Future landscaping	Contaminated Soil – phytotoxic contaminants	Vegetation Root Uptake	Low - Moderate (easily mitigated by providing clean planting medium)

*Based on the most appropriate commercial land-use scenario without any mitigation / remediation measures

10.2 Overall Environmental Risk

Widespread, gross or potentially mobile contamination impacts have not been identified at the site and based on the GQRA the site soils do not present a significant risk to human health under the proposed development scenario.

The risk to Controlled Water receptors is also not indicated to be significant, given the low soil leachate concentrations recorded, the distance to the nearest groundwater abstraction points and the likely depth to groundwater. The development proposals will also cover much of the site with impermeable hardstanding, thereby restricting mobilisation of contaminants within site soils.

Given the lack of topsoil within the current site layout, a suitable growing medium will need to be imported for planting. This should meet the requirements of the landscape architect and will also ensure that Made Ground soils will not be exposed at the surface in the limited areas of soft landscaping.

11 Summary & Conclusions

11.1 Background, Scope & Objectives

Arcadis Consulting (UK) Ltd was commissioned by Rochdale Borough Council to complete a combined Phase 1 and 2 Geo-Environmental Assessment for the redevelopment of Rochdale Station Square comprising of a new public square, relocation of the existing taxi rank and car parking spaces and associated works.

The Phase 1 desk-based assessment established a preliminary Conceptual Site Model to complete a preliminary risk assessment. Following this, a limited Phase 2 ground investigation was completed which comprised the excavation of four hand pits following pavement coring to a maximum depth of 1m bgl, and subsequent soil laboratory testing, to inform a Generic Quantitative Risk Assessment and refine the potentially active pollutant linkages.

11.2 Ground Conditions

Ground conditions across the site were found to comprise Made Ground comprising Macadam, concrete (locally), silty sandy Gravel of limestone (type 1), clayey sandy Gravel, gravelly Sand, sandy Clay, sandy Cobbles of subangular brick and sandstone, and sandstone cobble setts.

Localised hydrocarbon odours were recorded within the Made Ground in two locations.

Groundwater was not encountered within the hand pits.

11.3 Contamination Assessment

In general, the environmental risk for the site in the context of the proposed development plans is considered to be low and the risk to human health and Controlled Water receptors is not indicated to be significant.

A preliminary waste classification assessment has been carried out based on the limited soil samples submitted for laboratory analysis. The results indicate the majority of samples would be classifiable as non-hazardous for offsite disposal, however there is the potential for some waste soils to be generated which would be classifiable as hazardous based on elevated TPH concentrations recorded locally.

Given the lack of topsoil within the current site layout, a suitable growing medium will need to be imported for planting. This should meet the requirements of the landscape architect and will ensure that Made Ground soils will not be exposed at the surface in the limited areas of soft landscaping.

It is recommended that a watching brief is carried out by the Contractor during construction, in line with best practice, in the event that unforeseen contamination is encountered.

12 References

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6. Environment Agency Data provided on the Multi-Agency Geographical Information for the Countryside (MAGIC) website - [MAGIC \(defra.gov.uk\)](#).
7. Google Earth Satellite imagery - <https://earth.google.co.uk/>.
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9. Transport for Greater Manchester, Metrolink phase 3 - [Metrolink phase 3 | Bee Network | Powered by TfGM](#).
10. Environment Agency, Land contamination risk management (LCRM), 2020.
11. Environment Agency, "Waste Classification, Guidance on the classification and assessment of waste (1st Edition v1.2.GB), Technical Guidance WM3," 2021.

13 Study Limitations

IMPORTANT. This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1 This report has been prepared by Arcadis Consulting (UK) Ltd ('Arcadis'), with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with Rochdale Borough Council (the 'Client'). Arcadis does not accept responsibility for any matters outside the agreed scope.

2 This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing. The contents of this report may not be used or relied upon by any person other than this party without the express written consent and authorisation of Arcadis.

3 Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Arcadis is unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have unpublished, more stringent objectives. Further work may be required by these parties.

4 All work carried out in preparing this report has used, and is based on, Arcadis' professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice, pending changes in legislation, of which Arcadis is aware, have been considered. Following delivery of the report, Arcadis has no obligation to advise the Client or any other party of such changes or their repercussions.

5 This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.

6 Whilst this report and the opinions made are correct to the best of Arcadis' belief, Arcadis cannot guarantee the accuracy or completeness of any information provided by third parties. provided by third parties. Arcadis has taken reasonable steps to ensure that the information sources used for this assessment provided accurate information and has therefore assumed this to be the case.

7 This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have been received.

8 This report refers, within the limitations stated, to the condition of the site at the time of the inspection. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.

9 The content of this report represents the professional opinion of experienced environmental consultants. Arcadis does not provide specialist legal or other professional advice. The advice of other professionals may be required.

10 Where intrusive investigation techniques have been employed, they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases, the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

11 If below ground intrusive investigations have been conducted as part of the scope, safe location of exploratory holes has been carried out with reference to the Arcadis ground disturbances procedure. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on site.

12 Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.

13 Unless otherwise stated, an inspection of the site has not been undertaken and there may be conditions present at the site which have not been identified within the scope of this assessment.

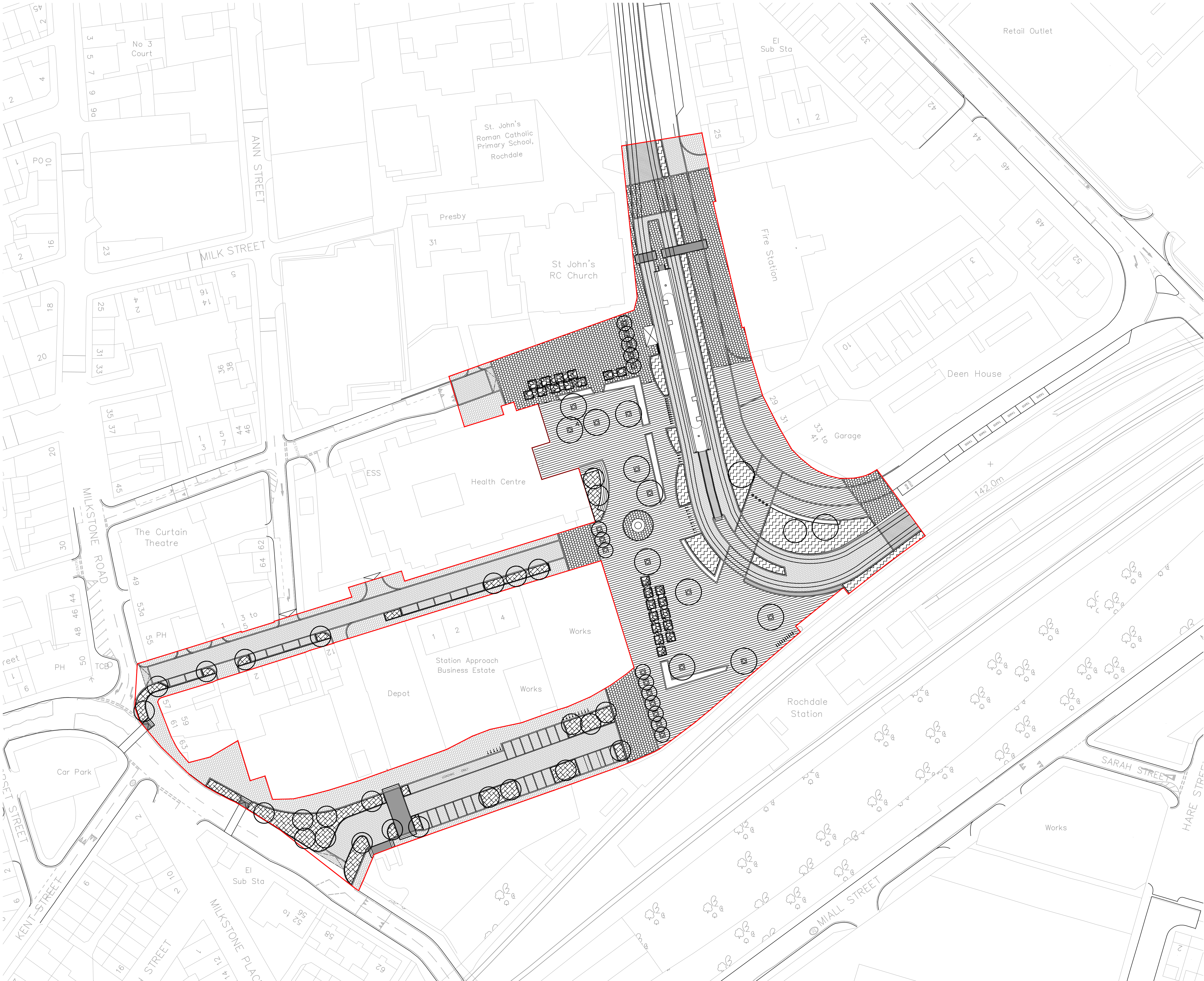
14 Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have not been obtained.

15 Arcadis has relied upon the accuracy of documents, oral information and other material and information provided by the Client and others, and Arcadis assumes no liability for the accuracy of such data, although in the event of apparent conflicts in information, Arcadis would highlight this and seek to resolve.

16 Unless otherwise stated, the scope of works has not included an environmental compliance review, health and safety compliance review, hazardous building materials assessment, interviews or contacting Local Authority, requests for information to the petroleum officer, sampling or analyses of soil, ground water, surface water, air or hazardous building materials or a chain of title review.

Appendix A

Proposed Redevelopment Plan



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Site Boundary

Substation

Hardscape surfaces

- Proposed concrete block paving 300x200
- Proposed concrete block paving 200x100
- Proposed concrete block paving 50x50
- Proposed concrete block paving 200x200
- Proposed concrete block paving 100x100
- Proposed tarmac
- Proposed compacted gravel

Softscape materials

- Proposed mixed ornamental shrub
- Proposed rain garden
- Proposed tree with 3m clear stem
- Proposed boxhead trees 3m clear stem

Furniture and other structures

- A Cafe spillout to be retained
- Bespoke concrete block benches
- Art sculpture on plinth
- Concrete sitting steps
- Proposed tree grilles
- Proposed Cycle stands
- Proposed retrofit bollards
- Proposed signage wall at 1.2m

Revision	Date	Description
Rev A	23-06-05	Updated in line with feedback from consultants

BroadwayMalyan^{BM}

Client
Rochdale Borough Council

Project
Rochdale Station Square

Description
**LANDSCAPE PROPOSALS
GENERAL ARRANGEMENT PLAN**

Status
For Planning

Scale	Drawn By	Date
1:500@A1	FM	23/06/05
Job Number	Drawing Number	Revision
36072	L-91-101	A

100mm@A1 Original size Copyright Broadway Malyan Limited



Site Boundary

Substation

Hardscape surfaces

Proposed concrete block paving 300x200

Proposed concrete block paving 200x100

Proposed concrete block paving 50x50

Proposed concrete block paving 200x200

Proposed concrete block paving 100x100

Proposed tarmac

Proposed compacted gravel

Softscape materials

Proposed mixed ornamental shrub

Proposed rain garden

Proposed tress with 3m clear stem

Proposed boxhead trees 3m clear stem

Furniture and other structures

A Cafe spillout to be retained

Bespoke concrete block benches

Art sculpture on plinth

Concrete sitting steps

Proposed Cycle stands

B Proposed retrofit bollards

C Proposed signage wall at 1.2m

Revision	Date	Description
Rev A	23-06-05	Updated in line with feedback from consultees

BroadwayMalyan^{BM}

Client
Rochdale Borough Council

Project
Rochdale Station Square

Description
**LANDSCAPE PROPOSALS
ILLUSTRATIVE MASTERPLAN**

Status		
For Planning		
Scale	Drawn By	Date
1:500@A1	FM	23/06/05
Job Number	Drawing Number	Revision
36072	L-91-050	A

Appendix B

Groundsure Insight Report

Rochdale Station Square, OL11 1DR

Order Details

Date: 12/08/2024
Your ref: PO: UK2508018. Rochdale Station Square
Our Ref: GS-XHN-477-L9Y-34F

Site Details

Location: 389853 412674
Area: 1.38 ha
Authority: [Rochdale Metropolitan Borough Council](#) ↗



[Summary of findings](#)

[p.2 >](#) [Aerial image](#)

[p.9 >](#)

[OS MasterMap site plan](#)

[p.14 >](#) [Insight User Guide](#) ↗

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	8	7	47	108	-
22 >	1.2 >	Historical tanks >	0	0	6	11	-
23 >	1.3 >	Historical energy features >	0	2	6	20	-
24	1.4	Historical petrol stations	0	0	0	0	-
24 >	1.5 >	Historical garages >	5	7	25	24	-
27	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
28 >	2.1 >	Historical industrial land uses >	13	12	62	150	-
37 >	2.2 >	Historical tanks >	0	0	6	15	-
38 >	2.3 >	Historical energy features >	0	3	14	53	-
41	2.4	Historical petrol stations	0	0	0	0	-
41 >	2.5 >	Historical garages >	6	13	40	39	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
46	3.1	Active or recent landfill	0	0	0	0	-
46	3.2	Historical landfill (BGS records)	0	0	0	0	-
47	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
47 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	0	1	-
47	3.5	Historical waste sites	0	0	0	0	-
47 >	3.6 >	Licensed waste sites >	0	0	4	0	-
49 >	3.7 >	Waste exemptions >	0	0	19	11	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
52 >	4.1 >	Recent industrial land uses >	1	13	35	-	-
56 >	4.2 >	Current or recent petrol stations >	0	0	0	1	-
56	4.3	Electricity cables	0	0	0	0	-
56	4.4	Gas pipelines	0	0	0	0	-
56	4.5	Sites determined as Contaminated Land	0	0	0	0	-



56 >	4.6 >	Control of Major Accident Hazards (COMAH) >	0	0	0	1	-
57	4.7	Regulated explosive sites	0	0	0	0	-
57	4.8	Hazardous substance storage/usage	0	0	0	0	-
57	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
57	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
58 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	2	7	-
59	4.12	Radioactive Substance Authorisations	0	0	0	0	-
59	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
59	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
60	4.15	Pollutant release to public sewer	0	0	0	0	-
60	4.16	List 1 Dangerous Substances	0	0	0	0	-
60	4.17	List 2 Dangerous Substances	0	0	0	0	-
60 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	3	3	-
61	4.19	Pollution inventory substances	0	0	0	0	-
61	4.20	Pollution inventory waste transfers	0	0	0	0	-
62	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
63 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
65 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
67 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
68	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
68	5.5	Groundwater vulnerability- local information	None (within 0m)				
69 >	5.6 >	Groundwater abstractions >	0	0	0	0	8
72 >	5.7 >	Surface water abstractions >	0	0	0	0	12
75	5.8	Potable abstractions	0	0	0	0	0
75	5.9	Source Protection Zones	0	0	0	0	-
75	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
76	6.1	Water Network (OS MasterMap)	0	0	0	-	-



76	6.2	Surface water features	0	0	0	-	-
77 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
77 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
78 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
79	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
79	7.2	Historical Flood Events	0	0	0	-	-
79	7.3	Flood Defences	0	0	0	-	-
80	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
80	7.5	Flood Storage Areas	0	0	0	-	-
81	7.6	Flood Zone 2	None (within 50m)				
81	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
82 >	8.1 >	Surface water flooding >	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
84 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
85 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	1	4
86	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
86 >	10.3 >	Special Areas of Conservation (SAC) >	0	0	0	1	4
87	10.4	Special Protection Areas (SPA)	0	0	0	0	0
87	10.5	National Nature Reserves (NNR)	0	0	0	0	0
87	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
88	10.7	Designated Ancient Woodland	0	0	0	0	0
88	10.8	Biosphere Reserves	0	0	0	0	0
88	10.9	Forest Parks	0	0	0	0	0
88	10.10	Marine Conservation Zones	0	0	0	0	0
88	10.11	Green Belt	0	0	0	0	0
89	10.12	Proposed Ramsar sites	0	0	0	0	0



89	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
89	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
89	10.15	Nitrate Sensitive Areas	0	0	0	0	0
90 >	10.16 >	Nitrate Vulnerable Zones >	0	0	0	0	1
91 >	10.17 >	SSSI Impact Risk Zones >	2	-	-	-	-
93 >	10.18 >	SSSI Units >	0	0	0	1	4
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
95	11.1	World Heritage Sites	0	0	0	-	-
96	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
96	11.3	National Parks	0	0	0	-	-
96 >	11.4 >	Listed Buildings >	0	1	2	-	-
97 >	11.5 >	Conservation Areas >	1	0	1	-	-
97	11.6	Scheduled Ancient Monuments	0	0	0	-	-
97	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
98 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
99	12.2	Open Access Land	0	0	0	-	-
99	12.3	Tree Felling Licences	0	0	0	-	-
99	12.4	Environmental Stewardship Schemes	0	0	0	-	-
99	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
100 >	13.1 >	Priority Habitat Inventory >	0	1	1	-	-
101 >	13.2 >	Habitat Networks >	0	0	1	-	-
101	13.3	Open Mosaic Habitat	0	0	0	-	-
101	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
102 >	14.1 >	10k Availability >	Identified (within 500m)				
103 >	14.2 >	Artificial and made ground (10k) >	1	1	1	2	-
105 >	14.3 >	Superficial geology (10k) >	1	0	1	0	-

106	14.4	Landslip (10k)	0	0	0	0	-
107 >	14.5 >	Bedrock geology (10k) >	3	0	4	2	-
108 >	14.6 >	Bedrock faults and other linear features (10k) >	2	0	2	1	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
109 >	15.1 >	50k Availability >	Identified (within 500m)				
110	15.2	Artificial and made ground (50k)	0	0	0	0	-
110	15.3	Artificial ground permeability (50k)	0	0	-	-	-
111 >	15.4 >	Superficial geology (50k) >	1	0	0	1	-
112 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
112	15.6	Landslip (50k)	0	0	0	0	-
112	15.7	Landslip permeability (50k)	None (within 50m)				
113 >	15.8 >	Bedrock geology (50k) >	3	0	1	3	-
114 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
114 >	15.10 >	Bedrock faults and other linear features (50k) >	2	0	1	2	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
116 >	16.1 >	BGS Boreholes >	1	0	10	-	-
Page	Section	Natural ground subsidence >					
118 >	17.1 >	Shrink swell clays >	Negligible (within 50m)				
119 >	17.2 >	Running sands >	Very low (within 50m)				
120 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
121 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
122 >	17.5 >	Landslides >	Very low (within 50m)				
123 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
125 >	18.1 >	BritPits >	0	0	0	1	-
126 >	18.2 >	Surface ground workings >	0	1	17	-	-
127	18.3	Underground workings	0	0	0	0	0
127	18.4	Underground mining extents	0	0	0	0	-
127	18.5	Historical Mineral Planning Areas	0	0	0	0	-



127	18.6	Non-coal mining	0	0	0	0	0
128	18.7	JPB mining areas	None (within 0m)				
128	18.8	The Coal Authority non-coal mining	0	0	0	0	-
128	18.9	Researched mining	0	0	0	0	-
128	18.10	Mining record office plans	0	0	0	0	-
129	18.11	BGS mine plans	0	0	0	0	-
129 >	18.12 >	Coal mining >	Identified (within 0m)				
129	18.13	Brine areas	None (within 0m)				
129	18.14	Gypsum areas	None (within 0m)				
129	18.15	Tin mining	None (within 0m)				
130	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
131	19.1	Natural cavities	0	0	0	0	-
131	19.2	Mining cavities	0	0	0	0	0
131	19.3	Reported recent incidents	0	0	0	0	-
131	19.4	Historical incidents	0	0	0	0	-
132	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
133 >	20.1 >	Radon >	Between 1% and 3% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
135 >	21.1 >	BGS Estimated Background Soil Chemistry >	3	0	-	-	-
135	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
135	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
136	22.1	Underground railways (London)	0	0	0	-	-
136	22.2	Underground railways (Non-London)	0	0	0	-	-
137	22.3	Railway tunnels	0	0	0	-	-
137 >	22.4 >	Historical railway and tunnel features >	7	9	12	-	-
138	22.5	Royal Mail tunnels	0	0	0	-	-



138	22.6	Historical railways	0	0	0	-	-
139 >	22.7 >	Railways >	10	14	31	-	-
141	22.8	Crossrail 1	0	0	0	0	-
141	22.9	Crossrail 2	0	0	0	0	-
141	22.10	HS2	0	0	0	0	-

Recent aerial photograph



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Capture Date: 23/05/2019

Site Area: 1.38ha



Contact us with any questions at:

info@groundsure.com

01273 257 755

Date: 12 August 2024

Recent site history - 2018 aerial photograph



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Capture Date: 01/07/2018

Site Area: 1.38ha



Recent site history - 2012 aerial photograph



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Capture Date: 26/03/2012

Site Area: 1.38ha



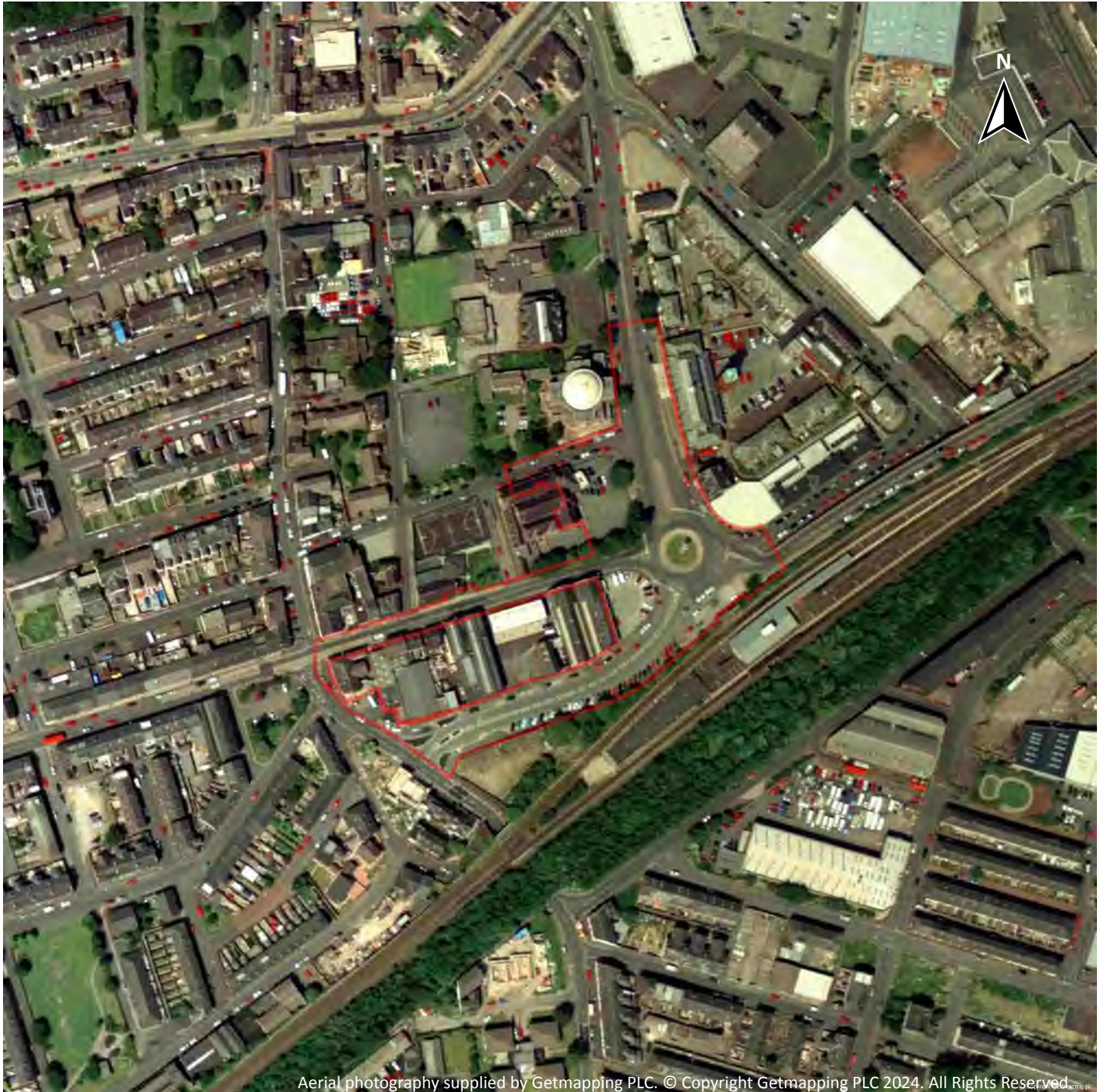
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Date: 12 August 2024

Recent site history - 2000 aerial photograph



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Capture Date: 19/06/2000

Site Area: 1.38ha



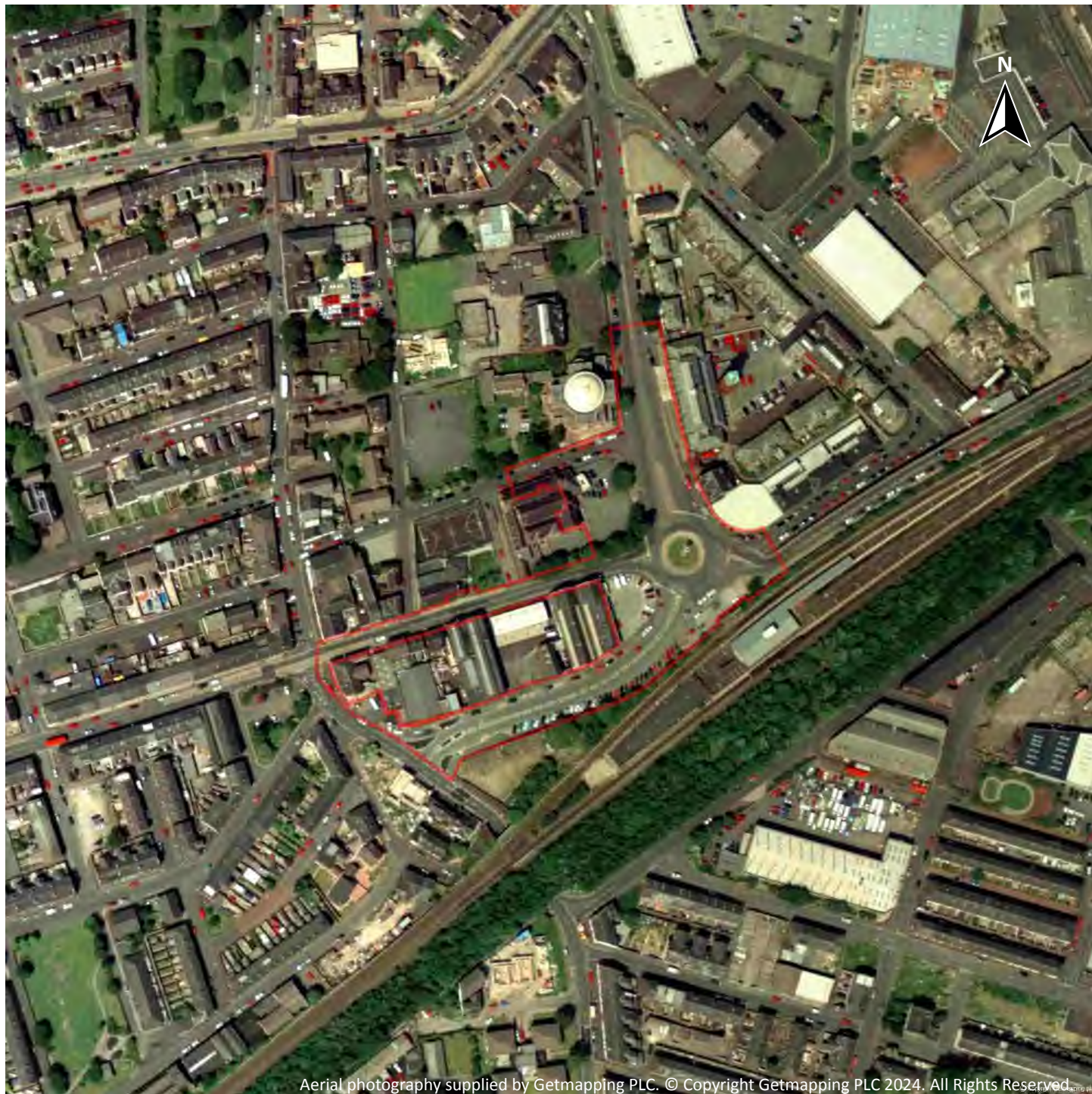
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Date: 12 August 2024

Recent site history - 1999 aerial photograph



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Capture Date: 10/09/1999

Site Area: 1.38ha



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Date: 12 August 2024

OS MasterMap site plan



Site Area: 1.38ha



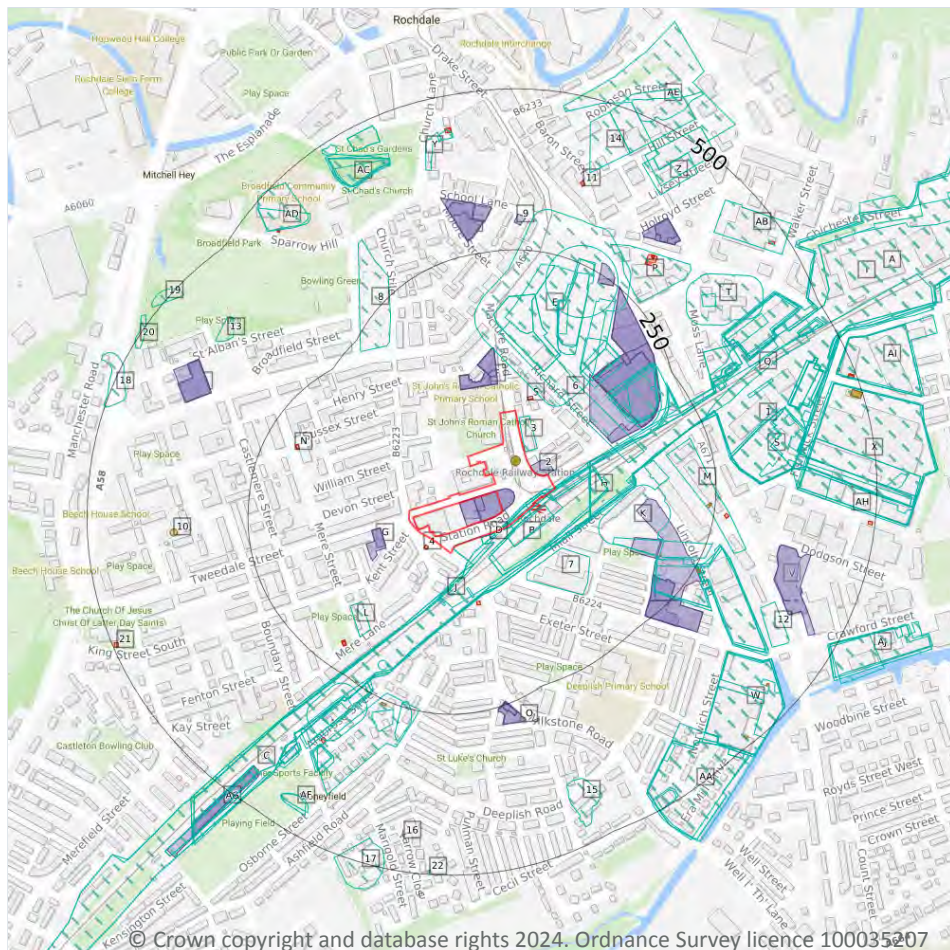
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Date: 12 August 2024

1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m

170

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15](#) >

ID	Location	Land use	Dates present	Group ID
1	On site	Railway Sidings	1968 - 1976	752992



ID	Location	Land use	Dates present	Group ID
A	On site	Railway Sidings	1891	721500
A	On site	Railway Sidings	1938	749500
B	On site	Railway Sidings	1987 - 1992	739569
B	On site	Railway Station	1891 - 1938	742821
B	On site	Railway Station	1956	759337
B	On site	Railway Station	1968	792011
C	On site	Railway Sidings	1956	759022
3	1m NE	Fire Station	1968 - 1992	728084
A	1m E	Railway Sidings	1928	788774
A	1m E	Railway Sidings	1908	793524
D	2m S	Railway Building	1908 - 1928	797034
B	8m SE	Railway Station	1987 - 1992	802556
B	11m SE	Railway Station	1975	792391
E	43m N	Canal Wharf	1891	791809
H	54m E	Railway Buildings	1954	657836
I	54m E	Railway Sidings	1954	735168
H	55m E	Railway Station	1967	799410
I	55m E	Railway Sidings	1967	758938
J	58m SW	Railway Building	1938	703085
J	60m S	Railway Building	1938	703103
6	66m NE	Warehouse	1851	699988
J	72m SW	Railway Building	1938	703084
E	75m N	Unspecified Commercial/Industrial	1891	711167
E	75m N	Unspecified Commercial/Industrial	1938	743294
7	76m SE	Unspecified Works	1987 - 1992	758932
K	86m E	Unspecified Works	1967 - 1976	745228
E	104m NE	Canal Basin	1851	682817
A	111m E	Railway Building	1954	703102



ID	Location	Land use	Dates present	Group ID
E	116m NE	Canal Wharf	1851	754209
E	117m NE	Cotton Mill	1851	654857
E	117m NE	Canal Wharf	1851	723383
K	120m SE	Unspecified Mills	1938	670041
E	120m NE	Unspecified Mills	1891 - 1928	735408
E	121m N	Canal Wharf	1851	712527
E	126m NE	Canal Wharf	1938	749765
E	127m NE	Canal Wharf	1908 - 1928	761946
E	128m NE	Unspecified Mills	1938	759064
E	136m N	Unspecified Depot	1968	669557
L	141m SW	Unspecified Mill	1908	673511
A	143m E	Corn Mill	1851	658546
E	144m NE	Unspecified Mills	1891	753103
E	146m NE	Unspecified Commercial/Industrial	1976	670608
E	146m NE	Unspecified Works	1967	683337
E	150m NE	Cotton Mill	1851	654858
E	160m NE	Unspecified Mills	1928 - 1938	724514
E	170m N	Unspecified Wharf	1956	692738
M	180m E	Cotton Mill	1851	654856
K	191m SE	Unspecified Mill	1967	673510
K	193m SE	Unspecified Mills	1954	773124
C	196m SW	Unspecified Tank	1891	698120
K	199m SE	Unspecified Mills	1891	740572
8	204m NW	Grave Yard	1908	663423
K	209m SE	Saw Pit	1851	667282
C	231m SW	Unspecified Commercial/Industrial	1968 - 1992	798487
C	238m SW	Shuttle Works	1908	665819
C	238m SW	Engineering Works	1928 - 1938	756241



ID	Location	Land use	Dates present	Group ID
C	239m SW	Unspecified Works	1975 - 1992	744651
C	240m S	Unspecified Pit	1968	675387
C	245m SW	Engineering Works	1956	801389
K	250m E	Unspecified Mills	1908 - 1938	768239
K	250m E	Unspecified Works	1967 - 1976	719228
P	256m NE	Unspecified Mill	1976	673506
K	257m E	Unspecified Mills	1954	797554
C	258m SW	Unspecified Works	1908	799324
C	259m SW	Cuttings	1968	653240
Q	259m E	Railway Sidings	1851	786808
K	262m E	Unspecified Tank	1891	698122
S	276m E	Railway Works	1954	767530
S	278m E	Unspecified Works	1967 - 1976	733960
S	279m E	Unspecified Commercial/Industrial	1891 - 1908	775660
S	279m E	Railway Works	1928 - 1938	796027
C	288m SW	Iron Works	1891	655407
Q	292m NE	Railway Buildings	1954	732694
Q	293m NE	Railway Buildings	1967	789330
Q	295m NE	Railway Buildings	1891 - 1938	741686
T	306m NE	Goods Station	1967 - 1976	708217
Q	318m NE	Goods Station	1954	764720
Q	319m NE	Goods Station	1891 - 1938	720641
Q	319m NE	Railway Building	1976	703094
Q	332m E	Railway Station	1851	666378
T	333m NE	Smithy	1908	680314
Q	341m NE	Warehouse	1851	699989
Q	341m NE	Goods Shed	1976	771039
Q	341m NE	Goods Shed	1967	801340



ID	Location	Land use	Dates present	Group ID
Q	344m NE	Goods Shed	1954	781022
Q	345m NE	Goods Shed	1891 - 1938	707532
Q	354m NE	Warehouse	1851	699990
C	359m SW	Unspecified Mill	1908 - 1928	804471
C	360m SW	Unspecified Works	1938	732227
C	361m SW	Unspecified Ground Workings	1956	660709
S	368m E	Railway Building	1967 - 1976	801045
W	369m SE	Unspecified Commercial/Industrial	1891	670616
W	369m SE	Unspecified Mill	1928 - 1938	740203
W	369m SE	Unspecified Mills	1908	791141
12	369m SE	Unspecified Works	1976	683325
W	370m SE	Unspecified Mill	1967 - 1976	772460
W	370m SE	Unspecified Mills	1954	739703
S	373m E	Railway Building	1967 - 1976	758763
X	375m E	Unspecified Works	1967 - 1976	740131
X	377m E	Railway Works	1954	780549
C	377m SW	Marble Works	1908	785703
C	380m SW	Marble Works	1928	723185
C	380m SW	Marble Works	1938	752609
X	380m E	Iron Works	1891	655408
X	380m E	Railway Works	1908 - 1938	771981
13	384m NW	Unspecified Pit	1968	676517
S	384m E	Railway Building	1976	709707
S	384m E	Goods Shed	1967	795743
C	386m SW	Marble Works	1956	793310
S	387m E	Goods Shed	1891	731508
S	387m E	Railway Building	1908	772456
S	387m E	Railway Building	1928 - 1938	789421



ID	Location	Land use	Dates present	Group ID
14	387m N	Unspecified Works	1976	780183
S	388m E	Railway Building	1954	789463
Y	392m N	Unspecified Ground Workings	1968	660711
S	396m E	Railway Building	1976	703093
W	398m SE	Unspecified Mill	1967 - 1976	732906
15	400m S	Gravel Pit	1851	699655
Z	404m NE	Rope Walk	1851	691271
AA	405m SE	Unspecified Works	1967 - 1976	720442
AB	415m NE	Unspecified Works	1976	683324
AC	415m NW	Unspecified Pit	1956	765547
Z	416m NE	Unspecified Mill	1976	673505
AC	418m NW	Unspecified Pit	1938	735871
AC	418m NW	Unspecified Pit	1891	775012
AC	419m NW	Unspecified Pit	1928	782337
AA	419m SE	Iron Works	1928 - 1938	735298
AA	419m SE	Unspecified Mills	1908	793508
AD	420m NW	Unspecified Pit	1908	737134
AC	421m NW	Unspecified Pit	1968 - 1992	784754
AA	422m SE	Iron Works	1954	795535
AD	424m NW	Unspecified Pit	1968	739352
Y	433m N	Unspecified Heap	1928 - 1938	790575
AE	436m NE	Brick Field	1851	654524
AE	438m N	Unspecified Works	1976	793474
AF	444m SW	Unspecified Pit	1928 - 1938	777173
AF	445m SW	Unspecified Pit	1956	748934
I	446m NE	Railway Building	1967 - 1976	733197
AG	447m SW	Carriage Shed	1908	752861
AG	447m SW	Carriage Shed	1928	795082



ID	Location	Land use	Dates present	Group ID
AG	447m SW	Carriage Shed	1938	797654
I	447m NE	Railway Building	1954	731397
I	448m NE	Railway Building	1891 - 1938	797617
AG	456m SW	Railway Building	1968	707591
AG	456m SW	Carriage Shed	1956	793718
17	460m S	Refuse Heap	1908	656592
AH	460m E	Pump	1851	682643
AC	461m N	Corn Mill	1908	658548
AC	461m N	Unspecified Commercial/Industrial	1928	670614
I	469m E	Railway Buildings	1954	785425
I	470m E	Railway Buildings	1938	743962
I	470m E	Railway Buildings	1908	764149
AI	472m E	Unspecified Commercial/Industrial	1976	670632
AI	472m E	Unspecified Works	1967	683338
AI	472m E	Iron Works	1954	751967
I	473m E	Railway Buildings	1928	778759
18	474m W	Refuse Heap	1851	656683
AI	474m E	Iron Works	1928 - 1938	775206
AA	477m SE	Sand Pit	1928 - 1938	748827
AC	477m NW	Mortuary	1928 - 1938	728632
AA	480m SE	Sand Pit	1954	755984
19	485m NW	Unspecified Heap	1928 - 1938	787950
AJ	488m SE	Unspecified Commercial/Industrial	1967 - 1976	763419
20	488m W	Unspecified Ground Workings	1890	661879
AJ	490m SE	Unspecified Mills	1954	728377
AJ	491m SE	Unspecified Mills	1908 - 1938	776665
AE	491m N	Refuse Heap	1851	656627
22	493m S	Shed	1851	658377



ID	Location	Land use	Dates present	Group ID
AJ	493m SE	Cotton Mill	1851	654854

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	17
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Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
K	193m E	Unspecified Tank	1958	87629
M	238m E	Unspecified Tank	1891	107836
M	241m E	Unspecified Tank	1958	107802
M	241m E	Unspecified Tank	1957	106027
C	247m SW	Unspecified Tank	1958	98979
C	247m SW	Unspecified Tank	1957	98921
C	255m SW	Unspecified Tank	1971 - 1990	93909
K	255m E	Unspecified Tank	1891	87642
C	317m SW	Tank or Trough	1910	83586
S	350m E	Unspecified Tank	1891 - 1910	99740
10	360m W	Unspecified Tank	1993	86910
16	444m S	Unspecified Tank	1971	86912
W	448m SE	Unspecified Tank	1891	87630
AH	461m E	Unspecified Tank	1910	87646
I	481m E	Tanks	1985	102791
I	481m E	Tanks	1985 - 1988	102890
W	484m SE	Unspecified Tank	1891	87631



This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	28
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Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
4	13m SW	Electricity Substation	1989 - 1995	58983
5	26m N	Electricity Substation	1995	47221
J	85m S	Electricity Substation	1971 - 1996	50060
N	196m W	Electricity Substation	1978 - 1989	63515
N	197m W	Electricity Substation	1995	58624
L	204m SW	Electricity Substation	1994 - 1996	59157
L	204m SW	Electricity Substation	1984	61785
L	206m SW	Electricity Substation	1971	53208
M	266m E	Electricity Substation	1982 - 1993	59068
O	275m S	Electricity Substation	1984 - 1996	56611
P	305m NE	Electricity Substation	1982 - 1986	55295
P	305m NE	Electricity Substation	1975	55712
P	318m NE	Electricity Substation	1989	58107
P	319m NE	Electricity Substation	1995	63511
C	347m SW	Electricity Substation	1971 - 1996	55254
11	363m N	Electricity Substation	1988 - 1998	61026
Y	443m N	Electricity Substation	1994 - 1998	50130
Y	443m N	Electricity Substation	1988	56224
AD	443m NW	Electricity Substation	1994 - 1998	51780
AD	444m NW	Electricity Substation	1978	55485



ID	Location	Land use	Dates present	Group ID
AD	444m NW	Electricity Substation	1988	50227
AB	472m NE	Electricity Substation	1975 - 1989	54217
I	474m E	Electricity Substation	1985 - 1993	62186
I	486m E	Electricity Substation	1985	63176
I	487m E	Electricity Substation	1993	60588
I	488m E	Electricity Substation	1982 - 1988	56825
AH	489m E	Electricity Substation	1985 - 1993	55646
21	490m W	Electricity Substation	1973 - 1996	62768

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

61

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
D	On site	Garage	1978 - 1985	16981
D	On site	Garage	1957	18790
D	On site	Garage	1958	19051



ID	Location	Land use	Dates present	Group ID
D	On site	Garage	1989	20271
D	On site	Garage	1989	20848
2	On site	Garage	1989 - 1995	16425
F	45m N	Garage	1978 - 1988	16737
F	46m N	Garage	1957 - 1958	18969
F	47m N	Garage	1957	21626
G	47m W	Garage	1958	18621
G	47m W	Garage	1978 - 1988	20279
G	47m W	Garage	1957	21413
F	56m N	Garage	1958	17907
F	63m N	Garage	1978 - 1988	20900
E	106m NE	Garage	1982	17226
E	109m NE	Garage	1985	16699
E	130m NE	Garage	1957 - 1958	21143
E	130m NE	Garage	1988	21661
E	131m NE	Garage	1982	19973
K	131m E	Garage	1988	20122
E	134m NE	Garage	1993	17815
K	145m E	Garage	1957 - 1958	18288
E	183m NE	Garage	1985	17573
E	188m NE	Garage	1982	17944
E	188m NE	Garage	1985	20886
K	203m SE	Garage	1985	18687
K	203m SE	Garage	1991 - 1993	20508
K	205m SE	Garage	1985	16493
K	228m SE	Garage	1993 - 1995	18454
K	228m SE	Garage	1987	18483
K	229m SE	Garage	1984	18891



ID	Location	Land use	Dates present	Group ID
E	236m NE	Garage	1957	18906
E	237m NE	Garage	1957 - 1959	20329
O	244m S	Garage	1984	18842
O	246m S	Garage	1958	18030
O	246m S	Garage	1957	18063
O	246m S	Garage	1971	21108
R	271m N	Garage	1994 - 1998	18480
R	272m N	Garage	1988	20552
R	273m N	Garage	1978 - 1987	21586
R	273m N	Garage	1959	18641
9	289m N	Garage	1959	20533
R	297m N	Garage	1994 - 1998	20320
R	298m N	Garage	1988	20038
R	305m N	Garage	1959	18642
P	335m NE	Garage	1959	18932
P	335m NE	Garage	1982 - 1989	20374
P	343m NE	Garage	1995	18195
P	346m NE	Garage	1975	19046
P	346m NE	Garage	1957	19348
U	358m W	Garage	1958	18675
U	358m W	Garage	1985	21146
U	359m W	Garage	1993	19925
U	359m W	Garage	1973	17720
U	359m W	Garage	1957	19155
U	359m W	Garage	1990	20496
V	360m E	Garage	1991 - 1995	17118
V	360m E	Garage	1984 - 1988	21245
AG	445m SW	Carriage Shed	1930	21519



ID	Location	Land use	Dates present	Group ID
AG	446m SW	Carriage Shed	1957 - 1958	17792
AG	446m SW	Carriage Shed	1910	20353

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

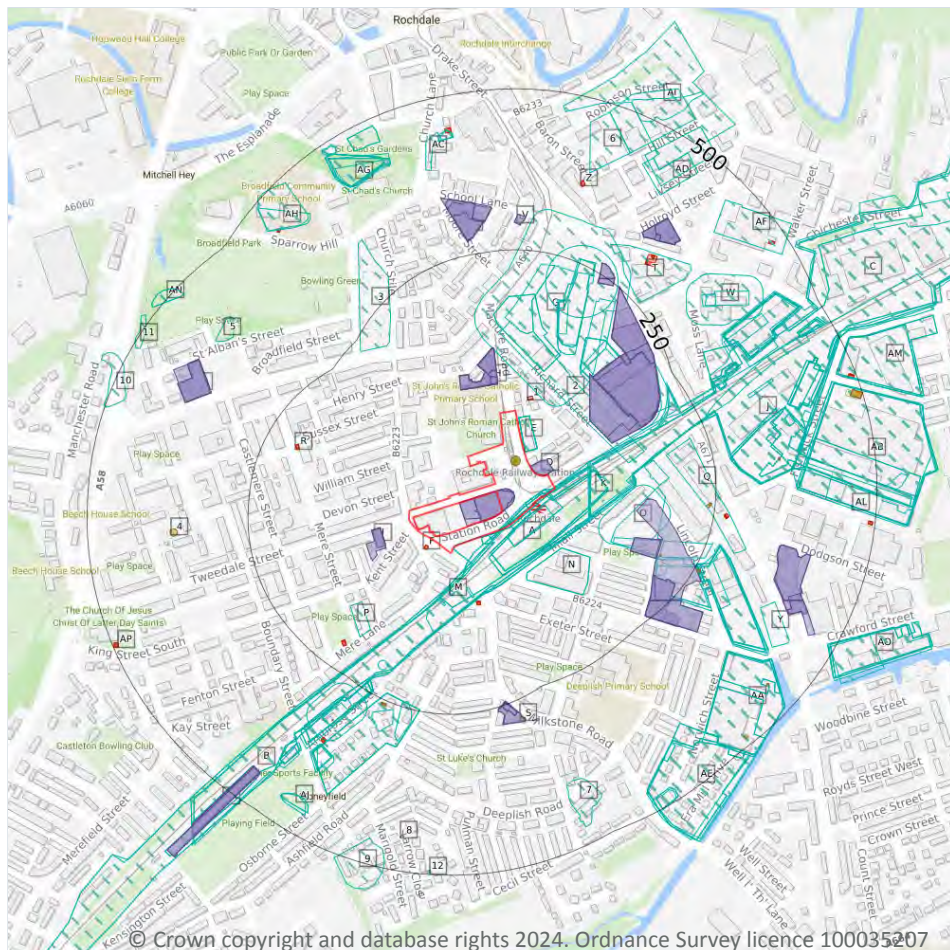
0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

2.1 Historical industrial land uses

Records within 500m

237

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 28](#) >

ID	Location	Land Use	Date	Group ID
A	On site	Railway Sidings	1992	739569
A	On site	Railway Sidings	1987	739569
A	On site	Railway Sidings	1975	752992



ID	Location	Land Use	Date	Group ID
A	On site	Railway Station	1956	759337
A	On site	Railway Station	1968	792011
A	On site	Railway Station	1938	742821
A	On site	Railway Station	1928	742821
A	On site	Railway Station	1908	742821
A	On site	Railway Station	1891	742821
B	On site	Railway Sidings	1956	759022
B	On site	Railway Sidings	1968	752992
C	On site	Railway Sidings	1938	749500
C	On site	Railway Sidings	1891	721500
E	1m NE	Fire Station	1992	728084
E	1m NE	Fire Station	1987	728084
E	1m NE	Fire Station	1975	728084
E	1m NE	Fire Station	1968	728084
C	1m E	Railway Sidings	1928	788774
C	1m E	Railway Sidings	1908	793524
A	2m S	Railway Building	1928	797034
A	2m S	Railway Building	1908	797034
A	8m SE	Railway Station	1992	802556
A	8m SE	Railway Station	1987	802556
A	11m SE	Railway Station	1975	792391
G	43m N	Canal Wharf	1891	791809
J	52m E	Railway Sidings	1976	752992
K	54m E	Railway Buildings	1954	657836
L	54m E	Railway Sidings	1954	735168
K	55m E	Railway Station	1967	799410
L	55m E	Railway Sidings	1967	758938
M	58m SW	Railway Building	1938	703085



ID	Location	Land Use	Date	Group ID
M	60m S	Railway Building	1938	703103
2	66m NE	Warehouse	1851	699988
M	72m SW	Railway Building	1938	703084
G	75m N	Unspecified Commercial/Industrial	1938	743294
G	75m N	Unspecified Commercial/Industrial	1891	711167
N	76m SE	Unspecified Works	1992	758932
N	76m SE	Unspecified Works	1987	758932
O	86m E	Unspecified Works	1967	745228
G	104m NE	Canal Basin	1851	682817
C	111m E	Railway Building	1954	703102
O	113m E	Unspecified Works	1976	745228
G	116m NE	Canal Wharf	1851	754209
G	117m NE	Cotton Mill	1851	654857
G	117m NE	Canal Wharf	1851	723383
O	120m SE	Unspecified Mills	1938	670041
G	120m NE	Unspecified Mills	1928	735408
G	120m NE	Unspecified Mills	1908	735408
G	120m NE	Unspecified Mills	1891	735408
G	121m N	Canal Wharf	1851	712527
G	126m NE	Canal Wharf	1938	749765
G	127m NE	Canal Wharf	1928	761946
G	127m NE	Canal Wharf	1908	761946
G	128m NE	Unspecified Mills	1938	759064
G	136m N	Unspecified Depot	1968	669557
P	141m SW	Unspecified Mill	1908	673511
C	143m E	Corn Mill	1851	658546
G	144m NE	Unspecified Mills	1891	753103
G	146m NE	Unspecified Commercial/Industrial	1976	670608



ID	Location	Land Use	Date	Group ID
G	146m NE	Unspecified Works	1967	683337
G	150m NE	Cotton Mill	1851	654858
G	160m NE	Unspecified Mills	1938	724514
G	160m NE	Unspecified Mills	1928	724514
G	170m N	Unspecified Wharf	1956	692738
Q	180m E	Cotton Mill	1851	654856
O	191m SE	Unspecified Mill	1967	673510
O	193m SE	Unspecified Mills	1954	773124
B	196m SW	Unspecified Tank	1891	698120
O	199m SE	Unspecified Mills	1891	740572
3	204m NW	Grave Yard	1908	663423
O	209m SE	Saw Pit	1851	667282
B	231m SW	Unspecified Commercial/Industrial	1992	798487
B	231m SW	Unspecified Commercial/Industrial	1987	798487
B	231m SW	Unspecified Commercial/Industrial	1975	798487
B	231m SW	Unspecified Commercial/Industrial	1968	798487
B	238m SW	Engineering Works	1938	756241
B	238m SW	Engineering Works	1928	756241
B	238m SW	Shuttle Works	1908	665819
B	239m SW	Unspecified Works	1992	744651
B	239m SW	Unspecified Works	1987	744651
B	239m SW	Unspecified Works	1975	744651
B	240m S	Unspecified Pit	1968	675387
B	245m SW	Engineering Works	1956	801389
O	250m E	Unspecified Mills	1938	768239
O	250m E	Unspecified Mills	1928	768239
O	250m E	Unspecified Mills	1908	768239
O	250m E	Unspecified Works	1967	719228



ID	Location	Land Use	Date	Group ID
T	256m NE	Unspecified Mill	1976	673506
O	257m E	Unspecified Mills	1954	797554
B	258m SW	Unspecified Works	1908	799324
B	259m SW	Cuttings	1968	653240
J	259m E	Railway Sidings	1851	786808
O	262m E	Unspecified Tank	1891	698122
O	266m E	Unspecified Works	1976	719228
J	276m E	Railway Works	1954	767530
J	278m E	Unspecified Works	1976	733960
J	278m E	Unspecified Works	1967	733960
J	279m E	Railway Works	1938	796027
J	279m E	Railway Works	1928	796027
J	279m E	Unspecified Commercial/Industrial	1908	775660
J	279m E	Unspecified Commercial/Industrial	1891	775660
B	288m SW	Iron Works	1891	655407
J	292m NE	Railway Buildings	1954	732694
J	293m NE	Railway Buildings	1967	789330
J	295m NE	Railway Buildings	1938	741686
J	295m NE	Railway Buildings	1928	741686
J	295m NE	Railway Buildings	1908	741686
J	295m NE	Railway Buildings	1891	741686
W	306m NE	Goods Station	1967	708217
J	318m NE	Goods Station	1954	764720
J	319m NE	Goods Station	1938	720641
J	319m NE	Goods Station	1928	720641
J	319m NE	Goods Station	1908	720641
J	319m NE	Goods Station	1891	720641
J	319m NE	Railway Building	1976	703094



ID	Location	Land Use	Date	Group ID
J	332m E	Railway Station	1851	666378
W	333m NE	Smithy	1908	680314
W	337m NE	Goods Station	1976	708217
J	341m NE	Warehouse	1851	699989
J	341m NE	Goods Shed	1976	771039
J	341m NE	Goods Shed	1967	801340
J	344m NE	Goods Shed	1954	781022
J	345m NE	Goods Shed	1938	707532
J	345m NE	Goods Shed	1928	707532
J	345m NE	Goods Shed	1908	707532
J	345m NE	Goods Shed	1891	707532
J	354m NE	Warehouse	1851	699990
B	359m SW	Unspecified Mill	1928	804471
B	359m SW	Unspecified Mill	1908	804471
B	360m SW	Unspecified Works	1938	732227
B	361m SW	Unspecified Ground Workings	1956	660709
J	368m E	Railway Building	1976	801045
J	368m E	Railway Building	1967	801045
AA	369m SE	Unspecified Mill	1938	740203
AA	369m SE	Unspecified Mill	1928	740203
AA	369m SE	Unspecified Mills	1908	791141
AA	369m SE	Unspecified Commercial/Industrial	1891	670616
Y	369m SE	Unspecified Works	1976	683325
AA	370m SE	Unspecified Mill	1976	772460
AA	370m SE	Unspecified Mill	1967	772460
AA	370m SE	Unspecified Mills	1954	739703
J	373m E	Railway Building	1976	758763
J	373m E	Railway Building	1967	758763



ID	Location	Land Use	Date	Group ID
AB	375m E	Unspecified Works	1976	740131
AB	375m E	Unspecified Works	1967	740131
AB	377m E	Railway Works	1954	780549
B	377m SW	Marble Works	1908	785703
B	380m SW	Marble Works	1938	752609
B	380m SW	Marble Works	1928	723185
AB	380m E	Railway Works	1938	771981
AB	380m E	Railway Works	1928	771981
AB	380m E	Railway Works	1908	771981
AB	380m E	Iron Works	1891	655408
5	384m NW	Unspecified Pit	1968	676517
J	384m E	Railway Building	1976	709707
J	384m E	Goods Shed	1967	795743
B	386m SW	Marble Works	1956	793310
J	387m E	Railway Building	1938	789421
J	387m E	Railway Building	1928	789421
J	387m E	Railway Building	1908	772456
J	387m E	Goods Shed	1891	731508
6	387m N	Unspecified Works	1976	780183
J	388m E	Railway Building	1954	789463
AC	392m N	Unspecified Ground Workings	1968	660711
J	396m E	Railway Building	1976	703093
AA	398m SE	Unspecified Mill	1976	732906
AA	398m SE	Unspecified Mill	1967	732906
7	400m S	Gravel Pit	1851	699655
AD	404m NE	Rope Walk	1851	691271
AE	405m SE	Unspecified Works	1976	720442
AE	405m SE	Unspecified Works	1967	720442



ID	Location	Land Use	Date	Group ID
AF	415m NE	Unspecified Works	1976	683324
AG	415m NW	Unspecified Pit	1956	765547
AD	416m NE	Unspecified Mill	1976	673505
AG	418m NW	Unspecified Pit	1938	735871
AG	418m NW	Unspecified Pit	1891	775012
AG	419m NW	Unspecified Pit	1928	782337
AE	419m SE	Iron Works	1938	735298
AE	419m SE	Iron Works	1928	735298
AE	419m SE	Unspecified Mills	1908	793508
AH	420m NW	Unspecified Pit	1908	737134
AG	421m NW	Unspecified Pit	1992	784754
AG	421m NW	Unspecified Pit	1987	784754
AG	421m NW	Unspecified Pit	1975	784754
AG	421m NW	Unspecified Pit	1968	784754
AE	422m SE	Iron Works	1954	795535
AH	424m NW	Unspecified Pit	1968	739352
AC	433m N	Unspecified Heap	1938	790575
AC	434m N	Unspecified Heap	1928	790575
AI	436m NE	Brick Field	1851	654524
AI	438m N	Unspecified Works	1976	793474
AJ	444m SW	Unspecified Pit	1938	777173
AJ	444m SW	Unspecified Pit	1928	777173
AJ	445m SW	Unspecified Pit	1956	748934
L	446m NE	Railway Building	1976	733197
L	446m NE	Railway Building	1967	733197
AK	447m SW	Carriage Shed	1938	797654
AK	447m SW	Carriage Shed	1928	795082
AK	447m SW	Carriage Shed	1908	752861



ID	Location	Land Use	Date	Group ID
L	447m NE	Railway Building	1954	731397
L	448m NE	Railway Building	1938	797617
L	448m NE	Railway Building	1928	797617
L	448m NE	Railway Building	1908	797617
L	448m NE	Railway Building	1891	797617
AK	456m SW	Carriage Shed	1956	793718
AK	456m SW	Railway Building	1968	707591
9	460m S	Refuse Heap	1908	656592
AL	460m E	Pump	1851	682643
AG	461m N	Unspecified Commercial/Industrial	1928	670614
AG	461m N	Corn Mill	1908	658548
L	469m E	Railway Buildings	1954	785425
L	470m E	Railway Buildings	1938	743962
L	470m E	Railway Buildings	1908	764149
AM	472m E	Unspecified Commercial/Industrial	1976	670632
AM	472m E	Unspecified Works	1967	683338
AM	472m E	Iron Works	1954	751967
L	473m E	Railway Buildings	1928	778759
10	474m W	Refuse Heap	1851	656683
AM	474m E	Iron Works	1938	775206
AM	474m E	Iron Works	1928	775206
AE	477m SE	Sand Pit	1938	748827
AE	477m SE	Sand Pit	1928	748827
AG	477m NW	Mortuary	1938	728632
AG	479m NW	Mortuary	1928	728632
AE	480m SE	Sand Pit	1954	755984
AN	485m NW	Unspecified Heap	1938	787950
AN	485m NW	Unspecified Heap	1928	787950



ID	Location	Land Use	Date	Group ID
AO	488m SE	Unspecified Commercial/Industrial	1976	763419
AO	488m SE	Unspecified Commercial/Industrial	1967	763419
11	488m W	Unspecified Ground Workings	1890	661879
AO	490m SE	Unspecified Mills	1954	728377
AO	491m SE	Unspecified Mills	1938	776665
AO	491m SE	Unspecified Mills	1928	776665
AO	491m SE	Unspecified Mills	1908	776665
AI	491m N	Refuse Heap	1851	656627
12	493m S	Shed	1851	658377
AO	493m SE	Cotton Mill	1851	654854

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	21
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Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 28 >](#)

ID	Location	Land Use	Date	Group ID
O	193m E	Unspecified Tank	1958	87629
Q	238m E	Unspecified Tank	1891	107836
Q	241m E	Unspecified Tank	1958	107802
Q	241m E	Unspecified Tank	1957	106027
B	247m SW	Unspecified Tank	1958	98979
B	247m SW	Unspecified Tank	1957	98921
B	255m SW	Unspecified Tank	1984	93909
B	255m SW	Unspecified Tank	1990	93909
O	255m E	Unspecified Tank	1891	87642
B	256m SW	Unspecified Tank	1971	93909



ID	Location	Land Use	Date	Group ID
B	317m SW	Tank or Trough	1910	83586
J	350m E	Unspecified Tank	1891	99740
J	350m E	Unspecified Tank	1910	99740
4	360m W	Unspecified Tank	1993	86910
8	444m S	Unspecified Tank	1971	86912
AA	448m SE	Unspecified Tank	1891	87630
AL	461m E	Unspecified Tank	1910	87646
L	481m E	Tanks	1985	102791
L	481m E	Tanks	1988	102890
L	481m E	Tanks	1985	102890
AA	484m SE	Unspecified Tank	1891	87631

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	70
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Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 28 >](#)

ID	Location	Land Use	Date	Group ID
F	13m SW	Electricity Substation	1995	58983
F	13m SW	Electricity Substation	1989	58983
1	26m N	Electricity Substation	1995	47221
M	85m S	Electricity Substation	1984	50060
M	85m S	Electricity Substation	1990	50060
M	85m S	Electricity Substation	1996	50060
M	85m S	Electricity Substation	1994	50060
M	86m S	Electricity Substation	1971	50060
R	196m W	Electricity Substation	1978	63515



ID	Location	Land Use	Date	Group ID
R	196m W	Electricity Substation	1985	63515
R	196m W	Electricity Substation	1988	63515
R	197m W	Electricity Substation	1995	58624
R	197m W	Electricity Substation	1989	63515
P	204m SW	Electricity Substation	1996	59157
P	204m SW	Electricity Substation	1994	59157
P	204m SW	Electricity Substation	1984	61785
P	206m SW	Electricity Substation	1971	53208
Q	266m E	Electricity Substation	1982	59068
Q	266m E	Electricity Substation	1982	59068
Q	266m E	Electricity Substation	1982	59068
Q	266m E	Electricity Substation	1988	59068
Q	266m E	Electricity Substation	1985	59068
Q	266m E	Electricity Substation	1985	59068
Q	267m E	Electricity Substation	1993	59068
S	275m S	Electricity Substation	1996	56611
S	275m S	Electricity Substation	1994	56611
S	276m S	Electricity Substation	1984	56611
S	276m S	Electricity Substation	1990	56611
T	305m NE	Electricity Substation	1982	55295
T	305m NE	Electricity Substation	1986	55295
T	305m NE	Electricity Substation	1975	55712
T	318m NE	Electricity Substation	1989	58107
T	319m NE	Electricity Substation	1995	63511
B	347m SW	Electricity Substation	1996	55254
B	347m SW	Electricity Substation	1994	55254
B	349m SW	Electricity Substation	1984	55254
B	349m SW	Electricity Substation	1990	55254



ID	Location	Land Use	Date	Group ID
B	350m SW	Electricity Substation	1971	55254
Z	363m N	Electricity Substation	1994	61026
Z	363m N	Electricity Substation	1998	61026
Z	365m N	Electricity Substation	1988	61026
AC	443m N	Electricity Substation	1994	50130
AC	443m N	Electricity Substation	1998	50130
AC	443m N	Electricity Substation	1988	56224
AH	443m NW	Electricity Substation	1994	51780
AH	443m NW	Electricity Substation	1998	51780
AH	444m NW	Electricity Substation	1978	55485
AH	444m NW	Electricity Substation	1988	50227
AF	472m NE	Electricity Substation	1982	54217
AF	472m NE	Electricity Substation	1986	54217
AF	472m NE	Electricity Substation	1989	54217
AF	472m NE	Electricity Substation	1975	54217
L	474m E	Electricity Substation	1993	62186
L	475m E	Electricity Substation	1988	62186
L	475m E	Electricity Substation	1985	62186
L	486m E	Electricity Substation	1985	63176
L	487m E	Electricity Substation	1993	60588
L	488m E	Electricity Substation	1982	56825
L	488m E	Electricity Substation	1982	56825
L	488m E	Electricity Substation	1982	56825
L	488m E	Electricity Substation	1988	56825
L	488m E	Electricity Substation	1985	56825
AL	489m E	Electricity Substation	1993	55646
AL	489m E	Electricity Substation	1985	55646
AL	490m E	Electricity Substation	1988	55646



ID	Location	Land Use	Date	Group ID
AL	490m E	Electricity Substation	1985	55646
AP	490m W	Electricity Substation	1978	62768
AP	491m W	Electricity Substation	1996	62768
AP	492m W	Electricity Substation	1973	62768
AP	492m W	Electricity Substation	1990	62768

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0
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Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	98
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Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 28 >](#)

ID	Location	Land Use	Date	Group ID
A	On site	Garage	1958	19051
A	On site	Garage	1989	20848
A	On site	Garage	1989	20271
A	On site	Garage	1957	18790
A	On site	Garage	1978	16981
A	On site	Garage	1985	16981
D	On site	Garage	1989	16425
D	On site	Garage	1995	16425



ID	Location	Land Use	Date	Group ID
H	45m N	Garage	1988	16737
H	45m N	Garage	1978	16737
H	45m N	Garage	1985	16737
H	46m N	Garage	1957	18969
H	47m N	Garage	1958	18969
H	47m N	Garage	1957	21626
I	47m W	Garage	1958	18621
I	47m W	Garage	1988	20279
I	47m W	Garage	1978	20279
I	47m W	Garage	1985	20279
I	47m W	Garage	1957	21413
H	56m N	Garage	1958	17907
H	63m N	Garage	1988	20900
H	63m N	Garage	1978	20900
H	63m N	Garage	1985	20900
G	106m NE	Garage	1982	17226
G	106m NE	Garage	1982	17226
G	106m NE	Garage	1982	17226
G	109m NE	Garage	1985	16699
G	130m NE	Garage	1957	21143
G	130m NE	Garage	1988	21661
G	130m NE	Garage	1985	16699
G	131m NE	Garage	1958	21143
G	131m NE	Garage	1982	19973
G	131m NE	Garage	1982	19973
G	131m NE	Garage	1982	19973
O	131m E	Garage	1988	20122
G	134m NE	Garage	1993	17815



ID	Location	Land Use	Date	Group ID
O	145m E	Garage	1958	18288
O	146m E	Garage	1957	18288
G	183m NE	Garage	1985	17573
G	188m NE	Garage	1982	17944
G	188m NE	Garage	1982	17944
G	188m NE	Garage	1982	17944
G	188m NE	Garage	1985	20886
O	203m SE	Garage	1985	18687
O	203m SE	Garage	1993	20508
O	205m SE	Garage	1985	16493
O	228m SE	Garage	1995	18454
O	228m SE	Garage	1993	18454
O	228m SE	Garage	1987	18483
O	229m SE	Garage	1984	18891
O	229m SE	Garage	1991	20508
G	236m NE	Garage	1957	18906
G	237m NE	Garage	1958	20329
G	243m NE	Garage	1959	20329
G	243m NE	Garage	1957	20329
S	244m S	Garage	1984	18842
S	246m S	Garage	1958	18030
S	246m S	Garage	1971	21108
S	246m S	Garage	1957	18063
U	271m N	Garage	1998	18480
U	271m N	Garage	1994	18480
U	272m N	Garage	1988	20552
U	273m N	Garage	1987	21586
U	273m N	Garage	1978	21586

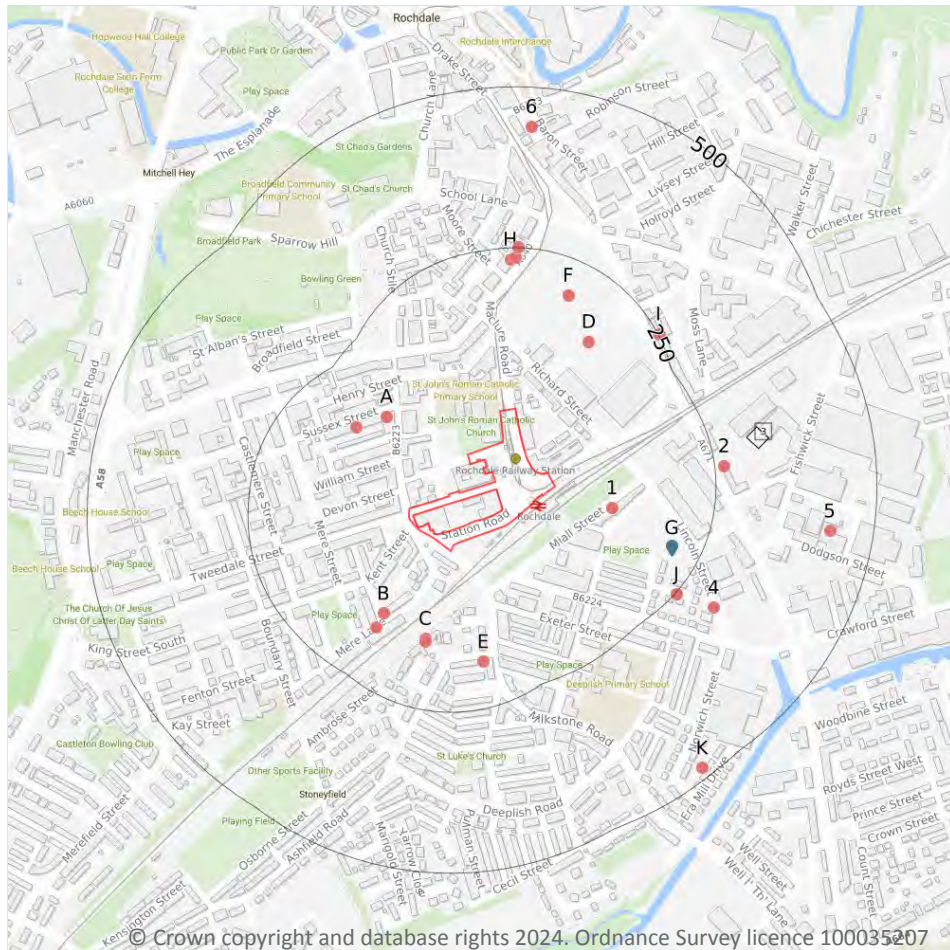
ID	Location	Land Use	Date	Group ID
U	273m N	Garage	1959	18641
V	289m N	Garage	1959	20533
V	289m N	Garage	1959	20533
U	297m N	Garage	1998	20320
U	297m N	Garage	1994	20320
U	298m N	Garage	1988	20038
U	305m N	Garage	1959	18642
T	335m NE	Garage	1959	18932
T	335m NE	Garage	1982	20374
T	335m NE	Garage	1986	20374
T	335m NE	Garage	1989	20374
T	343m NE	Garage	1995	18195
T	346m NE	Garage	1957	19348
T	346m NE	Garage	1975	19046
X	358m W	Garage	1958	18675
X	358m W	Garage	1985	21146
X	359m W	Garage	1993	19925
X	359m W	Garage	1973	17720
X	359m W	Garage	1957	19155
X	359m W	Garage	1990	20496
X	359m W	Garage	1990	20496
Y	360m E	Garage	1993	17118
Y	360m E	Garage	1988	21245
Y	360m E	Garage	1985	21245
Y	394m E	Garage	1984	21245
Y	394m E	Garage	1991	17118
Y	400m E	Garage	1985	21245
Y	404m E	Garage	1995	17118

ID	Location	Land Use	Date	Group ID
Y	404m E	Garage	1993	17118
Y	404m E	Garage	1987	21245
AK	445m SW	Carriage Shed	1930	21519
AK	446m SW	Carriage Shed	1958	17792
AK	446m SW	Carriage Shed	1910	20353
AK	447m SW	Carriage Shed	1957	17792

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (EA/NRW)
- Licensed waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m	0
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Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	1
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Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on [page 46 >](#)

ID	Location	Details		
3	307m E	Site Address: Fishwick Street, Rochdale Licence Holder Address: Off Fishwick Street, Rochdale	Waste Licence: Yes Site Reference: RD/LIC/477/87 Waste Type: Inert, Industrial, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 04/06/1987 Licence Surrender: 10/10/1990	Operator: - Licence Holder: Rochdale Timber Company First Recorded 01/07/1987 Last Recorded: 31/12/1989

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	0
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Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	4
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Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on [page 46 >](#)

ID	Location	Details		
G	205m E	Site Name: Rochdale Auto Spares Site Address: Cronshaw Industrial Estate, Lincoln Street, Deeplish, Rochdale, Lancashire, OL11 1LR Correspondence Address: 4, Harwin Close, Shawclough, Rochdale, Lancashire, OL12 7UY	Type of Site: Metal Recycling Site (mixed MRS's) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AAL001 EPR reference: - Operator: Mohammed Asam & Habib Ahmed Latif Waste Management licence No: 50378 Annual Tonnage: 0	Issue Date: 04/04/2005 Effective Date: 03/10/2006 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred
G	205m E	Site Name: Rochdale Auto Spares Site Address: Cronshaw Industrial Estate, Lincoln Street, Deeplish, Rochdale, Lancashire, OL11 1LR Correspondence Address: 81-119, Durham Street, Cronshaw Ind. Estate, Rochdale, Lancs, OL11 1LR	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JAP001 EPR reference: - Operator: Shehzad Suleman And Habib Latif Waste Management licence No: 50378 Annual Tonnage: 0	Issue Date: 04/04/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
G	205m E	Site Name: Rochdale Auto Spares Site Address: Cronshaw Industrial Estate, Lincoln Street, Deeplish, Rochdale, Lancashire, OL11 1LR Correspondence Address: Shehzad Suleman, 81-119, Durham Street, Cronshaw Ind. Estate, Rochdale, Lancs, OL11 1LR	Type of Site: ELV Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JAP001 EPR reference: - Operator: Shehzad Suleman And Habib Latif Waste Management licence No: 50378 Annual Tonnage: 0	Issue Date: 04/04/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
G	205m E	Site Name: Rochdale Auto Spares Site Address: Cronshaw Industrial Estate, Lincoln Street, Deeplish, Rochdale, Lancashire, OL11 1LR Correspondence Address: -	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 655696 EPR reference: EA/EPR/ZP3194CL Operator: Mohammed Asam & Habib Ahmed Latif Waste Management licence No: 50378 Annual Tonnage: 0	Issue Date: 04/04/2005 Effective Date: 04/04/2005 Modified: - Surrendered Date: 04/04/2005 Expiry Date: - Cancelled Date: - Status: Surrendered

This data is sourced from the Environment Agency and Natural Resources Wales.



3.7 Waste exemptions

Records within 500m	30
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Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 46](#) >

ID	Location	Site	Reference	Category	Sub-Category	Description
1	95m E	Regal House Miall Street Rochdale Lancashire OL11 1hy	EPR/DE5682Q M/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place
A	139m NW	Liley Street Autos, Liley Street, Rochdale, OL111el	WEX271696	Treating waste exemption	Not on a farm	Recovery of scrap metal
A	139m NW	Liley Street Autos, Liley Street, Rochdale, OL111el	WEX271696	Using waste exemption	Not on a farm	Use of depolluted end-of-life vehicles for vehicle parts
B	141m SW	38, Mere Lane, Rochdale, OL11 3td	WEX345161	Treating waste exemption	Not on a farm	Recovery of scrap metal
C	142m SW	Unit 1, Ashfield Road, Rochdale, OL11 1px	EA/EPR/VP378 9MX/A001	Treating waste exemption	Non-agricultural waste only	Repair or refurbishment of WEEE
C	146m SW	Unit 1, Ashfield Road, Rochdale, OL11 1px	EA/EPR/VP394 3FF/A001	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
A	150m NW	Liley Street Autos, Liley Street, Rochdale, OL111el	WEX130172	Using waste exemption	Not on a farm	Use of depolluted end-of-life vehicles for vehicle parts
A	150m NW	Liley Street Autos, Liley Street, Rochdale, OL111el	WEX130172	Treating waste exemption	Not on a farm	Recovery of scrap metal
D	154m NE	-	WEX335497	Using waste exemption	Not on a farm	Use of waste in construction
D	154m NE	-	WEX335497	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
D	154m NE	-	WEX335497	Using waste exemption	Not on a farm	Use of mulch
B	166m SW	41 Mere Lane, Rochdale, Lancashire, OL11 3td	EA/EPR/VP388 4NQ/A001	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
E	179m S	Ashfield Road, Rochdale, OL11 1px	EXP/WP3044U F	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE



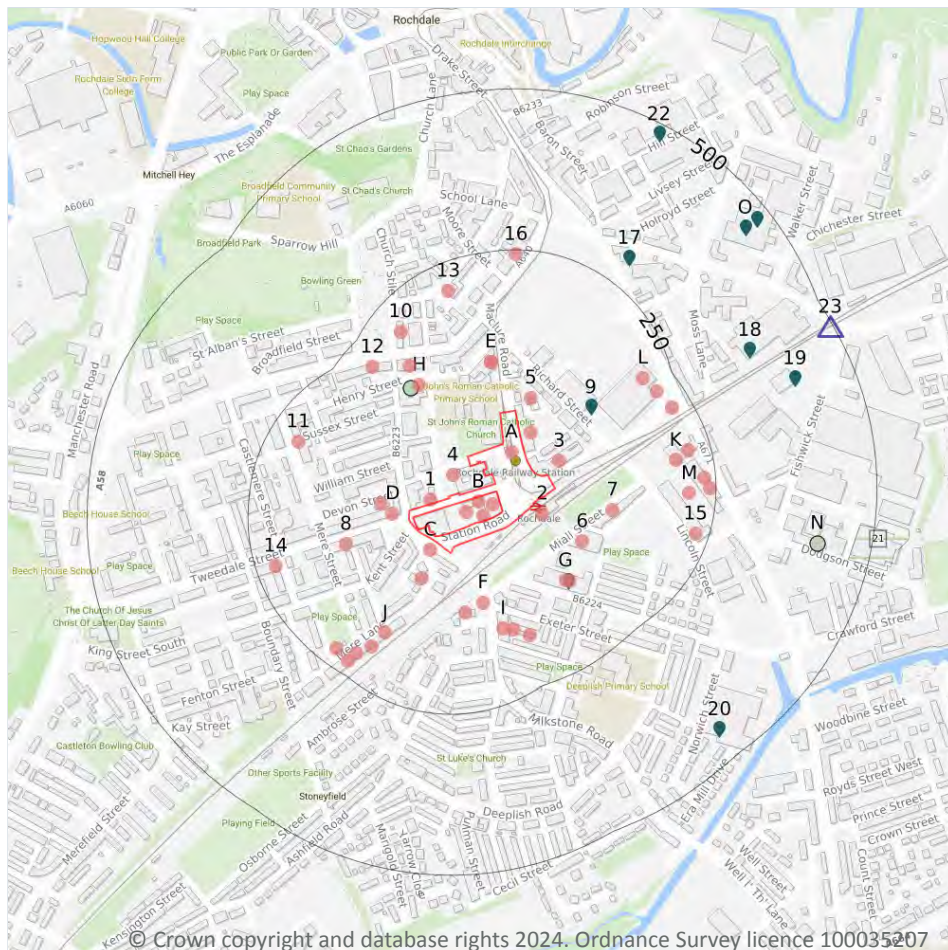
ID	Location	Site	Reference	Category	Sub-Category	Description
E	179m S	Unit 1 The Old Bakery, Ashfield Road, Rochdale, OL11 1px	EA/EPR/WP3044UF/A001	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
F	193m N	-	WEX342033	Using waste exemption	Not on a farm	Use of waste in construction
F	193m N	-	WEX342033	Treating waste exemption	Not on a farm	Screening and blending of waste
H	231m N	130 Drake Street, Rochdale, OL16 1pn	EA/EPR/VP3945UX/A001	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
H	234m N	128 Drake Street, Rochdale, OL16 1pn	EXP/JP3446YN	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
I	250m NE	81-83, Oldham Road, Rochdale, OL16 5qr	WEX352740	Treating waste exemption	Not on a farm	Recovery of scrap metal
H	250m N	130 Drake Street, Rochdale, OL16 1pn	NC3/000012	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
H	250m N	130 Drake Street, Rochdale, OL16 1pn	EXP/WP3045LM	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
I	251m NE	Oldham Road, Rochdale, OL16 5qr	EXP/QP3646YB	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
J	252m SE	-	WEX156841	Treating waste exemption	Not on a farm	Screening and blending of waste
J	252m SE	-	WEX156841	Using waste exemption	Not on a farm	Use of waste in construction
2	264m E	The Landing Oldham Road Rochdale OL16 5qy	EPR/LF0306NP/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place
4	311m SE	-	WEX230901	Using waste exemption	Not on a farm	Use of waste in construction
5	432m E	The Warehouse, 1 Stuart Street, Rochdale, OL16 5nb	WEX298965	Storing waste exemption	Not on a farm	Storage of waste in a secure place
6	438m N	Drill Hall, Baron Street, Rochdale, OL16 1sj	WEX257464	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
K	484m SE	-	WEX156842	Using waste exemption	Not on a farm	Use of waste in construction
K	484m SE	-	WEX156842	Treating waste exemption	Not on a farm	Screening and blending of waste



This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- ▲ Current or recent petrol stations
- Control of Major Accident Hazards
- Licensed pollutant release (Part A(2)/B)
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

49

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 52 >](#)

ID	Location	Company	Address	Activity	Category
A	On site	Rochdale Railway Station (Manchester Metrolink)	Greater Manchester, OL11	Tram, Metro and Light Railway Stations and Stops	Public Transport, Stations and Infrastructure
1	7m W	Stylish Curtains	3-5, Lower Tweeddale Street, Rochdale, Greater Manchester, OL11 1HG	Curtains and Blinds	Consumer Products



ID	Location	Company	Address	Activity	Category
B	7m SW	Laser Plates	Unit 4 Station Approach Business Estate, Station Road, Milkstone, Rochdale, Greater Manchester, OL11 1DR	Vehicle Components	Industrial Products
B	8m SW	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
B	12m S	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
C	15m SW	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
A	17m NE	Ur Auto Care	Maclure Road, Rochdale, Greater Manchester, OL11 1DN	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	17m SW	Business Estate	Greater Manchester, OL11	Business Parks and Industrial Estates	Industrial Features
2	19m SE	Rochdale Rail Station	Greater Manchester, OL11	Railway Stations, Junctions and Halts	Public Transport, Stations and Infrastructure
D	26m W	Niche	4a, Tweedale Street, Rochdale, Greater Manchester, OL11 1HH	Moulds, Dies and Castings	Industrial Products
3	28m NE	P3 Logistics Ltd	Ground Floor Unit 2 Deen House, Station Road, Milkstone, Rochdale, Greater Manchester, OL11 1DS	Packaging	Industrial Products
4	30m W	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
5	31m N	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
D	45m W	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
C	58m SW	Cooker Appliances	Unit 10, Mere Lane, Rochdale, Greater Manchester, OL11 3TD	Electrical Equipment Repair and Servicing	Repair and Servicing
E	81m N	U R Auto Care	Unit 3 10, Maclure Road, Rochdale, Greater Manchester, OL11 1DN	Vehicle Repair, Testing and Servicing	Repair and Servicing
E	81m N	Stop & Go Hand Car Wash	Unit 2 8, Maclure Road, Rochdale, Greater Manchester, OL11 1DN	Vehicle Cleaning Services	Personal, Consumer and Other Services
6	91m SE	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
F	91m S	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
F	95m S	Mars Car Sales	6, Vine Place, Rochdale, Greater Manchester, OL11 1QZ	Secondhand Vehicles	Motoring
7	95m E	C N C Profile Engineering Ltd	Regal House, Miall Street, Rochdale, Greater Manchester, OL11 1HY	Precision Engineers	Engineering Services
8	105m W	Eggfree Cake Box	27, Tweedale Street, Rochdale, Greater Manchester, OL11 1HH	Baking and Confectionery	Foodstuffs
G	121m SE	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
G	126m SE	Mellor Coachcraft	Miall Street, Rochdale, Greater Manchester, OL11 1HY	Vehicle Bodybuilders	Industrial Products
H	133m NW	3 G Autos	Unit 5, 35 Henry Street, Rochdale, Greater Manchester, OL11 1EP	Vehicle Repair, Testing and Servicing	Repair and Servicing
I	142m S	Auto Shop	77, Milkstone Road, Rochdale, Greater Manchester, OL11 1NT	Vehicle Repair, Testing and Servicing	Repair and Servicing
I	153m S	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
H	159m NW	Rochdale Battery Service	137, Drake Street, Rochdale, Greater Manchester, OL16 1QB	Electrical Production and Manipulation Equipment	Industrial Products
J	160m SW	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
I	169m S	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
J	191m SW	Chimney	Greater Manchester, OL11	Chimneys	Industrial Features
K	192m E	Heap Economiser Ltd	2, Oldham Road, Rochdale, Greater Manchester, OL11 1BU	Cooling and Refrigeration	Industrial Products
10	200m NW	J N E Design	36, Church Stile, Rochdale, Greater Manchester, OL16 1QE	Construction Completion Services	Construction Services
11	203m W	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
12	204m NW	E U Recycling Ltd	Prime House 155, Drake Street, Rochdale, Greater Manchester, OL11 1EF	Recycling, Reclamation and Disposal	Recycling Services
L	204m NE	Halfords	Unit 1a Central Retail Park, Oldham Road, Rochdale, Greater Manchester, OL11	Vehicle Parts and Accessories	Motoring



ID	Location	Company	Address	Activity	Category
13	206m N	Rochdale Motor Services	Units 6-7 Great George Street, Rochdale, Greater Manchester, OL16 1QG	Vehicle Repair, Testing and Servicing	Repair and Servicing
M	209m E	Halfpenny Bridge Industrial Estate	Greater Manchester, OL11	Business Parks and Industrial Estates	Industrial Features
J	211m SW	Trendmost Ltd	49, Mere Lane, Rochdale, Greater Manchester, OL11 3TD	Carpets, Flooring, Rugs and Soft Furnishings	Consumer Products
L	213m NE	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
K	215m E	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
14	219m W	Samina Fashions	75, Tweedale Street, Rochdale, Greater Manchester, OL11 3TZ	Clothing, Components and Accessories	Consumer Products
L	220m NE	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
J	222m SW	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
J	228m SW	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
15	229m E	T B A Protective Solutions	Unit 11 Halfpenny Bridge Industrial Estate, Lincoln Close, Rochdale, Greater Manchester, OL11 1NR	Electrical Components	Industrial Products
M	233m E	R C D Leaflet Distribution	Unit 10 Halfpenny Bridge Industrial Estate, Lincoln Street, Rochdale, Greater Manchester, OL11 1NS	Published Goods	Industrial Products
M	240m E	Expert Safety Supplies	Unit 3 Halfpenny Bridge Industrial Estate, Lincoln Street, Rochdale, Greater Manchester, OL11 1NS	Workwear	Industrial Products
16	243m N	Just Beds	126, Drake Street, Rochdale, Greater Manchester, OL16 1PN	Beds and Bedding	Consumer Products

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on [page 52 >](#)

ID	Location	Company	Address	LPG	Status
23	495m NE	OBSOLETE	Milnrow Road, Rochdale, Greater Manchester, OL16 1SY	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**1**

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

Features are displayed on the Current industrial land use map on [page 52 >](#)



ID	Location	Company	Address	Operational status	Tier
21	469m E	Quat-Chem Limited	Quat-Chem Limited, Rochdale, 1-4 Sandfield Industrial Park, Dodgson Street, Rochdale, Lancashire, OL16 5SJ	Current COMAH Site	COMAH Lower Tier Operator

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m **0**

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m **0**

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m **0**

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m **0**

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

9

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on [page 52](#) >

ID	Location	Address	Details	
9	116m NE	Henly Ford, Oldham Rd, OL11 1BU	Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
G	125m SE	Mellor Coachcraft, Miall Street, Rochdale, Lancashire, OL11 1HY	Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
17	296m NE	Northern Accident Repair Ltd, Wood Street, Rochdale, Lancashire, OL16 5QN	Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
18	369m NE	Dresser Mouldings Ltd, Station Yard Sawmills, Wood Street, Rochdale, Lancashire, OL16 5QN	Process: Coating Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
19	410m E	Precision Poured Concrete Ltd, The Old Railway Yard, Fishwick Street, Rochdale, Lancashire, OL16 5NA	Process: Use of Bulk Cement Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
20	452m SE	JJ Makin Converting, Norwich St	Process: Various Foam Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified



ID	Location	Address	Details	
O	456m NE	Taylor Engineering & Plastics, Molesworth Street, Rochdale, Lancashire, OL16 1TP	Process: Manufacture Of Fibre Reinforced Plastics ; Di-isocyanate Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
O	478m NE	Taylor Enginnering and Plastics, 3 March Street, Rochdale, OL16 2AP	Process: Coating Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
22	484m NE	Vale Mill (Homecare) Products, Minky, New Oxford Mill, Bentley Street, Rochdale, Lancashire, OL16 1HR	Process: Coating Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m

0

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.15 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m**6**

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on [page 52 >](#)

ID	Location	Details	
H	138m NW	Incident Date: 08/08/2001 Incident Identification: 22851 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
H	138m NW	Incident Date: 08/08/2001 Incident Identification: 22851 Pollutant: Specific Waste Materials:Specific Waste Materials Pollutant Description: Commercial Waste:Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

ID	Location	Details	
H	138m NW	Incident Date: 08/08/2001 Incident Identification: 22851 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
N	416m E	Incident Date: 25/09/2001 Incident Identification: 32825 Pollutant: Inert Materials and Wastes:Specific Waste Materials Pollutant Description: Construction and Demolition Materials and Wastes:Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
N	416m E	Incident Date: 25/09/2001 Incident Identification: 32825 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
N	416m E	Incident Date: 25/09/2001 Incident Identification: 32825 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m

0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



4.21 Pollution inventory radioactive waste

Records within 500m

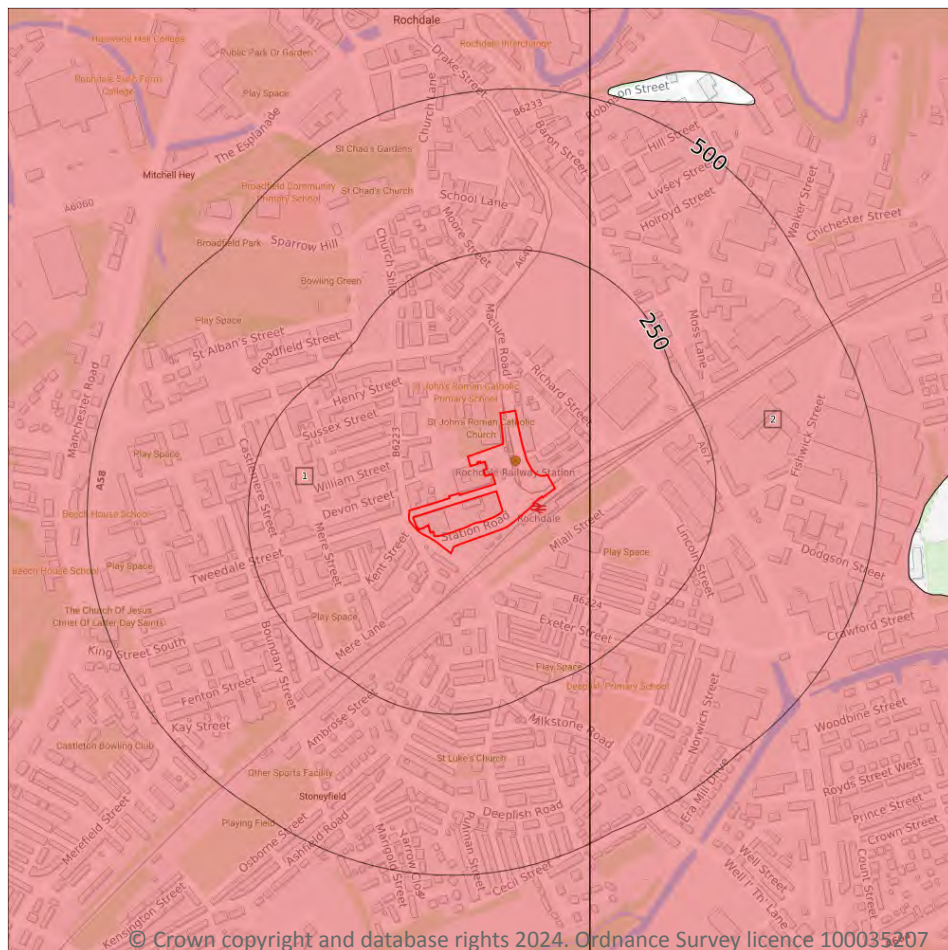
0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Hydrogeology - Superficial aquifer



- Site Outline**
- Search buffers in metres (m)**
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

2

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 63](#) >

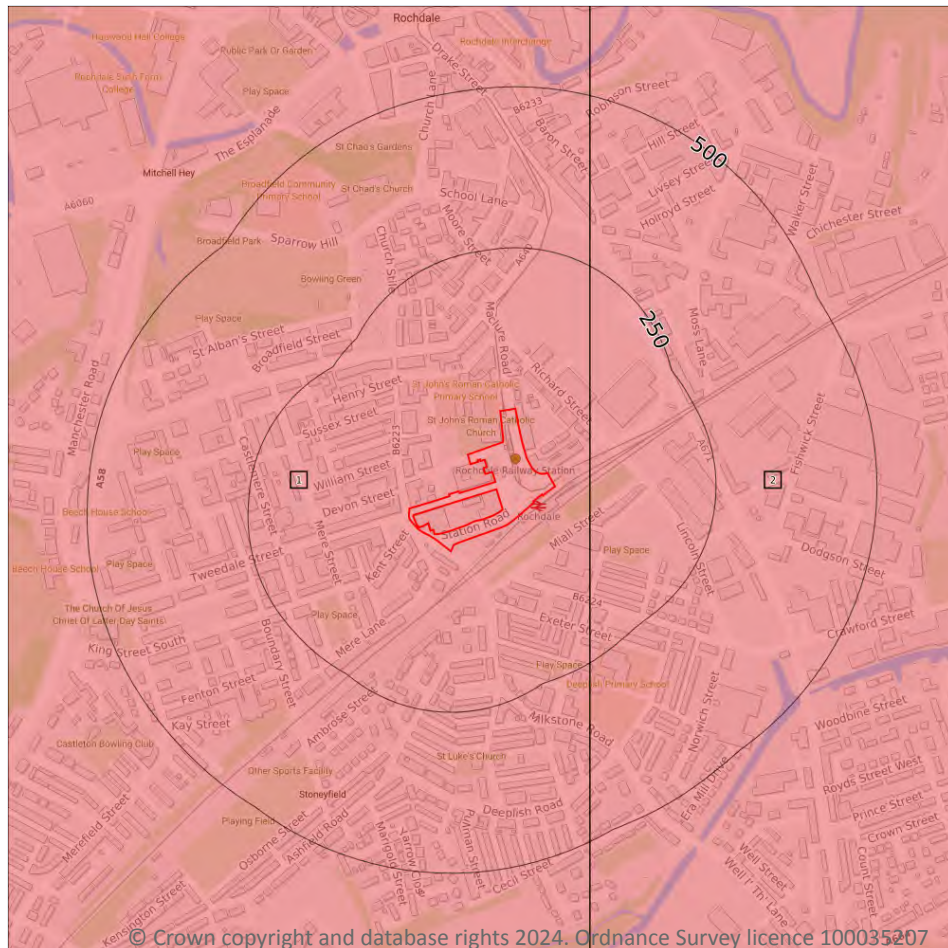
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	54m E	Secondary 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



This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 65](#) >

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	54m E	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



This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m

1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on [page 67](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
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This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	0
------------------------	----------

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)**
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

8

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 69](#) >



ID	Location	Details	
-	1334m NW	Status: Historical Licence No: 2569002050 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, SPOTLAND, ROCHDALE" Data Type: Point Name: ALEXANDER DREW & SONS LTD Easting: 388700 Northing: 413500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 02/05/2000 Version End Date: -
-	1334m NW	Status: Historical Licence No: 2569002050 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, SPOTLAND, ROCHDALE Data Type: Point Name: ALEXANDER DREW LTD. Easting: 388700 Northing: 413500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2003 Version End Date: -
-	1334m NW	Status: Historical Licence No: 2569002050 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES SPOTLAND ROCHDALE Data Type: Point Name: ALEXANDER DREW LTD Easting: 388700 Northing: 413500	Annual Volume (m ³): 500000 Max Daily Volume (m ³): 2100 Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2003 Version End Date: -
-	1808m SE	Status: Historical Licence No: 2569002159 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: "WELL AT FARM, LOWER LANE, MILNROW, ROCHDALE" Data Type: Point Name: HARTLE Easting: 391400 Northing: 411600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1966 Version End Date: -



ID	Location	Details	
-	1808m SE	Status: Historical Licence No: 2569002159 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: WELL AT FARM, LOWER LANE, MILNROW, ROCHDALE Data Type: Point Name: HARTLE Easting: 391400 Northing: 411600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1966 Version End Date: -
-	1808m SE	Status: Historical Licence No: 2569002159 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: WELL AT FARM LOWER LANE MILNROW ROCHDALE Data Type: Point Name: HARTLE Easting: 391400 Northing: 411600	Annual Volume (m ³): 5123.34 Max Daily Volume (m ³): 31.822 Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -
-	1869m SE	Status: Historical Licence No: 2569002060 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "WELL AT CASTLE FARM, LOWER LANE, MILNROW" Data Type: Point Name: SANDERSON Easting: 391400 Northing: 411500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/02/1966 Version End Date: -
-	1869m SE	Status: Historical Licence No: 2569002060 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: WELL AT CASTLE FARM, LOWER LANE, MILNROW Data Type: Point Name: SANDERSON Easting: 391400 Northing: 411500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/02/1966 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.



5.7 Surface water abstractions

Records within 2000m

12

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 69](#) >

ID	Location	Details	
1	515m SE	Status: Historical Licence No: 2569002076 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT ROCHDALE, LANCS Data Type: Point Name: J & J MAKIN CONVERTORS LTD Easting: 390300 Northing: 412300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
A	531m N	Status: Historical Licence No: NW/069/0002/003 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT ROCHDALE WEIR Data Type: Point Name: Transport for Greater Manchester Easting: 389916 Northing: 413325	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: NPS/WR/007633 Original Start Date: 15/06/2010 Expiry Date: 31/03/2026 Issue No: 2 Version Start Date: 23/06/2011 Version End Date: -
A	531m N	Status: Historical Licence No: NW/069/0002/001 Details: Hydroelectric Power Generation Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT ROCHDALE WEIR Data Type: Point Name: Transport for Greater Manchester Easting: 389917 Northing: 413325	Annual Volume (m ³): 36100000 Max Daily Volume (m ³): 164160 Original Application No: NPS/WR/007499 Original Start Date: 15/06/2010 Expiry Date: 31/03/2026 Issue No: 2 Version Start Date: 01/04/2015 Version End Date: -
B	677m S	Status: Historical Licence No: 2569002107 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT QUEENSWAY,ROCHDALE" Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/12/1993 Version End Date: -



ID	Location	Details	
B	677m S	Status: Historical Licence No: 2569002107 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT QUEENSWAY,ROCHDALE" Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/12/1993 Version End Date: -
B	677m S	Status: Historical Licence No: 2569002107 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT QUEENSWAY,ROCHDALE Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m³): 10455.8 Max Daily Volume (m³): 45.46 Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
B	677m S	Status: Historical Licence No: 2569002107 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT QUEENSWAY,ROCHDALE Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m³): 10455.8 Max Daily Volume (m³): 45.46 Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	878m S	Status: Historical Licence No: 2569002178 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "CATCHPIT FED BY SURFACE DRAINAGE AT PREMISES, ROCHDALE" Data Type: Point Name: DUNPHY COMBUSTION LTD. Easting: 390200 Northing: 411800	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 12/02/1991 Version End Date: -



ID	Location	Details	
-	878m S	Status: Historical Licence No: 2569002178 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: CATCHPIT FED BY SURFACE DRAINAGE AT PREMISES, ROCHDALE Data Type: Point Name: DUNPHY COMBUSTION LTD Easting: 390200 Northing: 411800	Annual Volume (m ³): 2318.46 Max Daily Volume (m ³): 34.09 Original Application No: CW 1093 Original Start Date: 18/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 12/02/1991 Version End Date: -
-	1360m NE	Status: Historical Licence No: 2569002249 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "RIVER ROCH AT MELLOROID WORKS, BELFIELD ROAD" Data Type: Point Name: BRITISH MILLERAIN 1922 CO LTD Easting: 390800 Northing: 413800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 100 Version Start Date: 04/11/1991 Version End Date: -
-	1360m NE	Status: Historical Licence No: 2569002249 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT MELLOROID WORKS, BELFIELD ROAD Data Type: Point Name: BRITISH MILLERAIN 1922 CO LTD Easting: 390800 Northing: 413800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 100 Version Start Date: 04/11/1991 Version End Date: -
-	1360m NE	Status: Historical Licence No: 2569002249 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT MELLOROID WORKS BELFIELD ROAD Data Type: Point Name: BRITISH MILLERAIN 1922 CO LTD Easting: 390800 Northing: 413800	Annual Volume (m ³): 213662 Max Daily Volume (m ³): 1136.49 Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 100 Version Start Date: 04/11/1991 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.



5.8 Potable abstractions

Records within 2000m

0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m

0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m

0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on [page 76 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Roch (Source to Spodden)	GB112069064720	Roch Irk Medlock	Irwell

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified

1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on [page 76 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	522m N	River	Roch (Source to Spodden)	GB112069064720 ↗	Moderate	Fail	Moderate	2019

This data is sourced from the Environment Agency and Natural Resources Wales.



6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on [page 76 >](#)

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	Northern Manchester Carboniferous Aquifers	GB41202G101800 ↗	Poor	Poor	Good	2019

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m

0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m

0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m

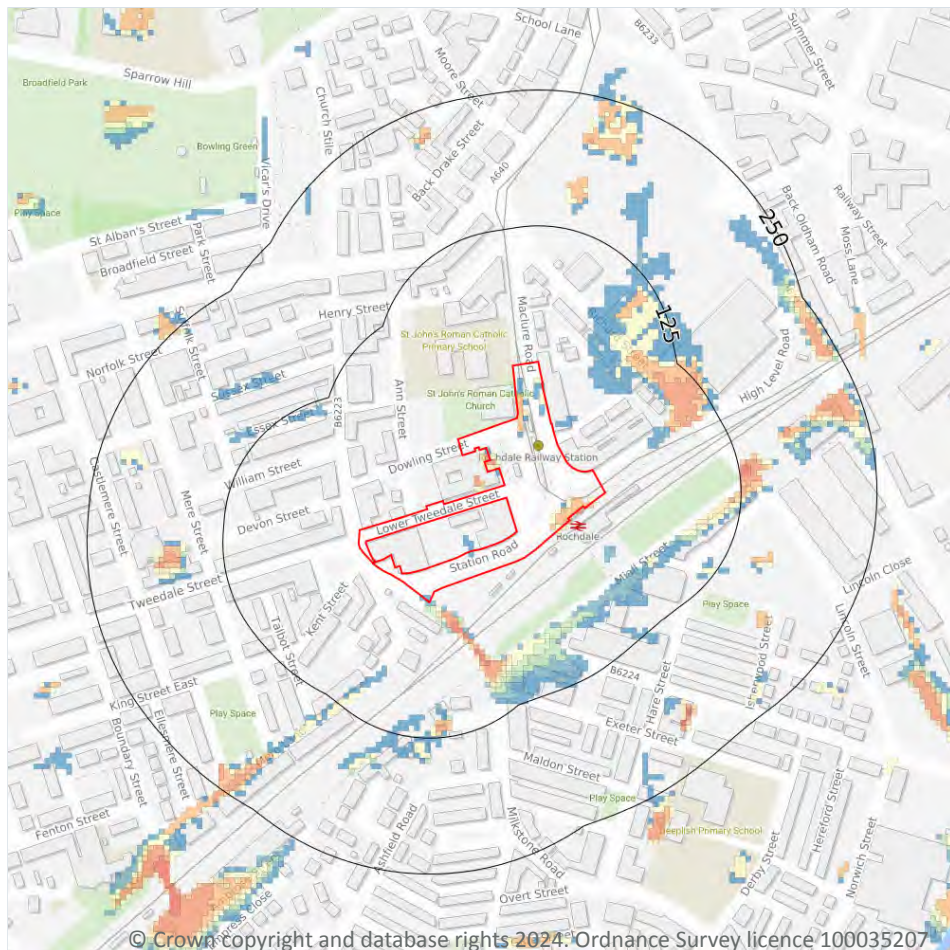
0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, Greater than 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on [page 82 >](#)

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

Moderate

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on [page 84 >](#)

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- Special Areas of Conservation (SAC)

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

5

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on [page 85 >](#)

ID	Location	Name	Data source
A	430m SE	Rochdale Canal	Natural England



ID	Location	Name	Data source
B	838m S	Rochdale Canal	Natural England
C	1065m SW	Rochdale Canal	Natural England
-	1473m SW	Rochdale Canal	Natural England
-	1853m E	Rochdale Canal	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0
-----------------------------	----------

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	5
-----------------------------	----------

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

Features are displayed on the Environmental designations map on [page 85](#) >

ID	Location	Name	Features of interest	Habitat description	Data source
A	430m SE	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England
B	838m S	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England
C	1065m SW	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England



ID	Location	Name	Features of interest	Habitat description	Data source
-	1473m SW	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England
-	1853m E	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	0
-----------------------------	----------

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	0
-----------------------------	----------

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m	0
-----------------------------	----------

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m

0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.



10.12 Proposed Ramsar sites

Records within 2000m**0**

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m**0**

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m**0**

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m**0**

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.



10.16 Nitrate Vulnerable Zones

Records within 2000m

1

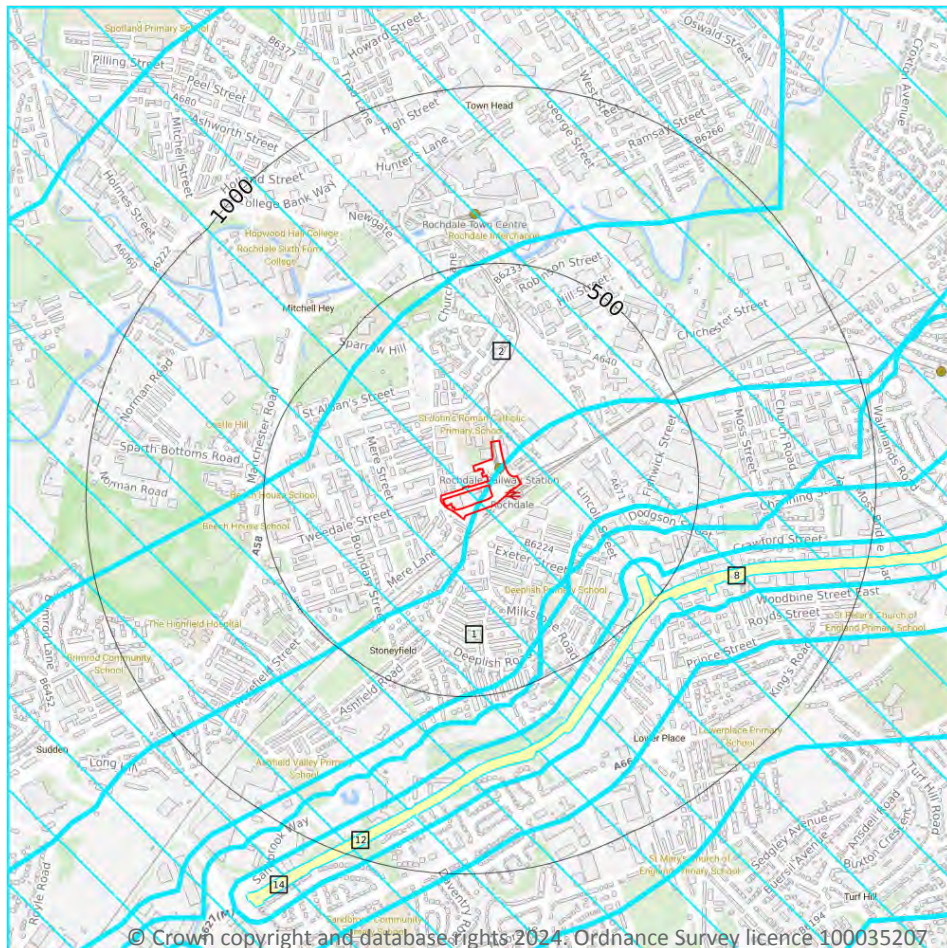
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
1990m S	River Irk (Moston Brook to River Irwell) NVZ	Surface Water	638	Existing

This data is sourced from Natural England and Natural Resources Wales.



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

2

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on [page 91](#) >

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Residential - Residential development of 100 units or more. Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas. Air pollution - Any development that could cause AIR POLLUTION (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons & digestate stores, manure stores). Combustion - All general combustion processes. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management. Composting - Any composting proposal. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .
2	On site	Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Residential - Residential development of 100 units or more. Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .

This data is sourced from Natural England.



10.18 SSSI Units

Records within 2000m

5

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

Features are displayed on the SSSI Impact Zones and Units map on [page 91 >](#)

ID: 8
 Location: 430m SE
 SSSI name: Rochdale Canal
 Unit name: Failsworth
 Broad habitat: Standing Open Water And Canals
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

ID: 12
 Location: 838m S
 SSSI name: Rochdale Canal
 Unit name: Failsworth
 Broad habitat: Standing Open Water And Canals
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

ID: 14
 Location: 1065m SW
 SSSI name: Rochdale Canal
 Unit name: Failsworth
 Broad habitat: Standing Open Water And Canals
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010



ID: -
Location: 1473m SW
SSSI name: Rochdale Canal
Unit name: Failsworth
Broad habitat: Standing Open Water And Canals
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

ID: -
Location: 1853m E
SSSI name: Rochdale Canal
Unit name: Failsworth
Broad habitat: Standing Open Water And Canals
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

This data is sourced from Natural England and Natural Resources Wales.



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-  Site Outline
- Search buffers in metres (m)
-  Listed buildings
-  Conservation areas
-  Conservation areas - no data
-  National Parks
-  Areas of Outstanding Natural Beauty
-  Registered parks and gardens
-  Scheduled Monuments
-  World Heritage Sites

Records within 250m	0
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This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m**0**

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m**0**

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m**3**

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on [page 95 >](#)

ID	Location	Name	Grade	Reference Number	Listed date
2	18m N	Roman Catholic Church Of St John The Baptist	II*	1376506	15/09/1998
3	186m E	Rochdale Canal Branch Arm Halfpenny Bridge	II	1031919	22/02/1977
5	223m N	132, Drake Street	II	1084271	12/02/1985

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



11.5 Conservation Areas

Records within 250m

2

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

Features are displayed on the Visual and cultural designations map on [page 95](#) >

ID	Location	Name	District	Date of designation
1	On site	Maclure Road	Rochdale	22/12/2006
4	191m N	Rochdale Town Centre	Rochdale	20/08/1973

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on [page 98](#) >

ID	Location	Classification	Description
1	On site	Urban	-

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m

0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m

0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

2

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

Features are displayed on the Habitat designations map on [page 100](#) >

ID	Location	Main Habitat	Other habitats
1	32m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	54m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.



13.2 Habitat Networks

Records within 250m

1

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

Features are displayed on the Habitat designations map on [page 100](#) >

ID	Location	Type	Habitat
3	162m SE	Network Enhancement Zone 2	Not specified

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

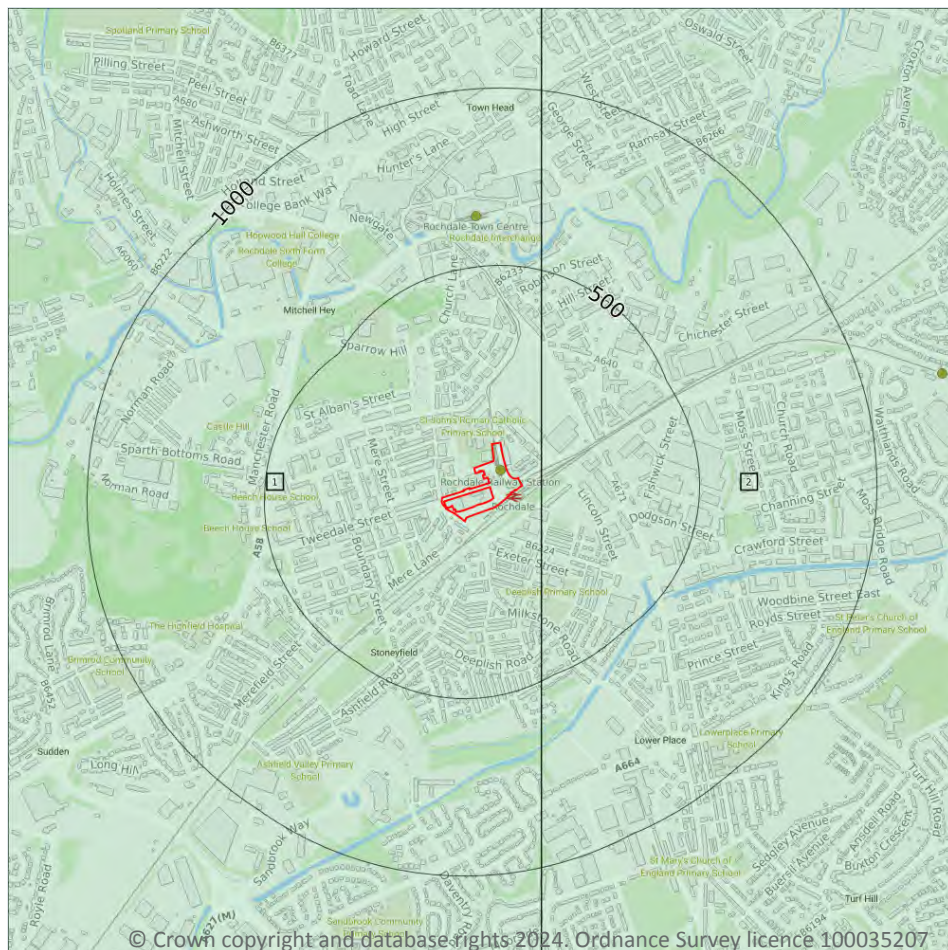
Records within 250m

0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

2

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

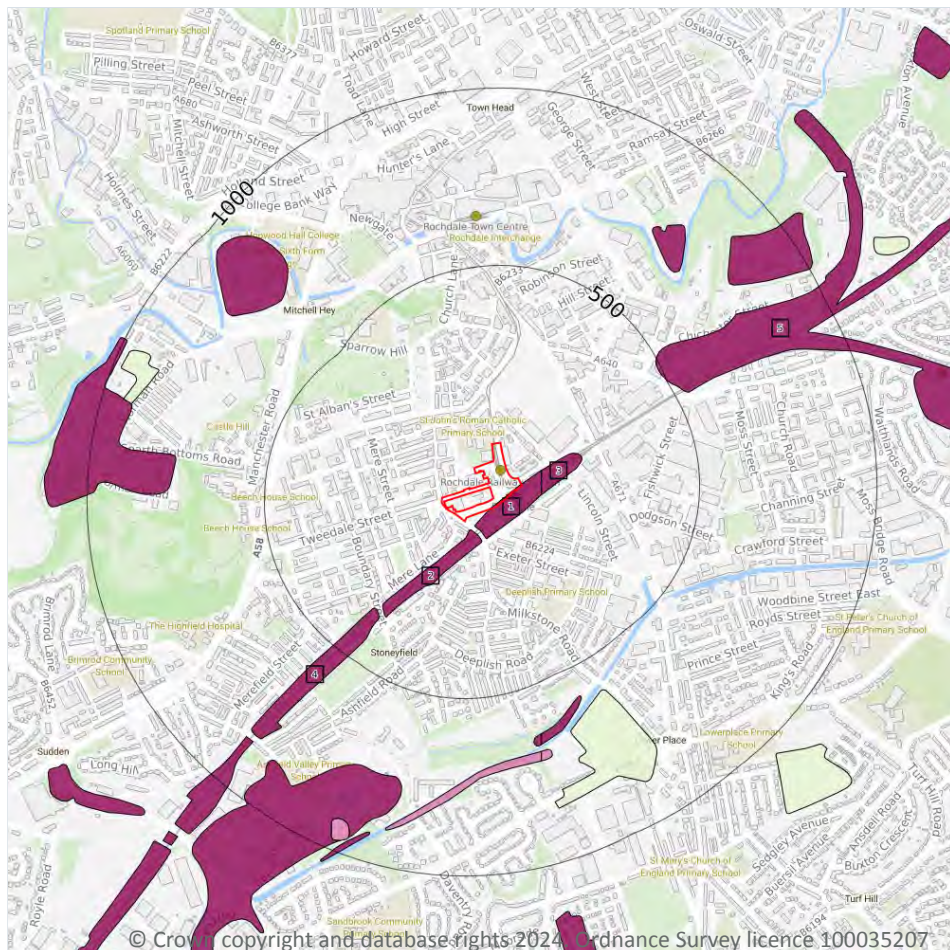
Features are displayed on the Geology 1:10,000 scale - Availability map on [page 102](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SD81SE
2	54m E	Full	Full	Full	Full	SD91SW

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground



— Site Outline
Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m

5

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on [page 103](#) >

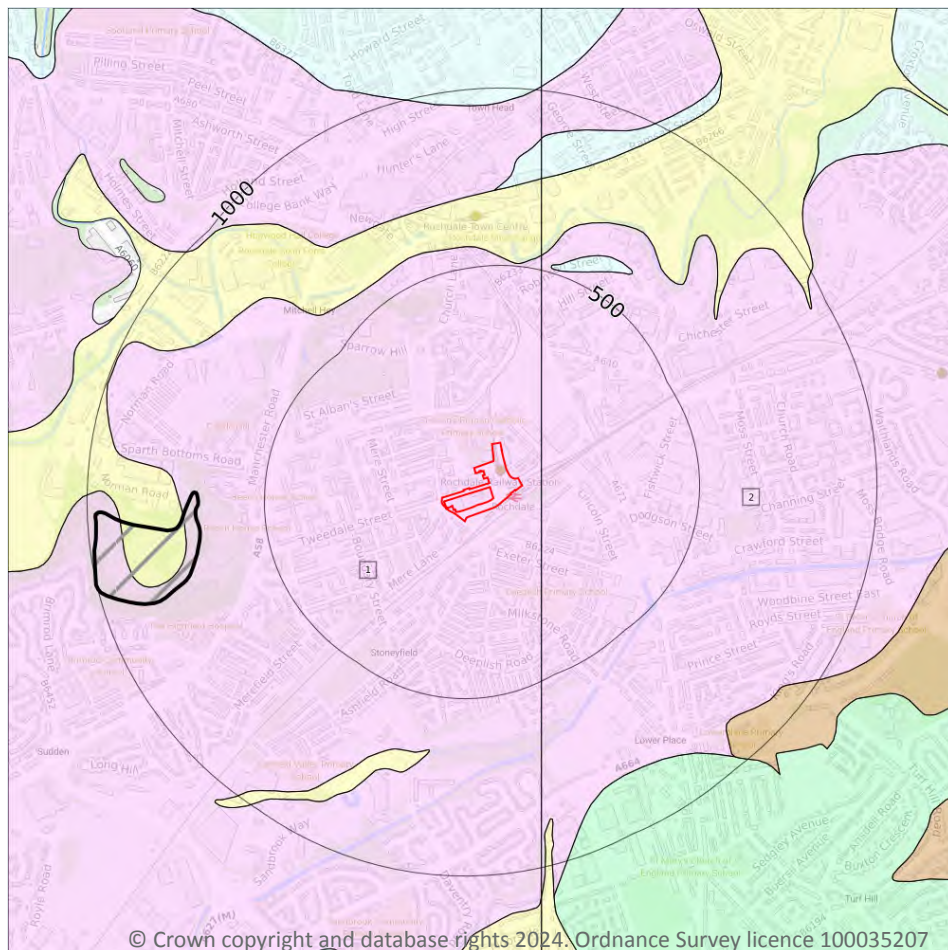
ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	29m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	54m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	345m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit



ID	Location	LEX Code	Description	Rock description
5	490m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

2

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 105](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
2	54m E	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

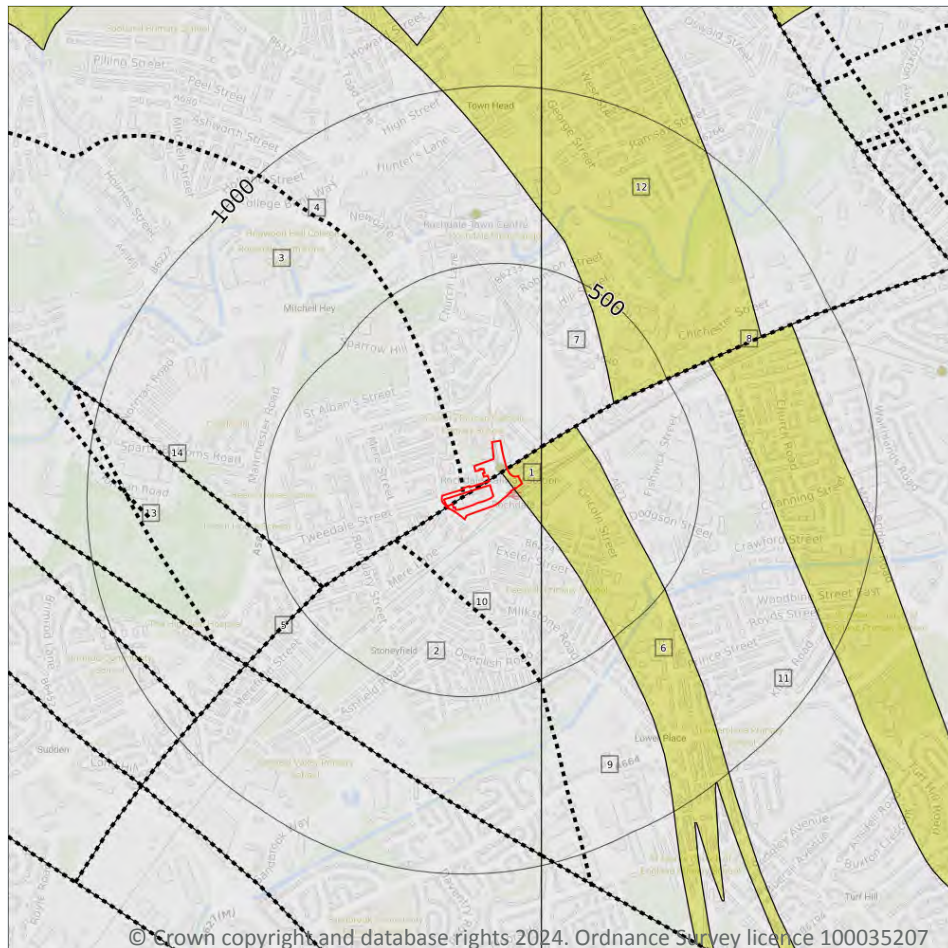
0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

9

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 107](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	OL-SDST	Old Lawrence Rock - Sandstone	Langsettian Sub-age
2	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
3	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age



ID	Location	LEX Code	Description	Rock age
6	54m E	OL-SDST	Old Lawrence Rock - Sandstone	Langsettian Sub-age
7	106m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
9	125m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
11	213m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
12	337m NE	OL-SDST	Old Lawrence Rock - Sandstone	Langsettian Sub-age
13	414m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

5

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

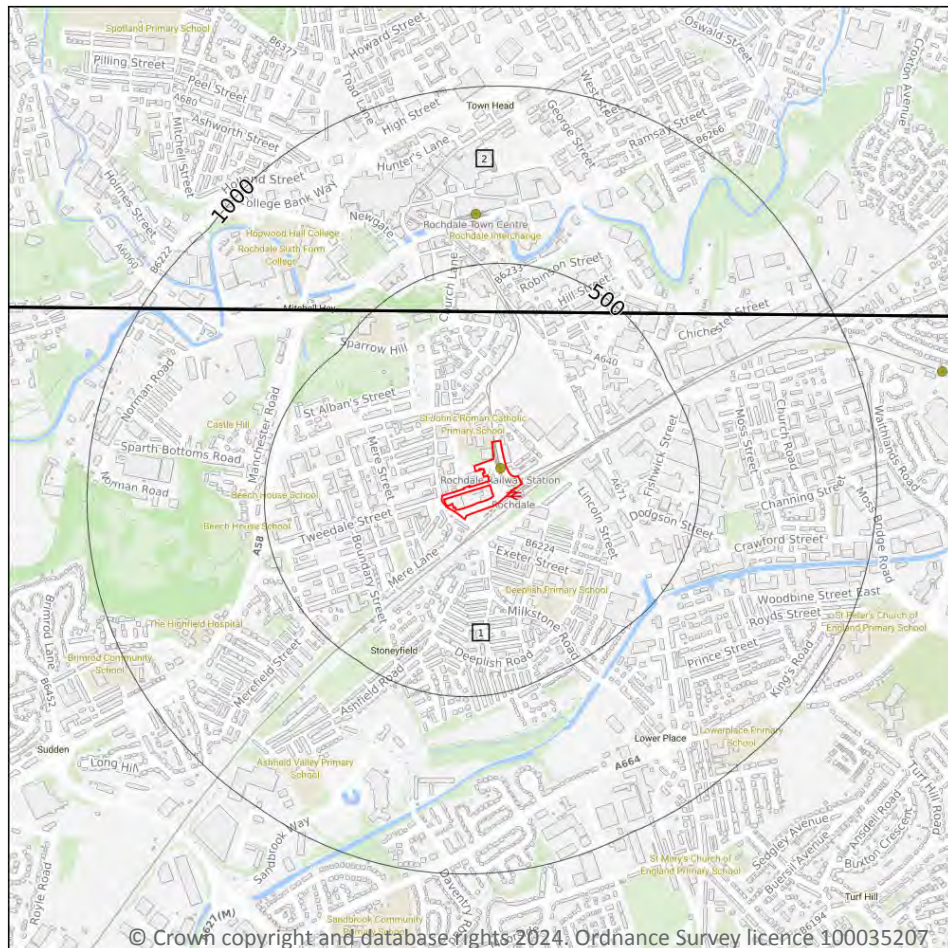
Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 107 >](#)

ID	Location	Category	Description
4	On site	ROCK	Coal seam, inferred
5	On site	FAULT	Normal fault, inferred; crossmarks on downthrow side
8	106m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
10	163m SW	ROCK	Coal seam, inferred
14	414m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline
Search buffers in metres (m)

☐ Geological map tile

15.1 50k Availability

Records within 500m

2

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 109](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW085_manchester_v4
2	363m N	No coverage	Full	Full	Full	EW076_rochdale_v4

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

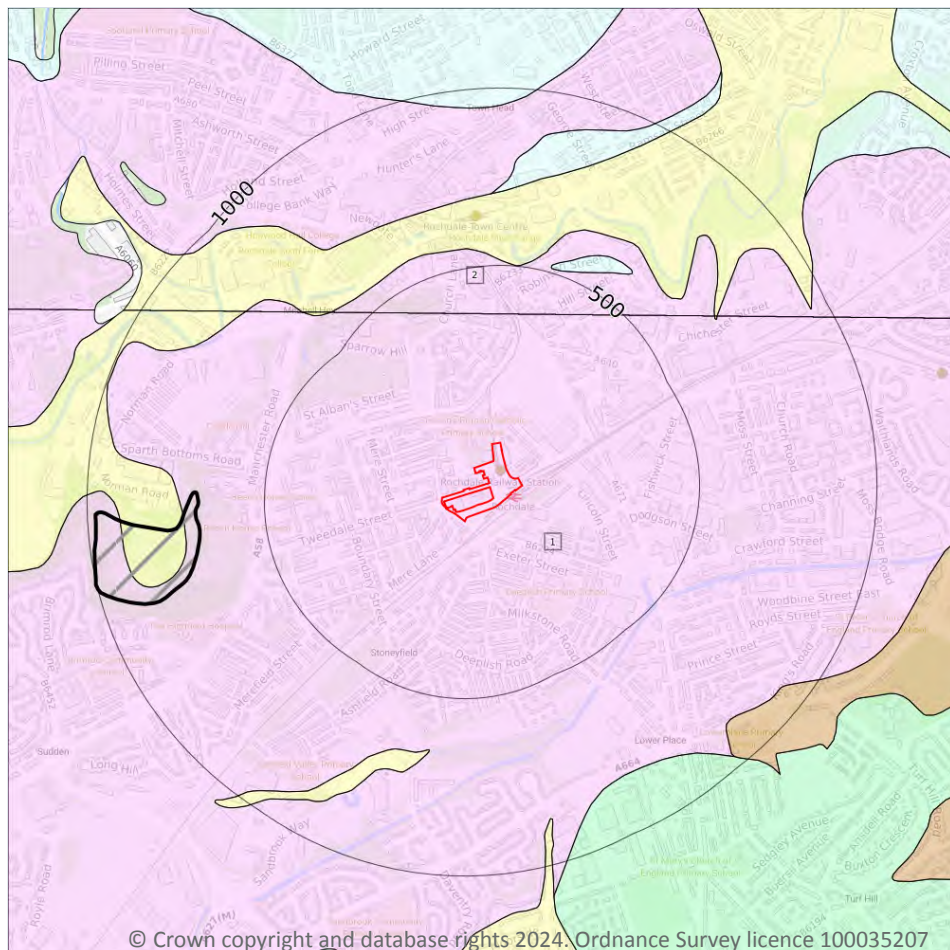
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline
Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

2

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 111](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
2	363m N	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m**1**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	Very High	High

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m**0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

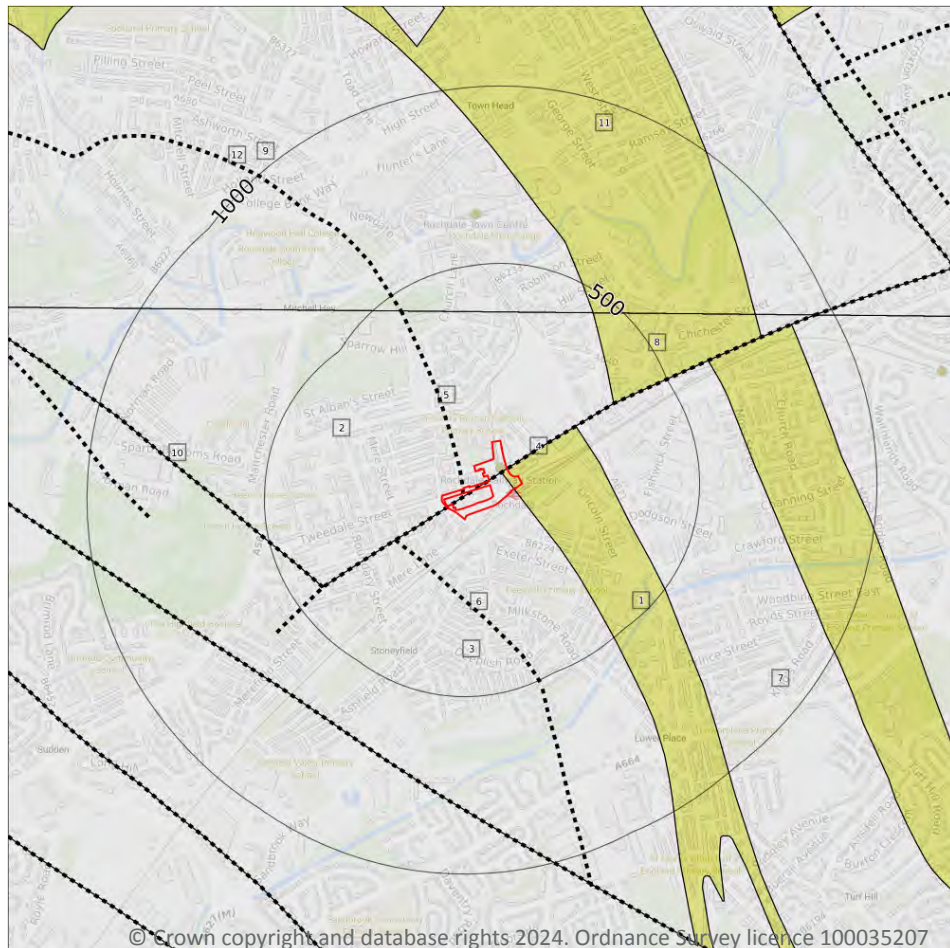
Records within 50m**0**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

7

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 113](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	OL-SDST	OLD LAWRENCE ROCK - SANDSTONE	WESTPHALIAN
2	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
3	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN



ID	Location	LEX Code	Description	Rock age
7	213m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
8	337m NE	OL-SDST	OLD LAWRENCE ROCK - SANDSTONE	WESTPHALIAN
9	363m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
11	445m NE	OL-SDST	OLD LAWRENCE ROCK - SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	2
---------------------------	----------

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Moderate	Low
On site	Fracture	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	5
----------------------------	----------

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 113 >](#)

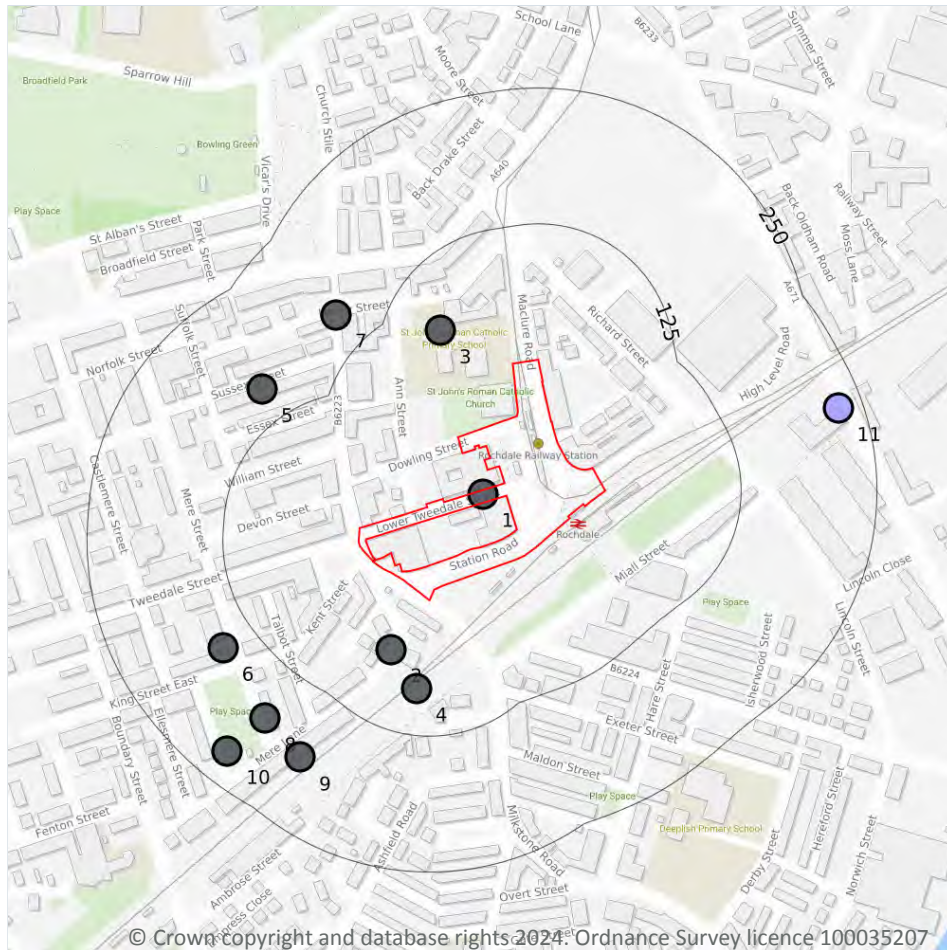
ID	Location	Category	Description
4	On site	FAULT	Fault, inferred
5	On site	ROCK	Coal seam, inferred
6	163m SW	ROCK	Coal seam, inferred
10	414m SW	FAULT	Fault, inferred
12	450m NW	ROCK	Coal seam, inferred



This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m

11

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on [page 116](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	389833 412671	W CENTRAL DIST ROCHDALE 12	-	Y	N/A
2	57m SW	389749 412528	W CENTRAL DIST ROCHDALE 10	-	Y	N/A
3	74m N	389794 412822	W CENTRAL DIST ROCHDALE 13	-	Y	N/A



ID	Location	Grid reference	Name	Length	Confidential	Web link
4	82m SW	389772 412492	W CENTRAL DIST ROCHDALE 11	-	Y	N/A
5	157m NW	389630 412768	W CENTRAL DIST ROCHDALE 14	-	Y	N/A
6	157m SW	389594 412530	W CENTRAL DIST ROCHDALE 8	-	Y	N/A
7	159m NW	389698 412836	W CENTRAL DIST ROCHDALE 15	-	Y	N/A
8	175m SW	389633 412465	W CENTRAL DIST ROCHDALE 7	-	Y	N/A
9	187m SW	389665 412429	W CENTRAL DIST ROCHDALE 6	-	Y	N/A
10	220m SW	389598 412435	W CENTRAL DIST ROCHDALE 5	-	Y	N/A
11	227m E	390160 412750	OLDHAM ROAD ROCHDALE BH1	5.0	N	35285 ↗

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline**
- Search buffers in metres (m)**
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 118 >](#)

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



— Site Outline
Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☒ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

17.2 Running sands

Records within 50m

1

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on [page 119 >](#)

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



— Site Outline
Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

17.3 Compressible deposits

Records within 50m

1

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 120](#) >

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



— Site Outline
Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

17.4 Collapsible deposits

Records within 50m

1

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 121](#) >

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.5 Landslides

Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

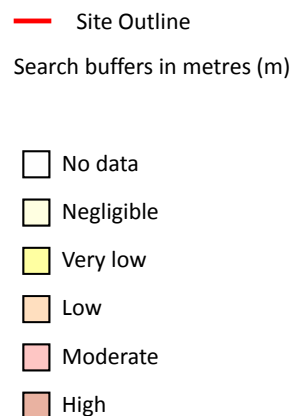
Features are displayed on the Natural ground subsidence - Landslides map on [page 122 >](#)

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 123](#) >

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.



18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m

1

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining and ground workings map on [page 125](#) >

ID	Location	Details	Description
G	419m S	Name: Deeplish Hall Gravel Pit Address: ROCHDALE, Lancashire Commodity: Sand & Gravel Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

18

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on [page 125 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
A	43m N	Canal Wharf	1891	1:10560
B	99m NE	Canal	1851	1:10560
C	107m NE	Canal	1928	1:10560
C	107m NE	Canal	1908	1:10560
C	107m NE	Canal	1891	1:10560
B	111m NE	Canal	1938	1:10560
A	116m NE	Canal Wharf	1851	1:10560
A	117m NE	Canal Wharf	1851	1:10560
A	121m N	Canal Wharf	1851	1:10560
A	126m NE	Canal Wharf	1938	1:10560
A	127m NE	Canal Wharf	1928	1:10560
A	127m NE	Canal Wharf	1908	1:10560
D	162m E	Canal	1954	1:10560
D	162m E	Canal	1967	1:10560
A	170m N	Unspecified Wharf	1956	1:10560
1	204m NW	Grave Yard	1908	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
2	209m SE	Saw Pit	1851	1:10560
E	240m S	Unspecified Pit	1968	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m

0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.



18.7 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m

0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.



18.11 BGS mine plans

Records within 500m

0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site

1

Areas which could be affected by past, current or future coal mining.

Location	Details
On site	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site

0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site

0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site

0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.



18.16 Clay mining

Records on site

0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).



19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

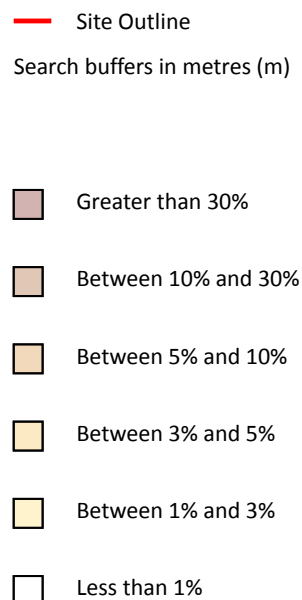
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

2

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 133](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	None



Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None

This data is sourced from the British Geological Survey and UK Health Security Agency.



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

3

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

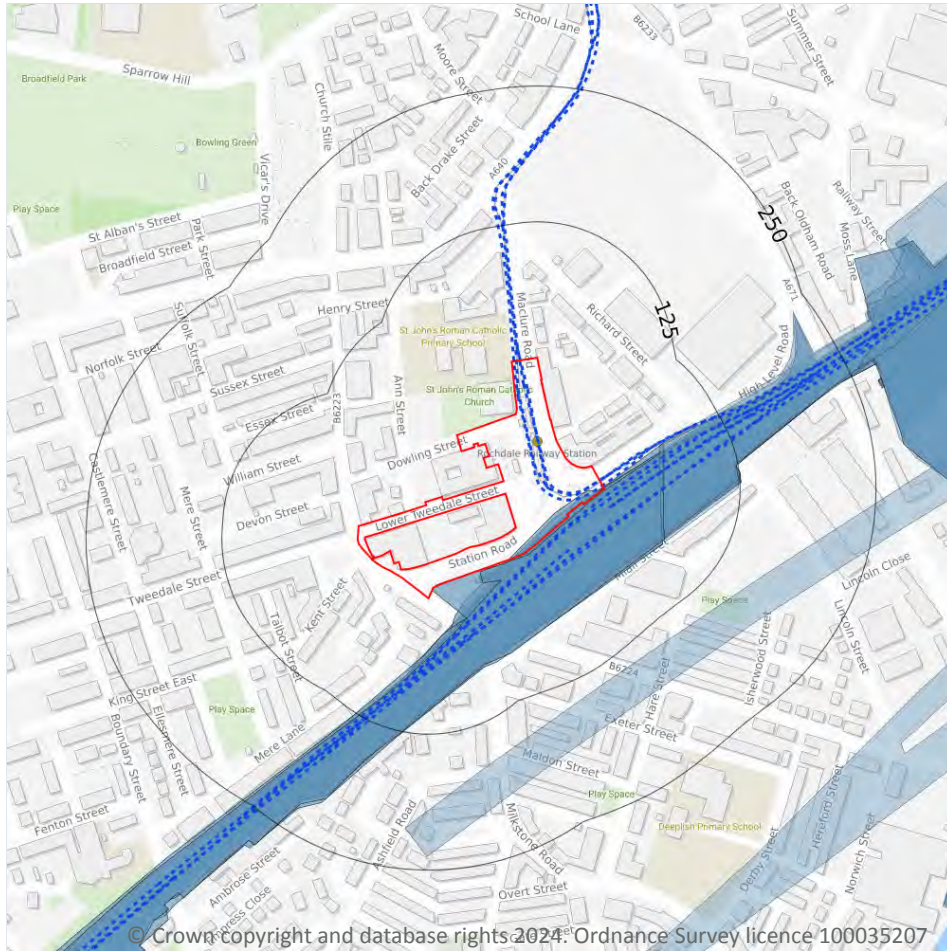
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The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)**
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

22.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m

0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.



This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m

28

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on [page 136 >](#)

Location	Land Use	Year of mapping	Mapping scale
On site	Railway Sidings	1987	10000
On site	Railway Sidings	1975	10000
On site	Railway Sidings	1956	10560
On site	Railway Sidings	1992	10000
On site	Railway Sidings	1968	10560
On site	Railway Sidings	1938	10560
On site	Railway Sidings	1891	10560
1m S	Railway Sidings	1958	2500
1m E	Railway Sidings	1928	10560
1m E	Railway Sidings	1908	10560
2m S	Railway Sidings	1891	2500
3m S	Railway Sidings	1930	2500
3m S	Railway Sidings	1910	2500
15m E	Railway Sidings	1985	1250
15m E	Railway Sidings	1988	1250
15m E	Railway Sidings	1989	1250
52m E	Railway Sidings	1976	10000



Location	Land Use	Year of mapping	Mapping scale
54m E	Railway Sidings	1954	10560
55m E	Railway Sidings	1967	10560
55m SE	Railway Sidings	1891	2500
58m SE	Railway Sidings	1930	2500
58m SE	Railway Sidings	1910	2500
61m E	Railway Sidings	1958	2500
63m E	Railway Sidings	1957	1250
74m S	Railway Sidings	1958	2500
80m S	Railway Sidings	1957	1250
140m SE	Railway Sidings	1892	-
175m E	Railway Sidings	1957	1250

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m

0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.



22.7 Railways

Records within 250m

55

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways. Features are displayed on the Railway infrastructure and projects map on [page 136 >](#)

Location	Name	Type
On site		light_rail
On site		light_rail
On site		light_rail
On site		light_rail
On site	Not given	Single Track
On site	Not given	Single Track
On site	Not given	Single Track
On site	Not given	Multi Track
On site	Not given	Multi Track
On site	Not given	Single Track
6m SE	Caldervale Line	rail
6m E	Not given	Multi Track
7m SE	Not given	Single Track
17m E	Not given	Single Track
17m E	Caldervale Line	rail
19m N	Not given	Multi Track
23m SE	Caldervale Line	rail
28m SE	Caldervale Line	rail
31m SE	Not given	Single Track
41m E	Not given	Single Track
41m S	Caldervale Line	rail
43m S	Not given	Single Track
43m S	Not given	Single Track
49m S		rail



Location	Name	Type
52m S	Not given	Single Track
52m S	Not given	Single Track
53m S	Caldervale Line	rail
54m E		light_rail
90m SW	Not given	Multi Track
100m E	Not given	Single Track
104m E	Not given	Single Track
104m E	Not given	Single Track
110m E	Not given	Single Track
116m SW		rail
118m E	Not given	Single Track
118m E	Not given	Single Track
120m E	Not given	Single Track
124m N	Not given	Single Track
124m N	Not given	Single Track
126m E	Not given	Single Track
144m E	Not given	Single Track
148m E	Not given	Single Track
148m E	Not given	Single Track
148m E		light_rail
149m E	Not given	Single Track
151m E	Caldervale Line	rail
152m E	Caldervale Line	rail
155m E	Caldervale Line	rail
169m E	Not given	Multi Track
188m N	Not given	Multi Track
208m SW	Not given	Multi Track
228m E	Not given	Single Track



Location	Name	Type
228m E	Not given	Multi Track
243m E	Not given	Multi Track
244m E	Not given	Single Track

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

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Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: County Series

Map date: 1851

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1847
Revised N/A
Edition 1851
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Revised N/A
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Grid Ref: 389832, 412684

Map Name: County Series

Map date: 1890-1891

Scale: 1:10,560

Printed at: 1:10,560

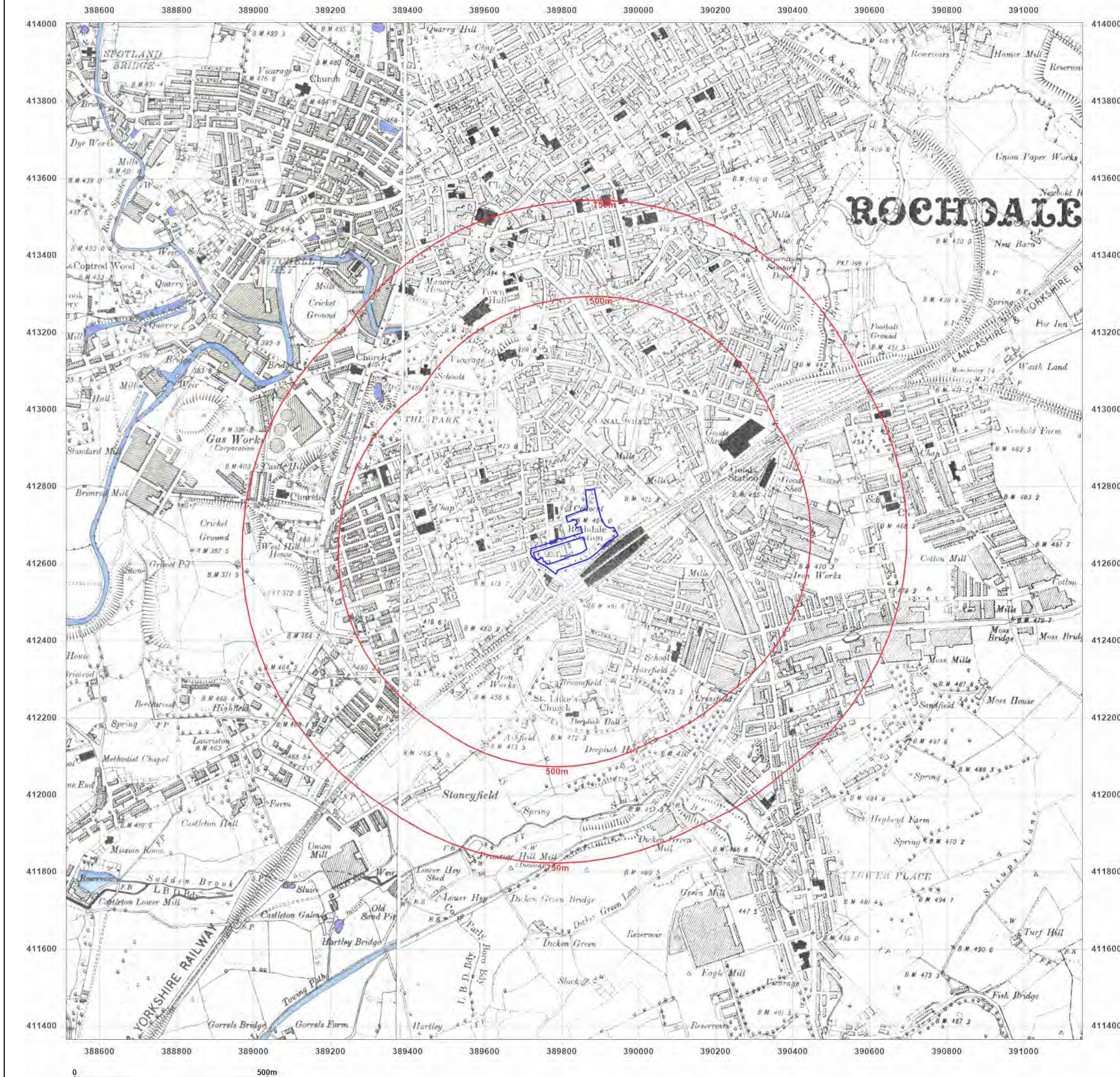


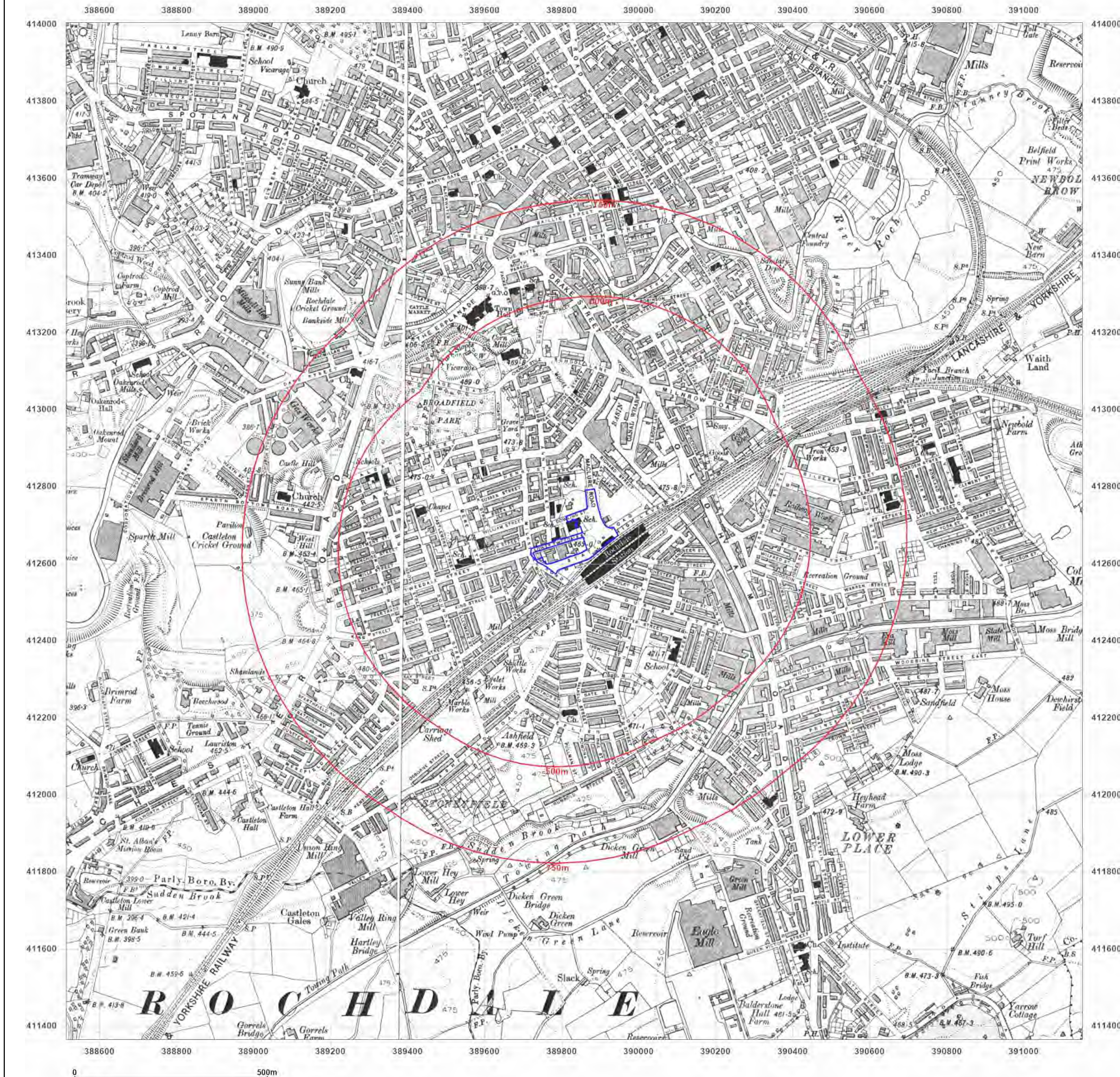
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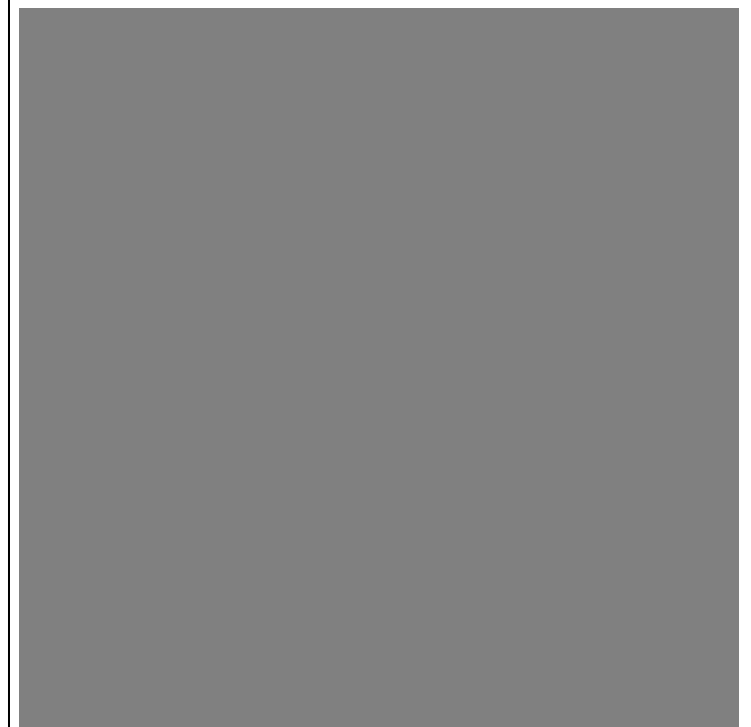
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Map Name: County Series

Map date: 1938

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Printed at: 1:10,560

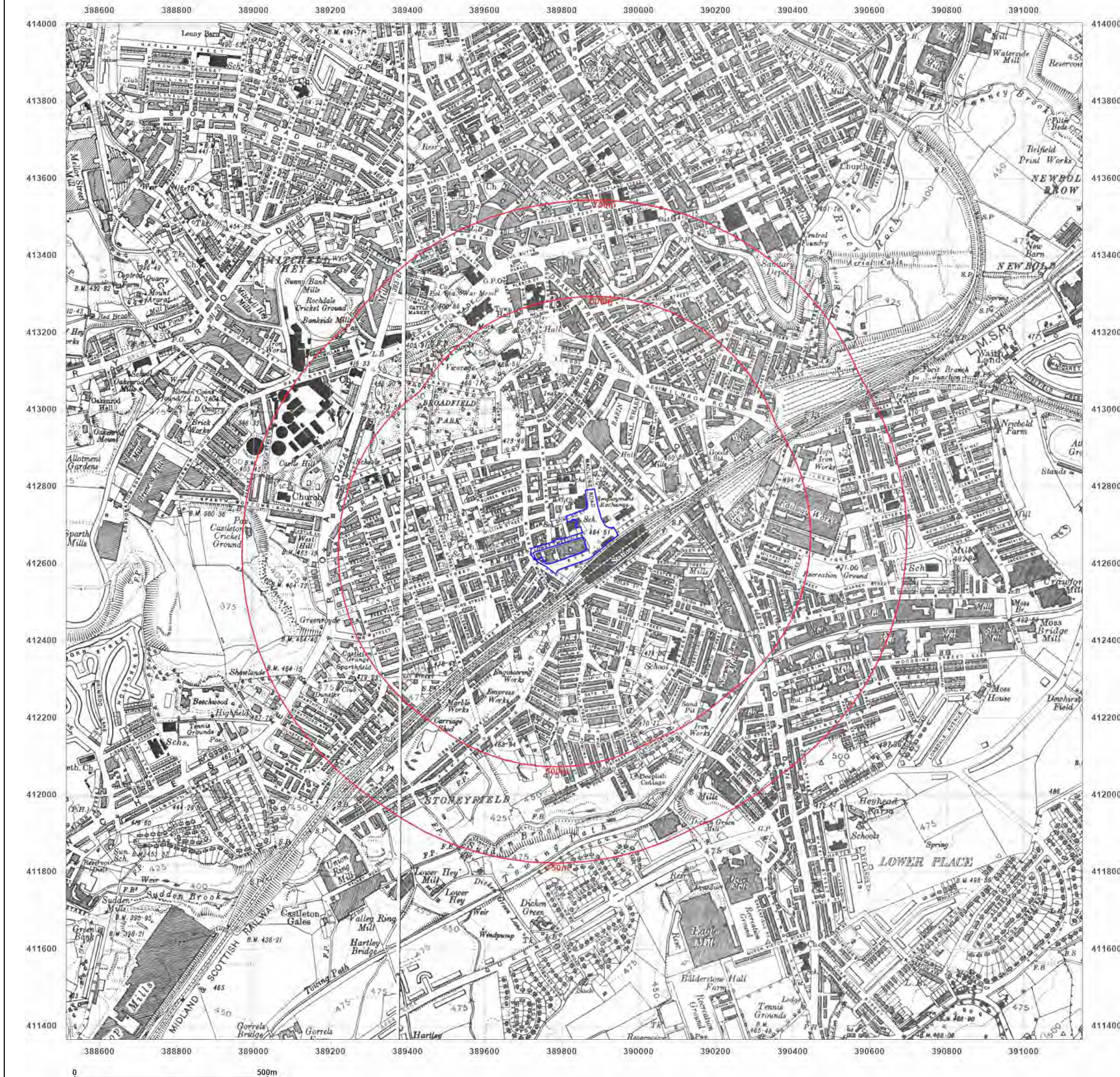


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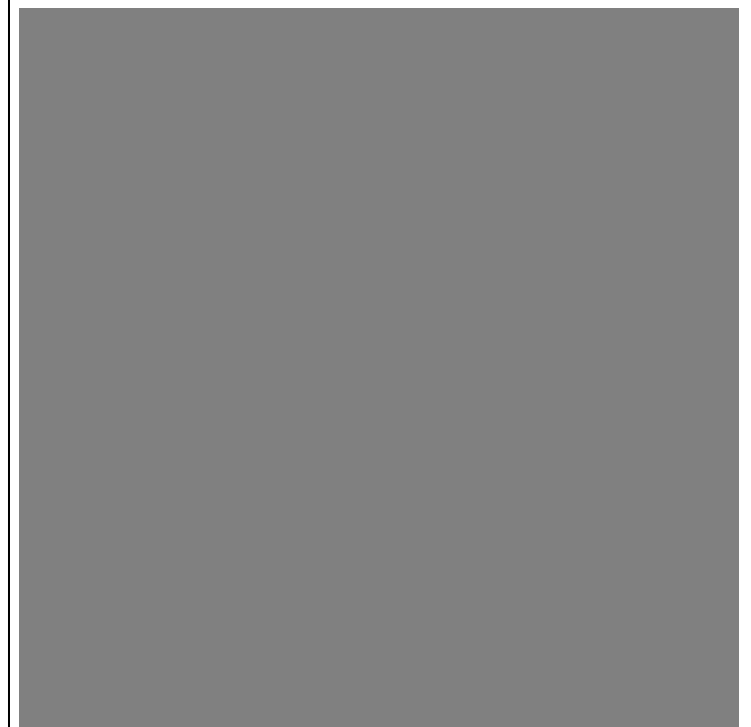
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Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: Provisional

Map date: 1954-1956

Scale: 1:10,560

Printed at: 1:10,560

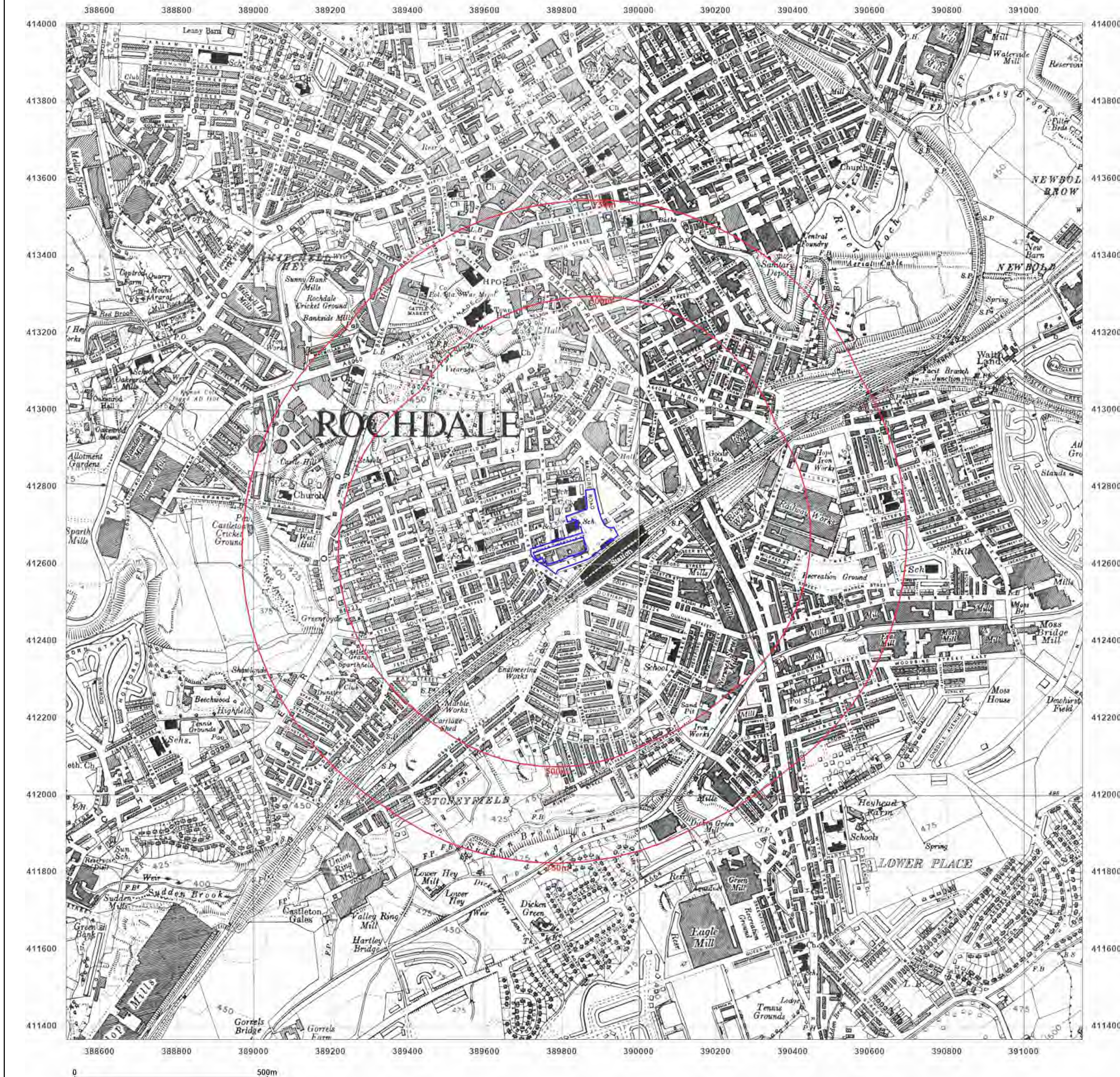


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Grid Ref: 389832, 412684

Map Name: Provisional

Map date: 1967-1968

Scale: 1:10,560

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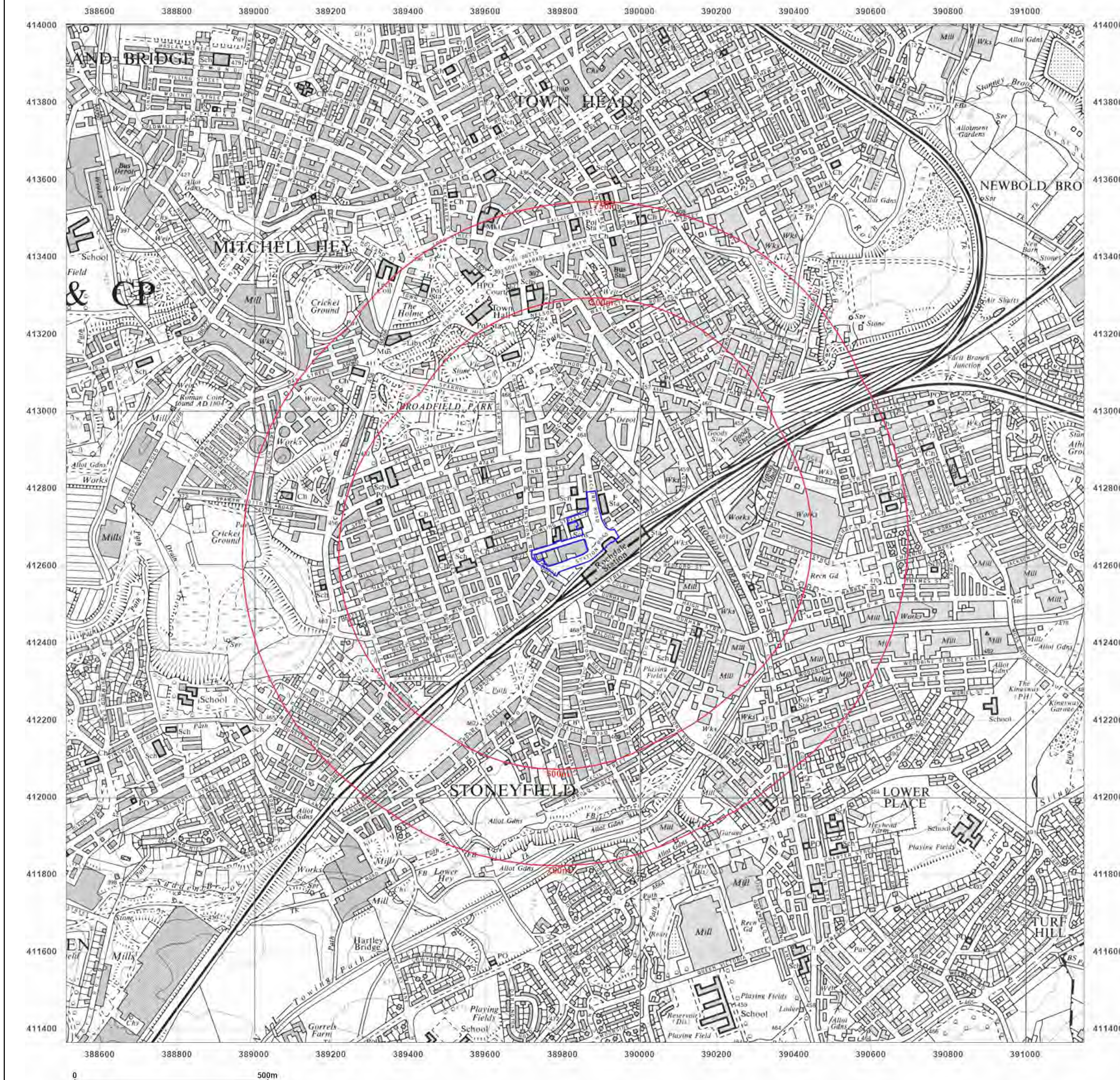


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Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1975-1976

Scale: 1:10,000

Printed at: 1:10,000

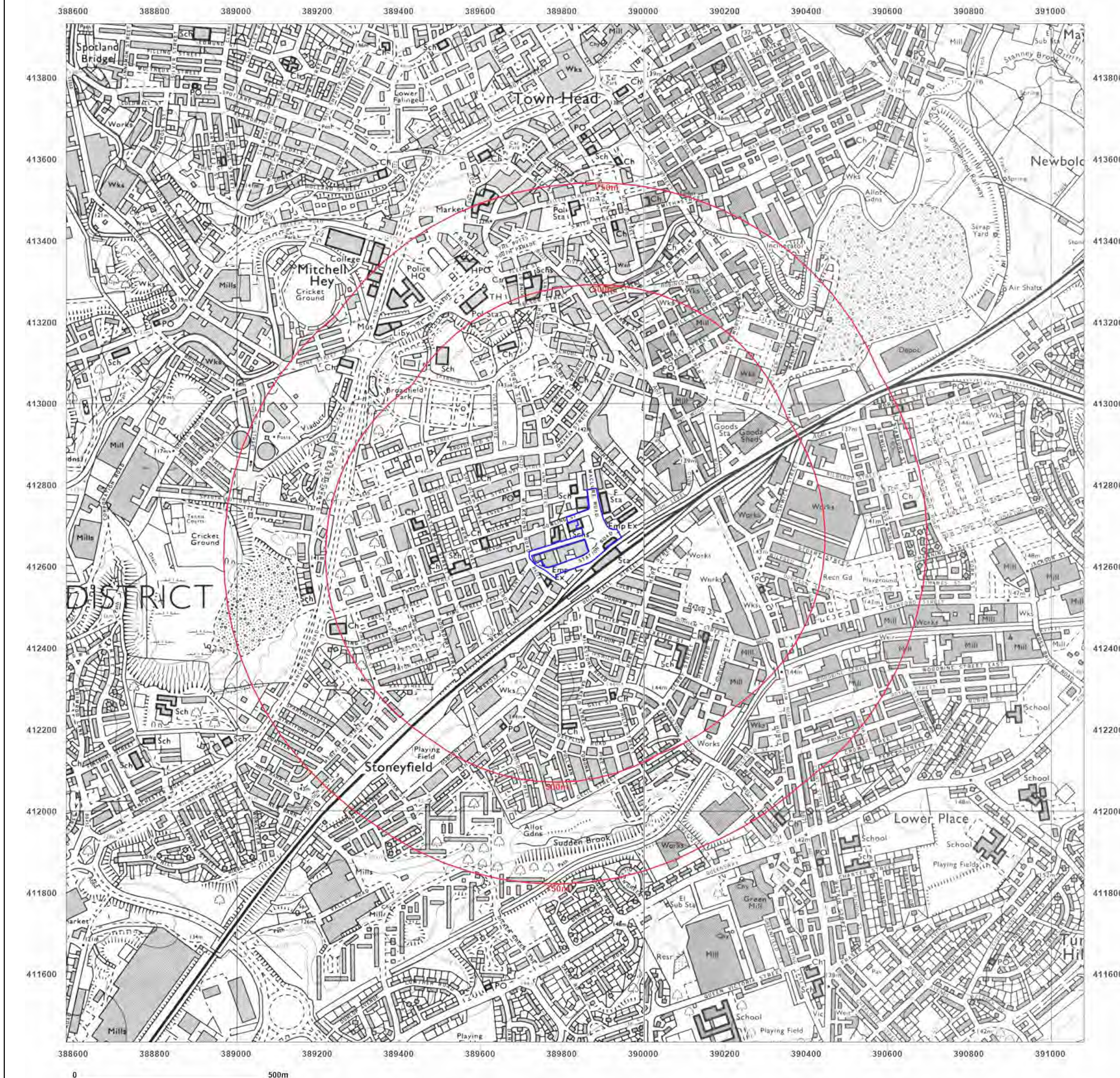


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Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1987

Scale: 1:10,000

Printed at: 1:10,000

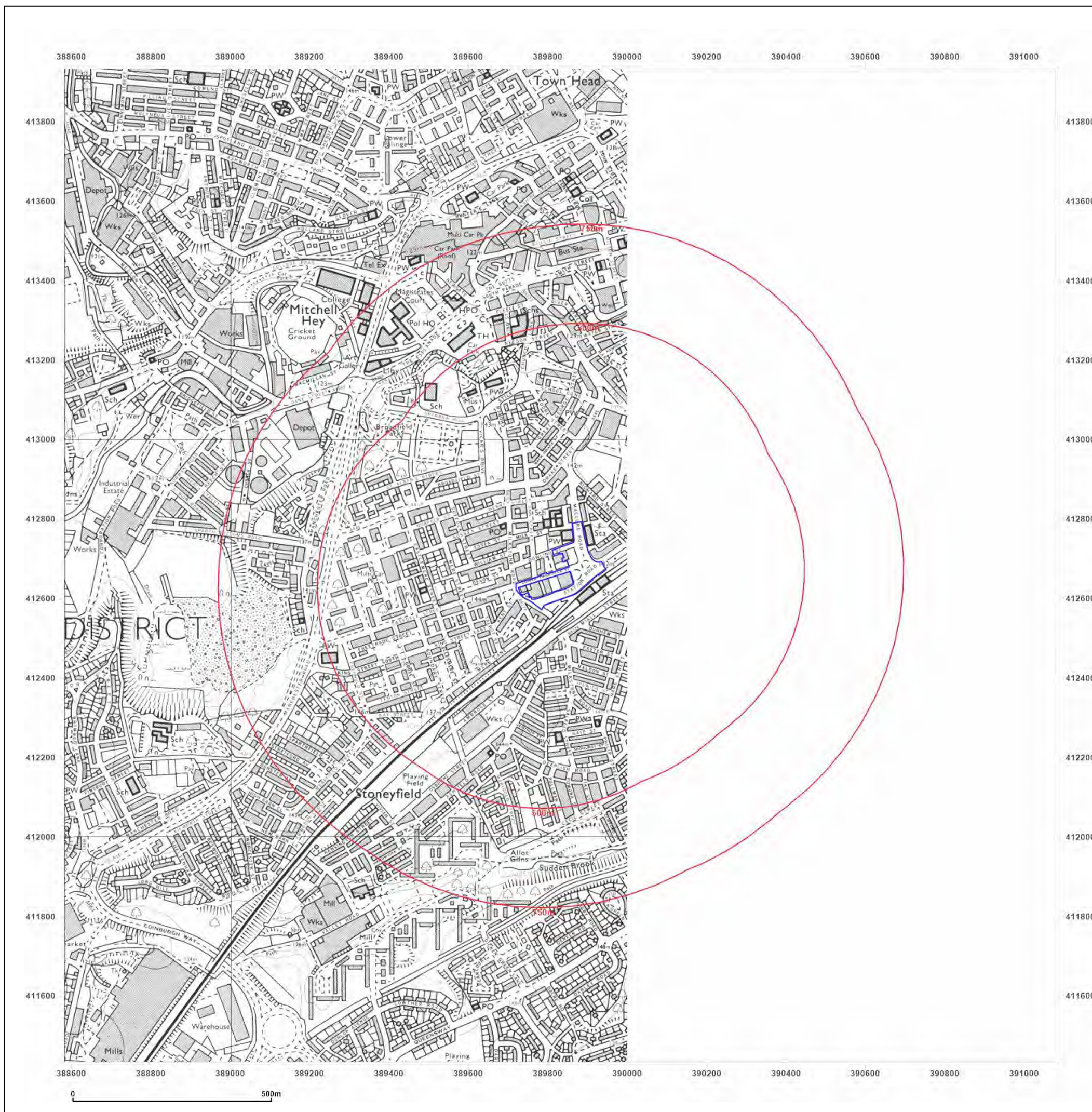


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Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1992

Scale: 1:10,000

Printed at: 1:10,000

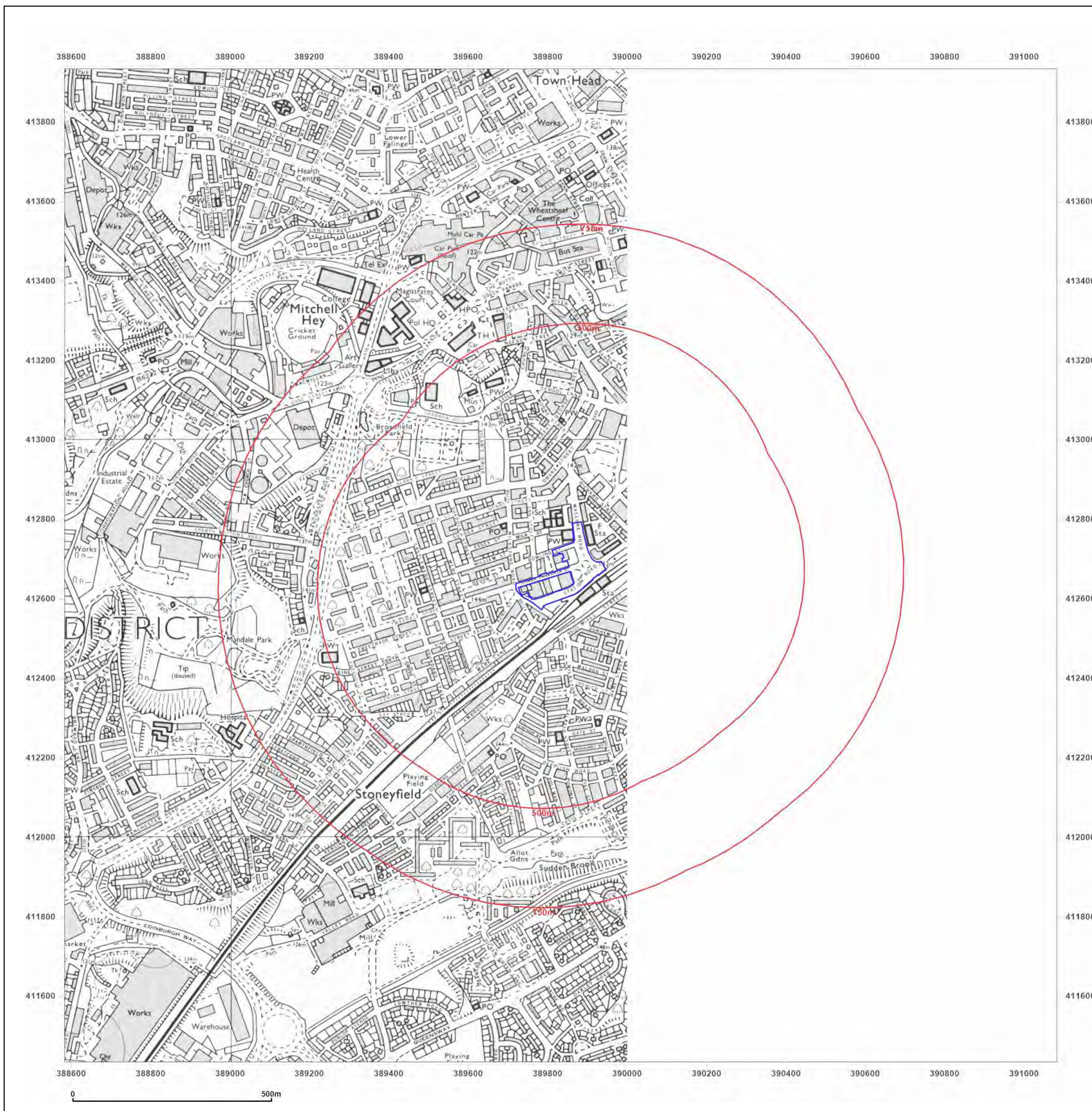


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Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



2001

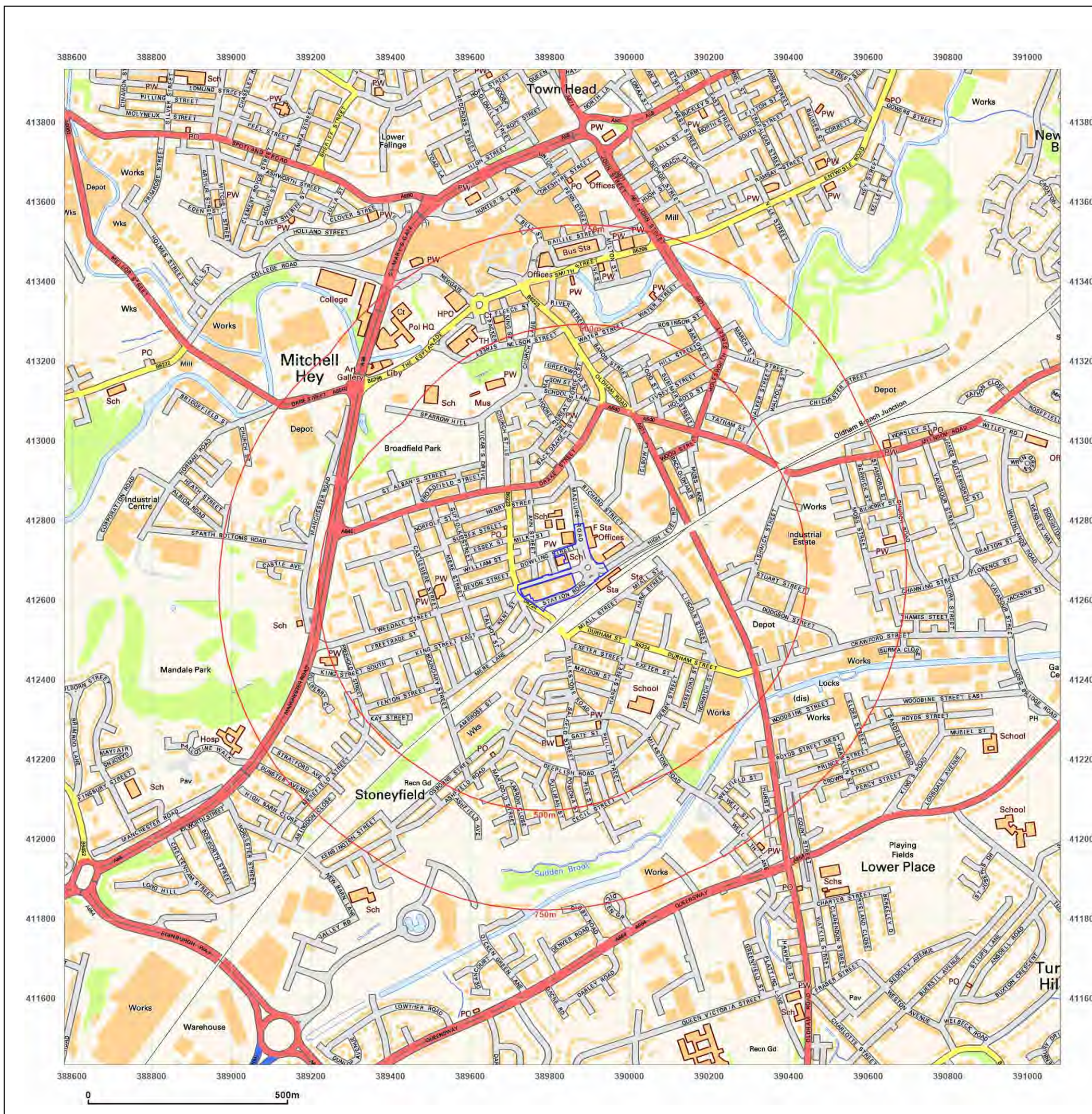


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Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010

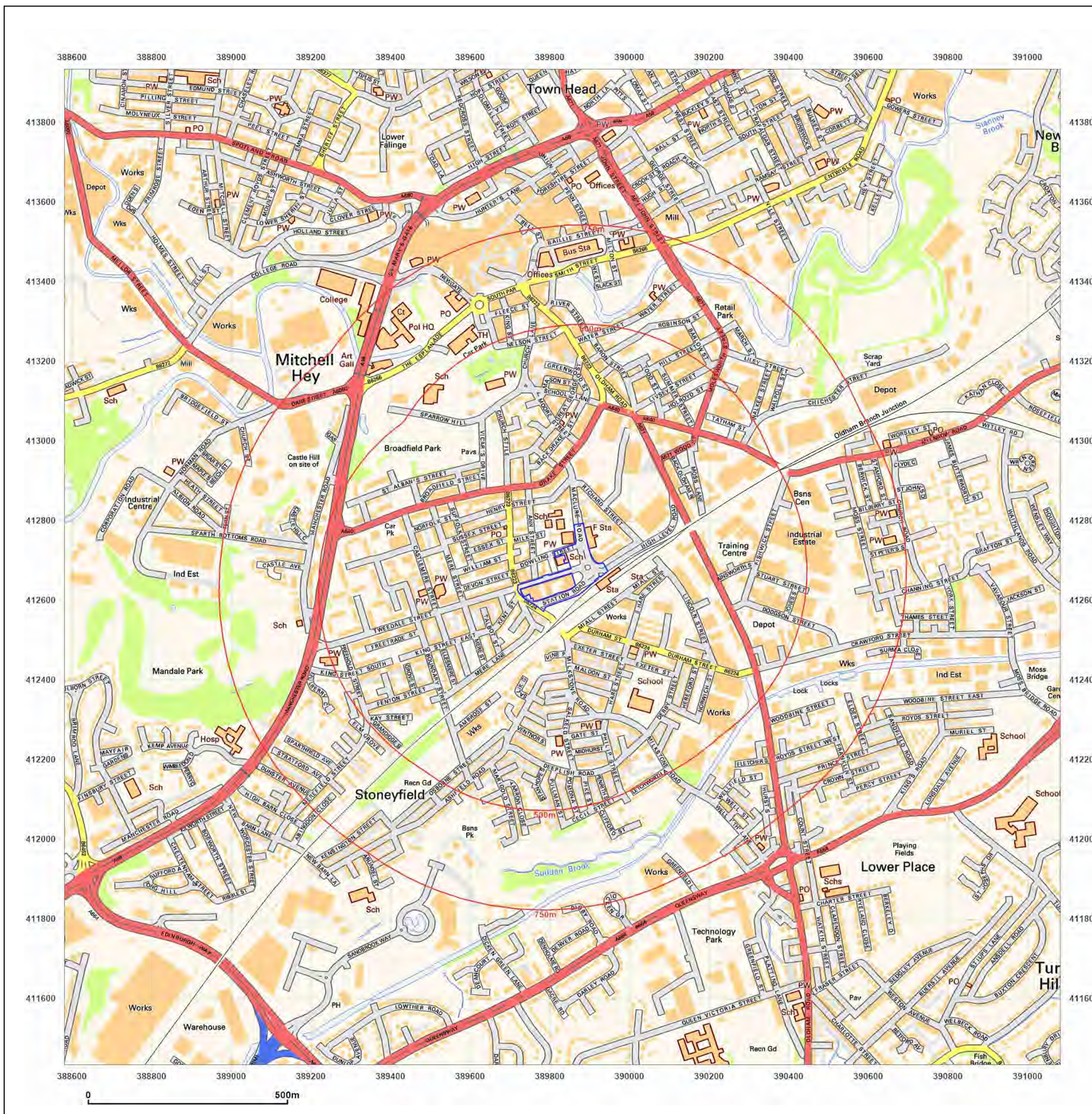


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Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 2024

Scale: 1:10,000

Printed at: 1:10,000



2024

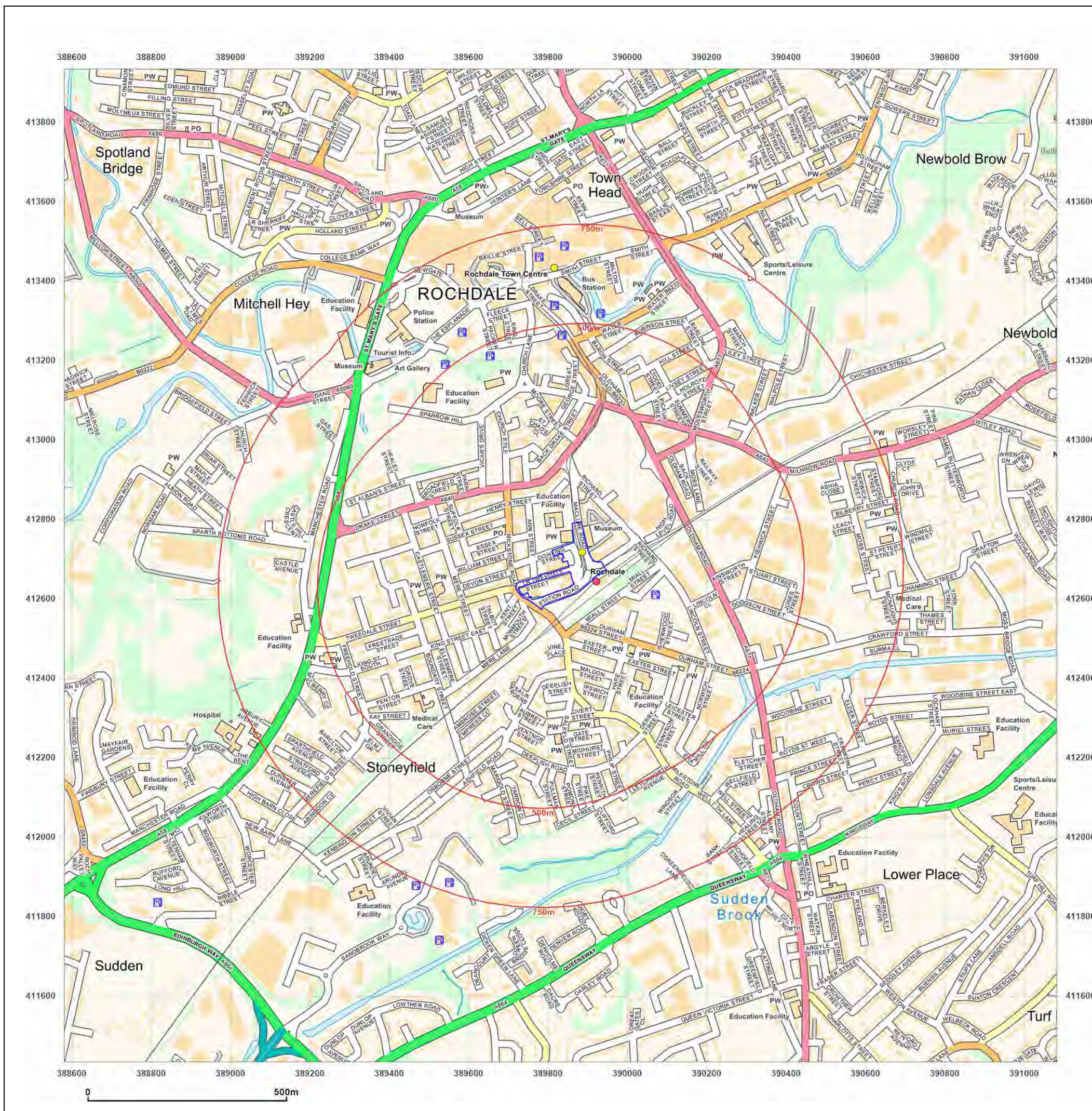


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Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: 1056 Scale Town Plan

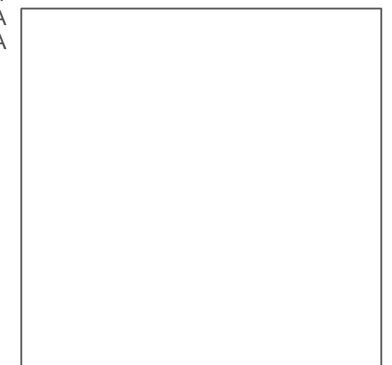
Map date: 1851

Scale: 1:1,056

Printed at: 1:1,056



Surveyed 1849
Revised N/A
Edition 1851
Copyright N/A
Levelled N/A

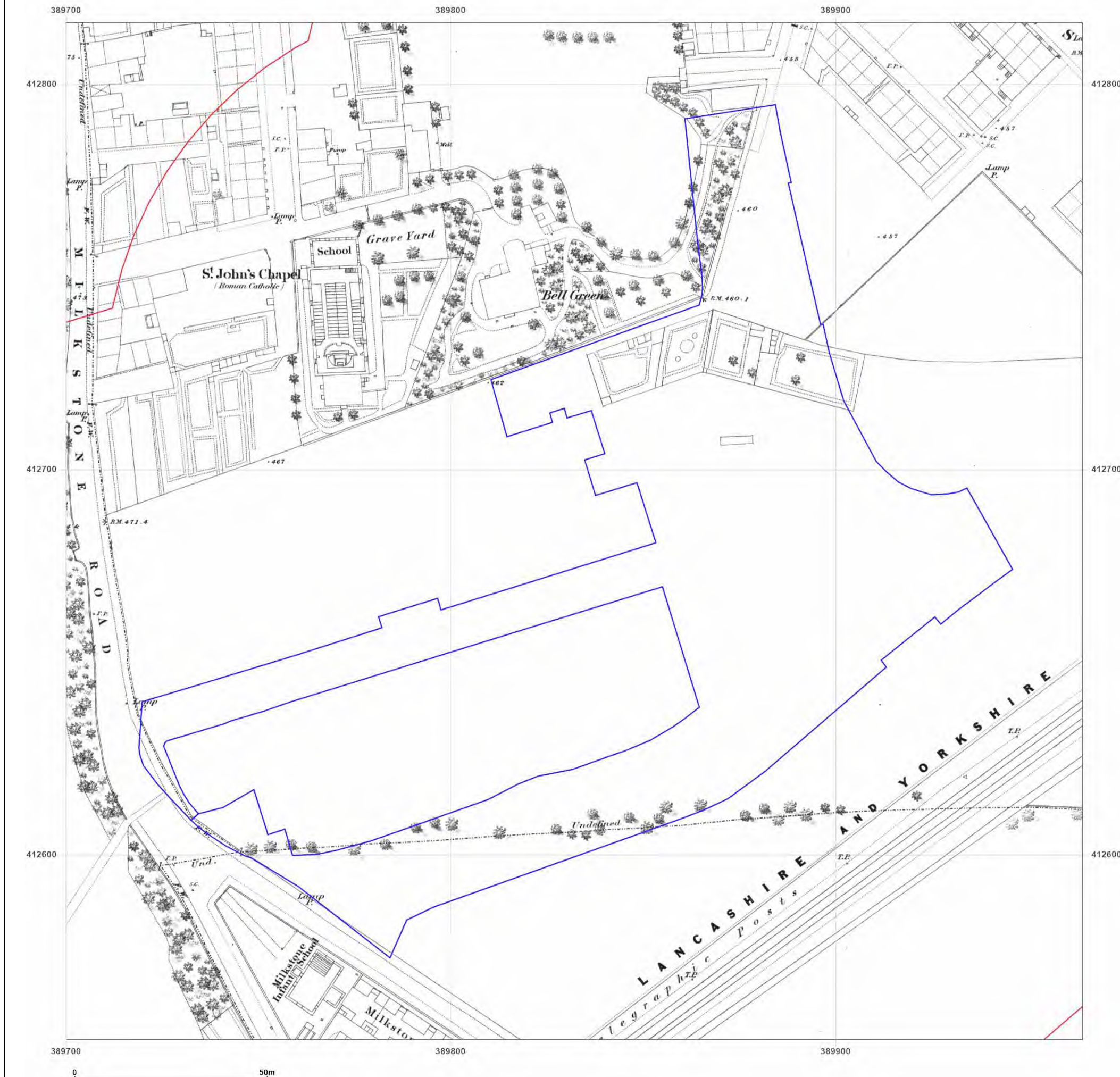


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Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: County Series

Map date: 1891

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1891
Edition N/A
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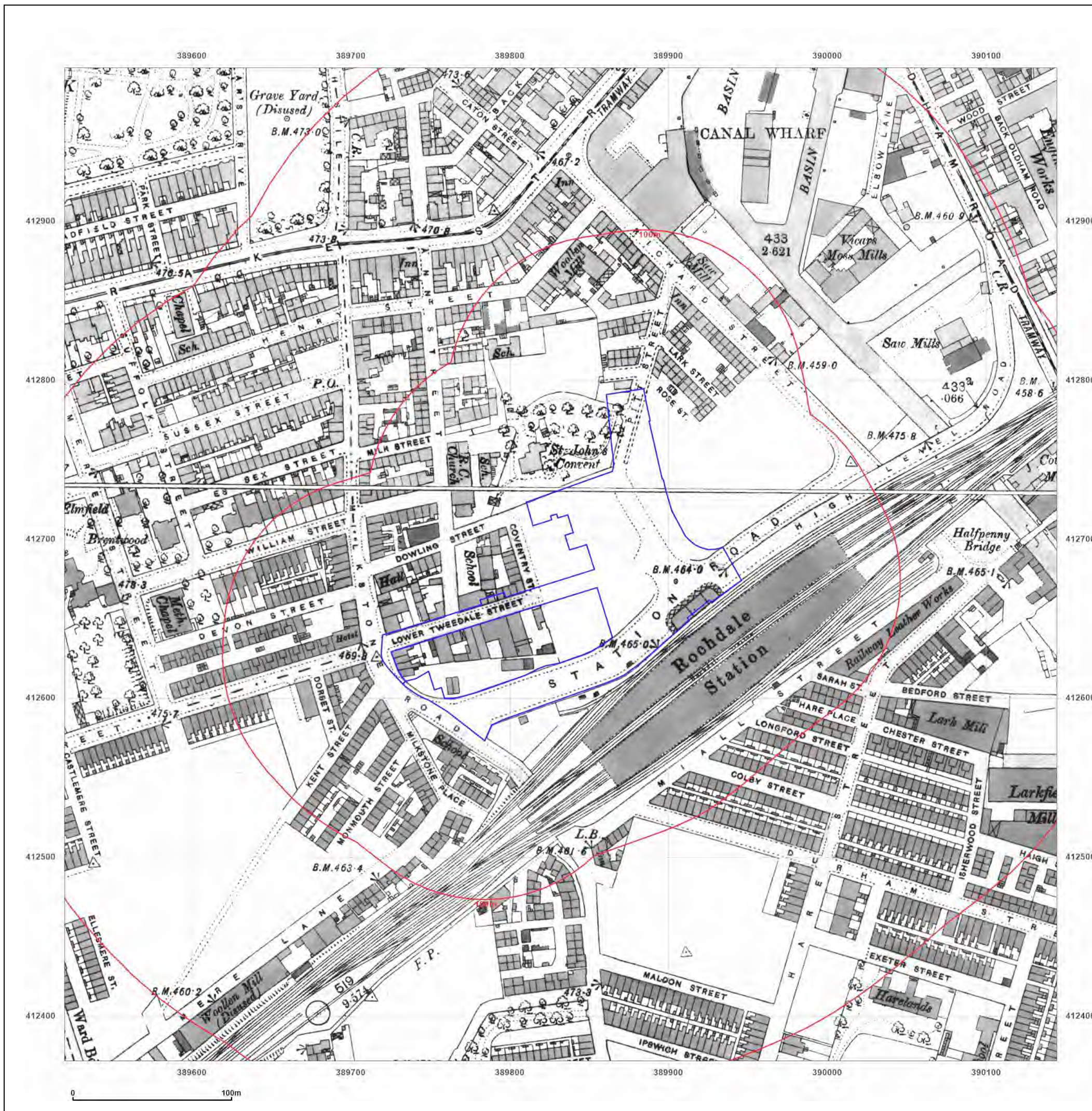


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Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: County Series Town Plan

Map date: 1892

Scale: 1:500

Printed at: 1:1,000

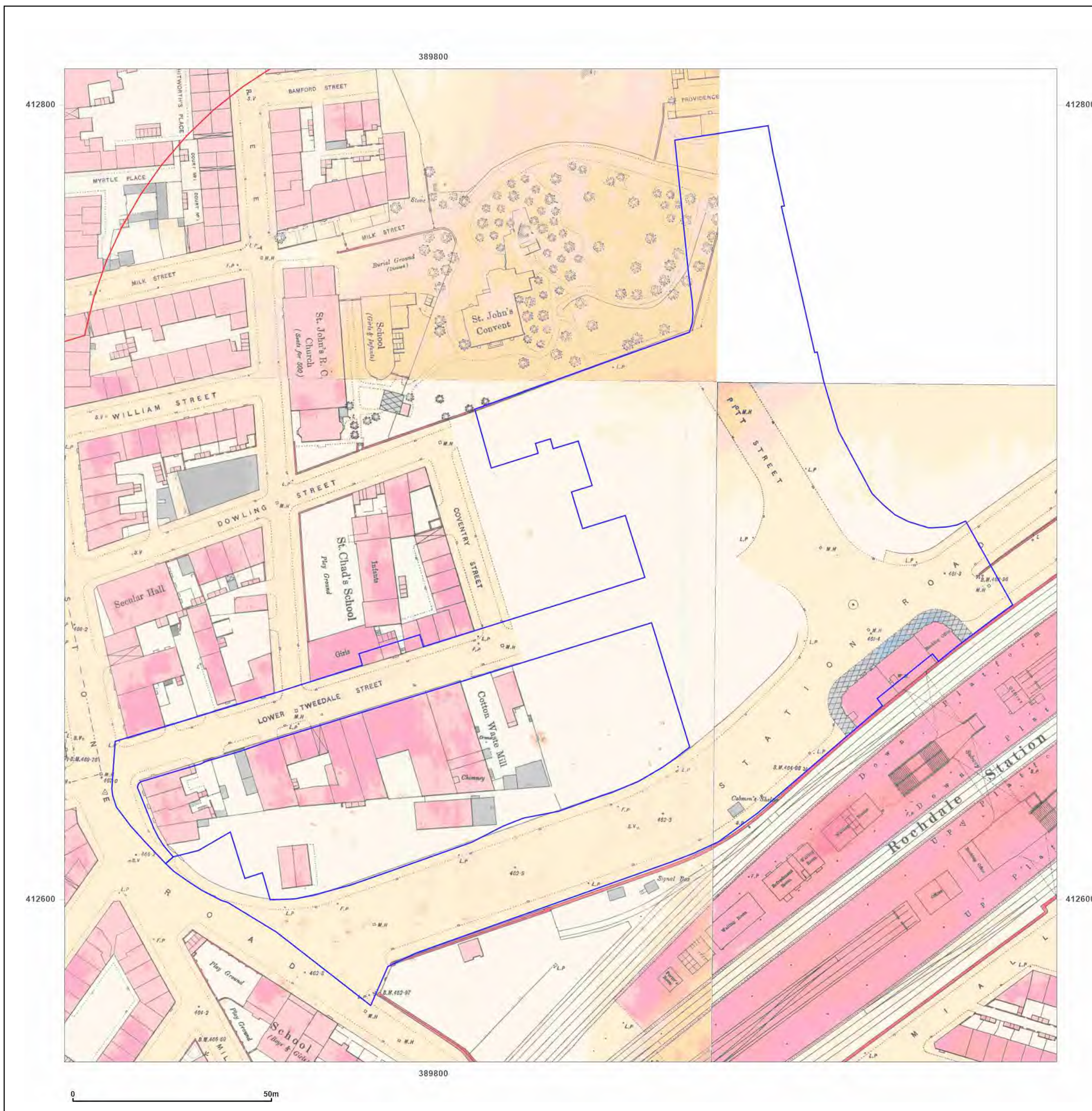


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Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1957

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1957
Revised 1957
Edition N/A
Copyright N/A
Levelled 1928

Surveyed 1957
Revised 1957
Edition N/A
Copyright N/A
Levelled 1928

Surveyed 1957
Revised 1957
Edition N/A
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Levelled 1928

Surveyed 1957
Revised 1957
Edition N/A
Copyright N/A
Levelled 1928

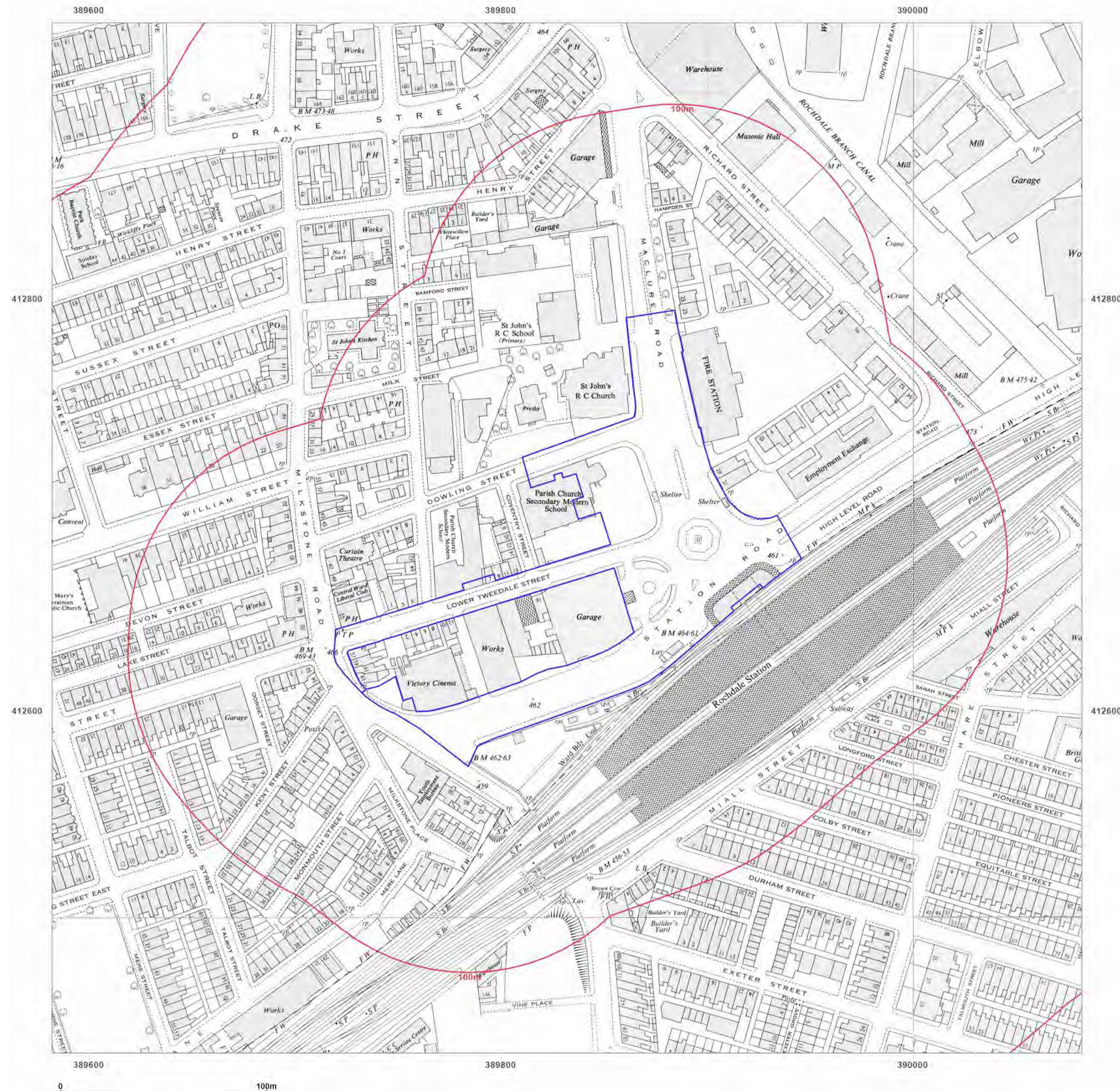


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Map legend available at:
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Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1958

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
Copyright 1958
Levelled 1928

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Copyright 1958
Levelled 1928

Surveyed 1957
Revised N/A
Edition N/A
Copyright 1958
Levelled 1928

Surveyed 1957
Revised N/A
Edition N/A
Copyright 1958
Levelled 1928

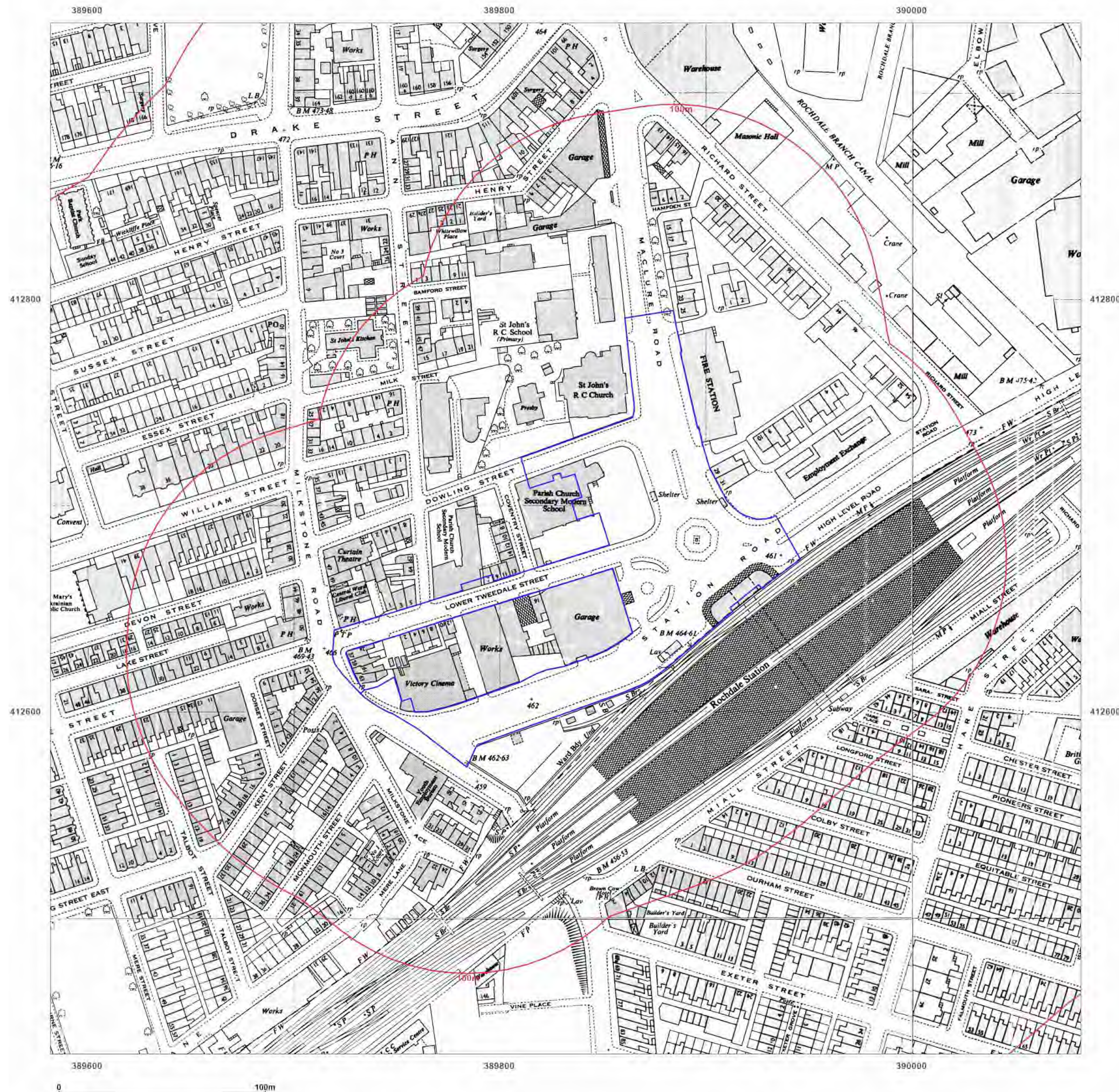


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Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500

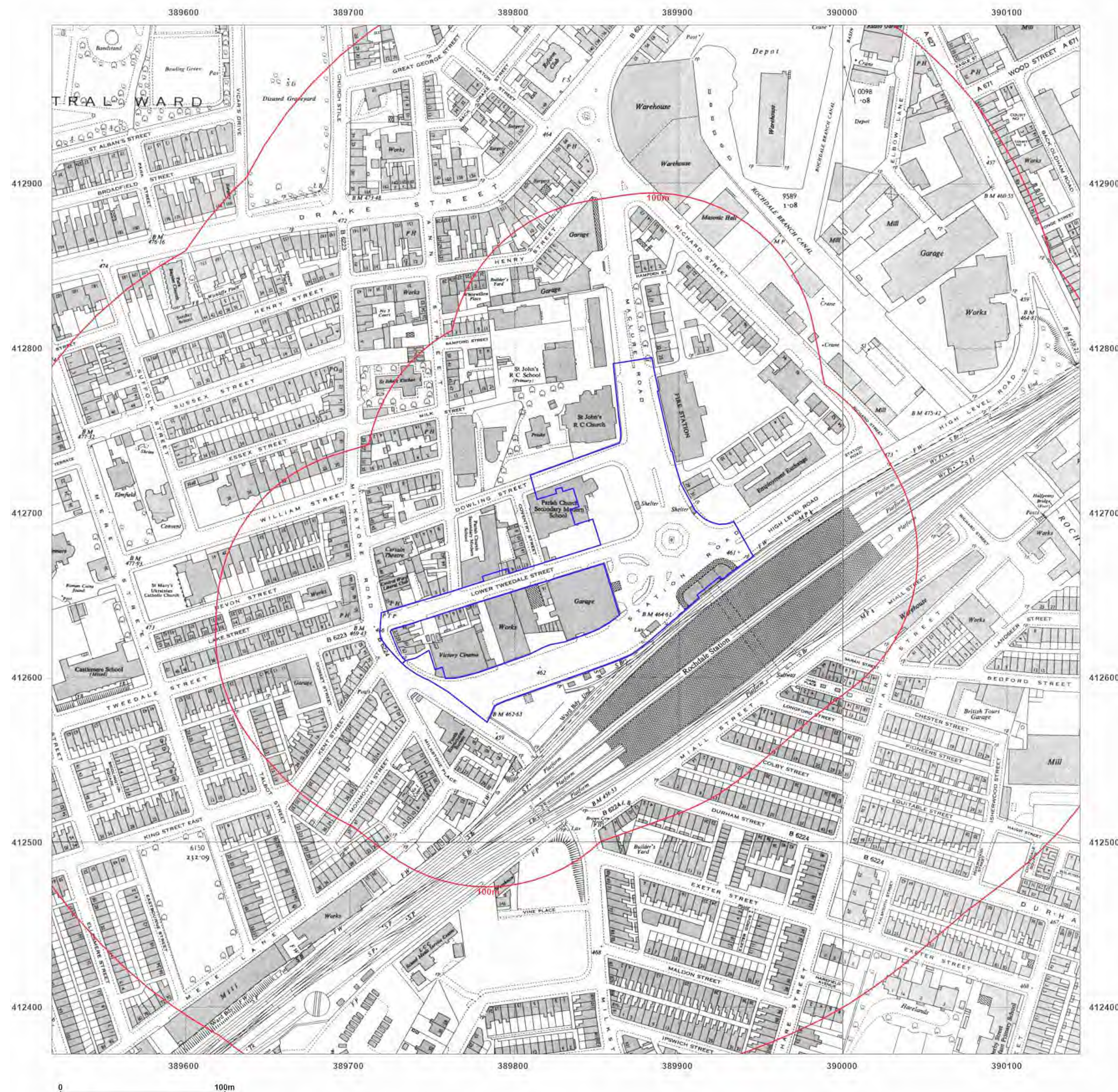


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Map legend available at:
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Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1975-1978

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
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Revised N/A
Edition N/A
Copyright 1977
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1975
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1975
Levelled N/A

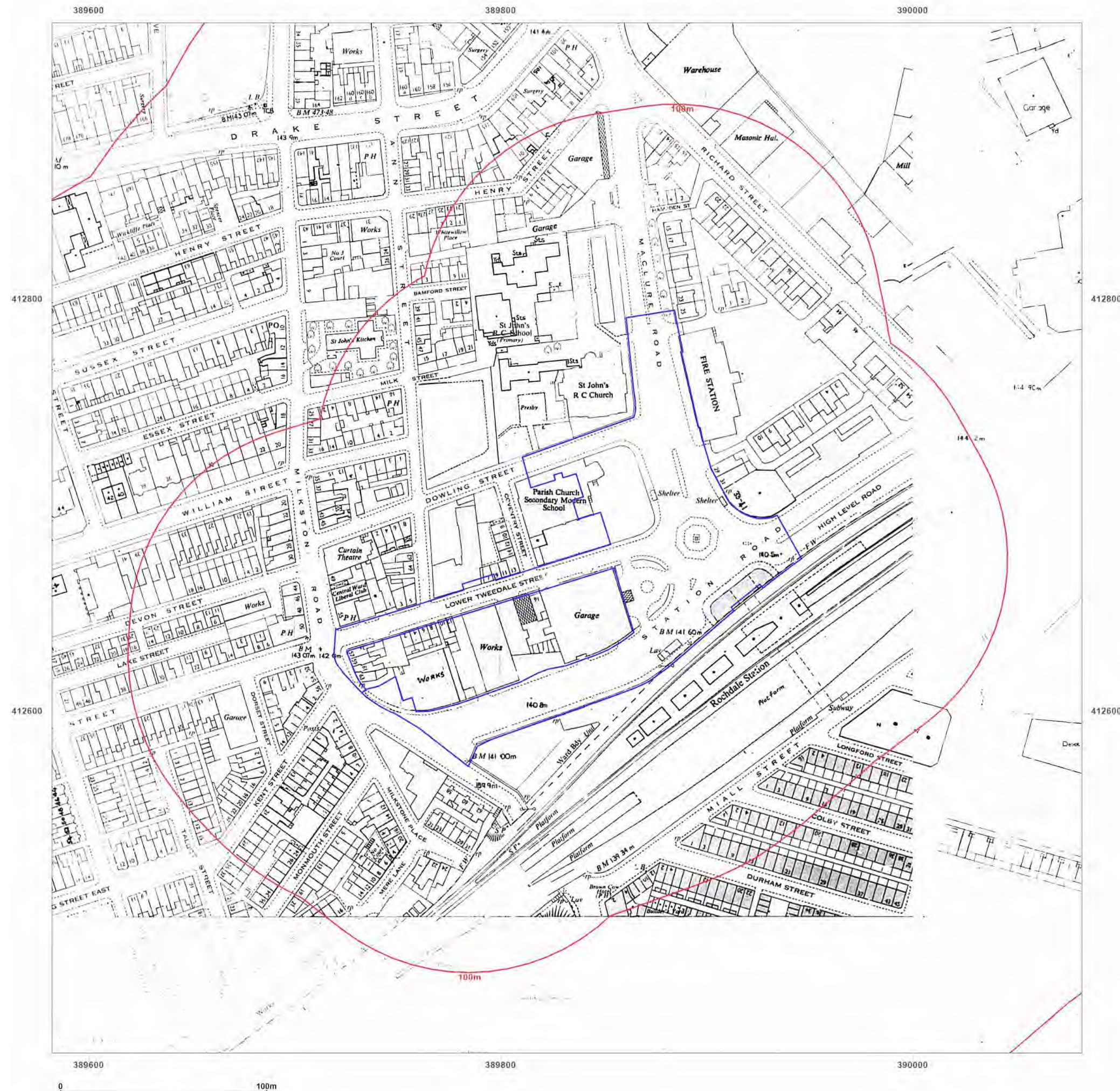


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Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1982-1985

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1984
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Revised N/A
Edition N/A
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Levelled 1956

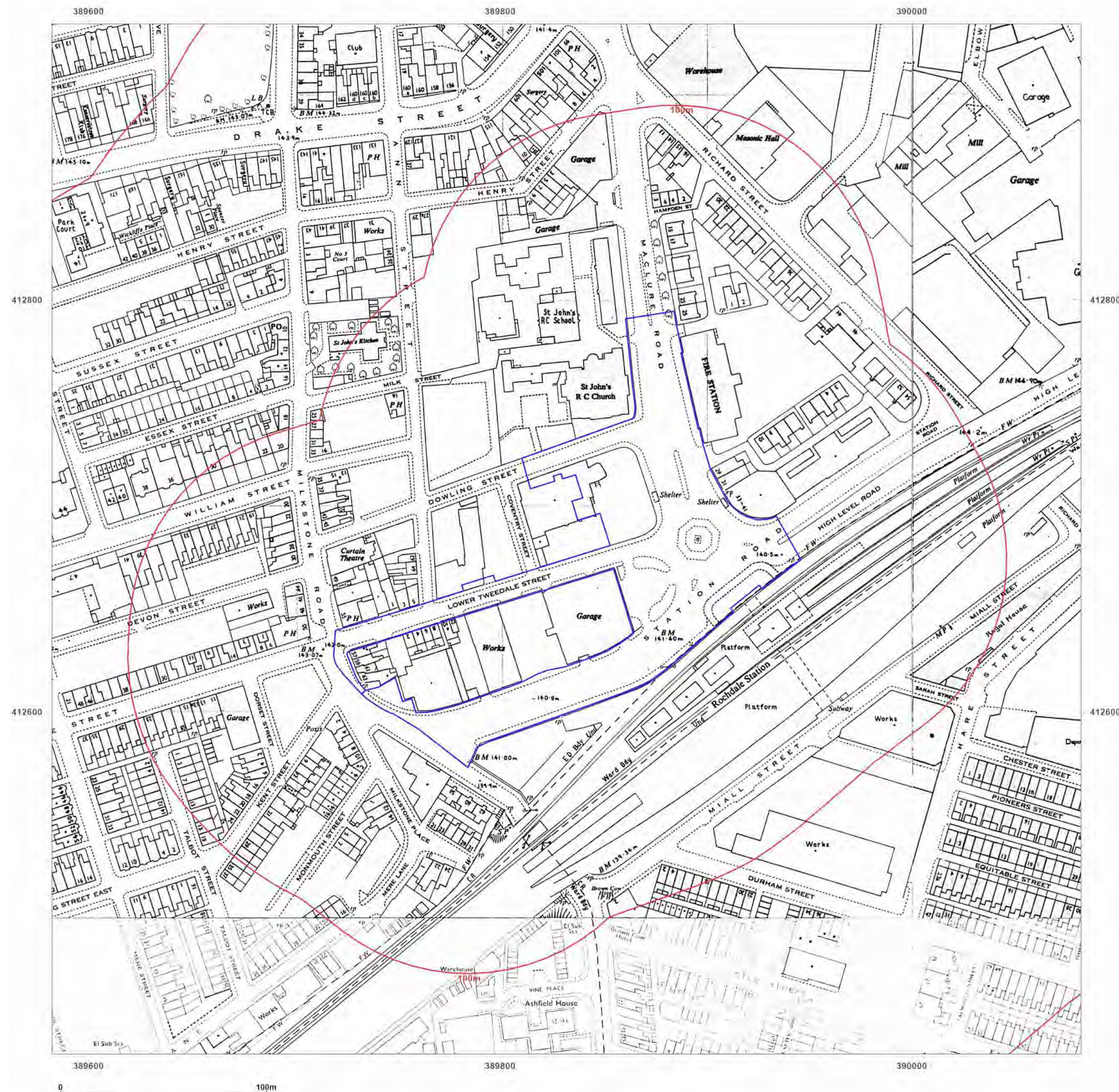


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Production date: 12 August 2024

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1985-1989

Scale: 1:1,250

Printed at: 1:2,000



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Revised 1984
Edition N/A
Copyright 1985
Levelled 1956

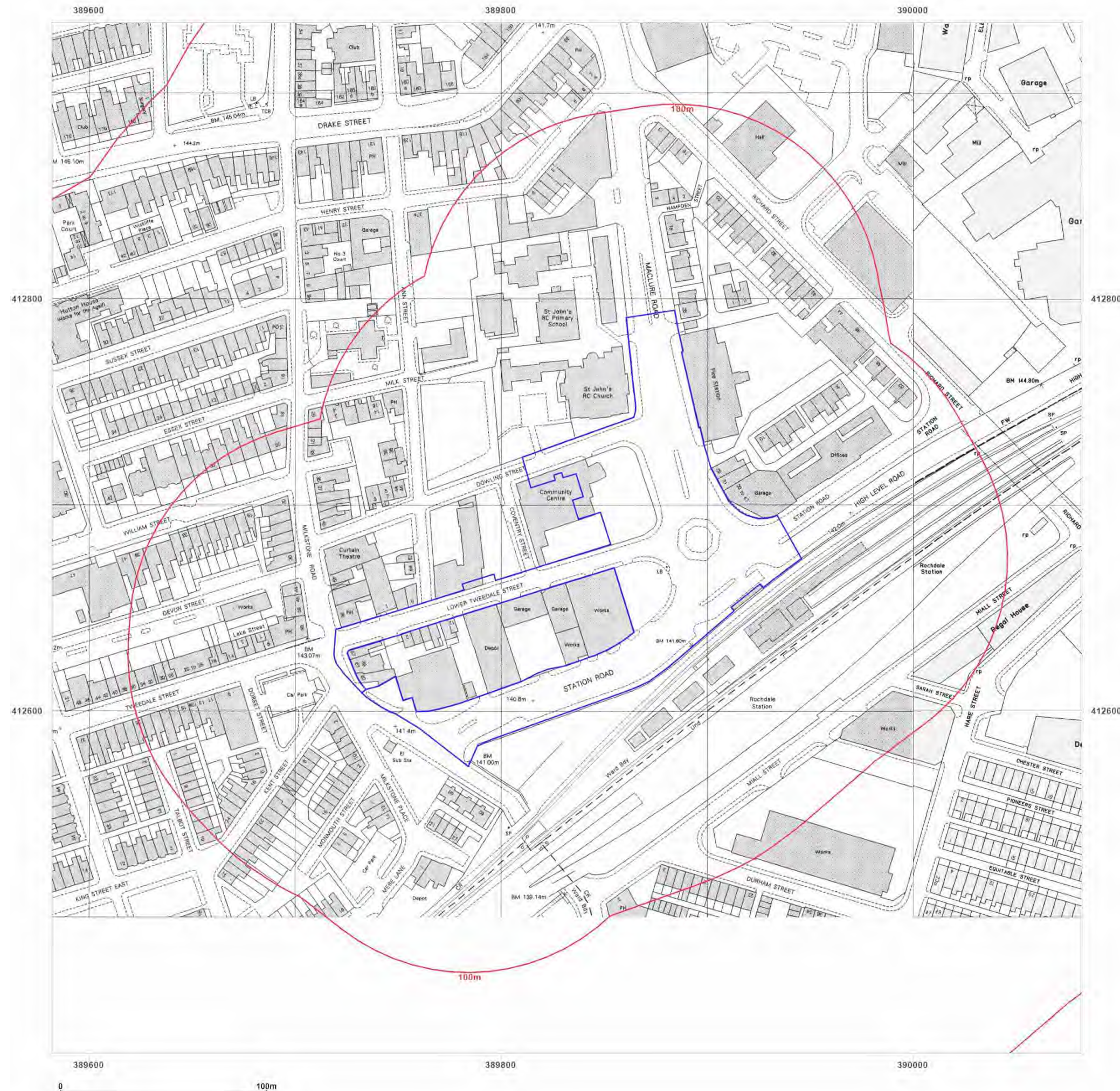


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Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1985-1990

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
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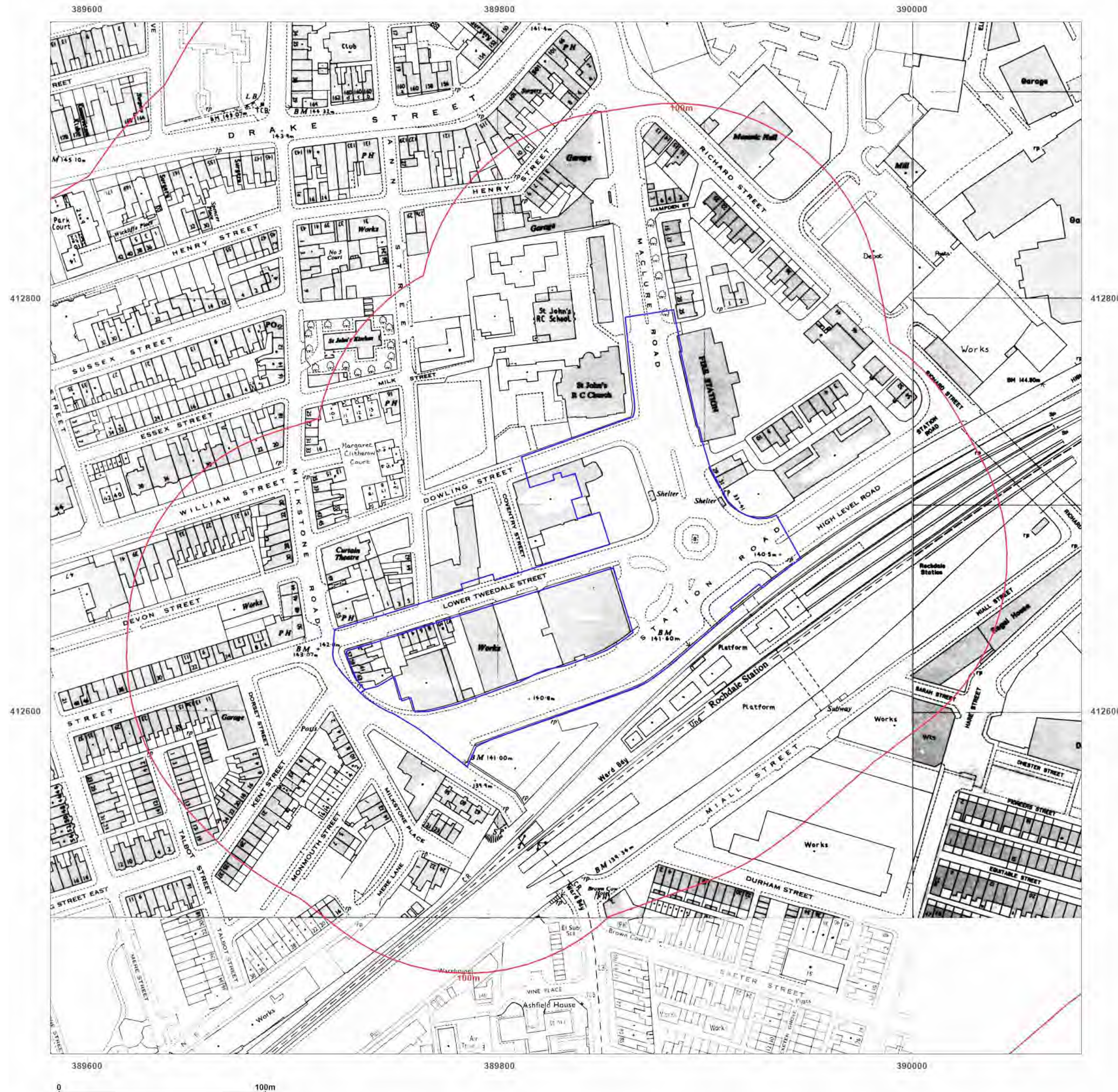


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Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1988-1992

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1992
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Revised 1988
Edition N/A
Copyright 1988
Levelled 1958

Surveyed 1992
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

Surveyed 1957
Revised 1985
Edition N/A
Copyright 1991
Levelled 1956

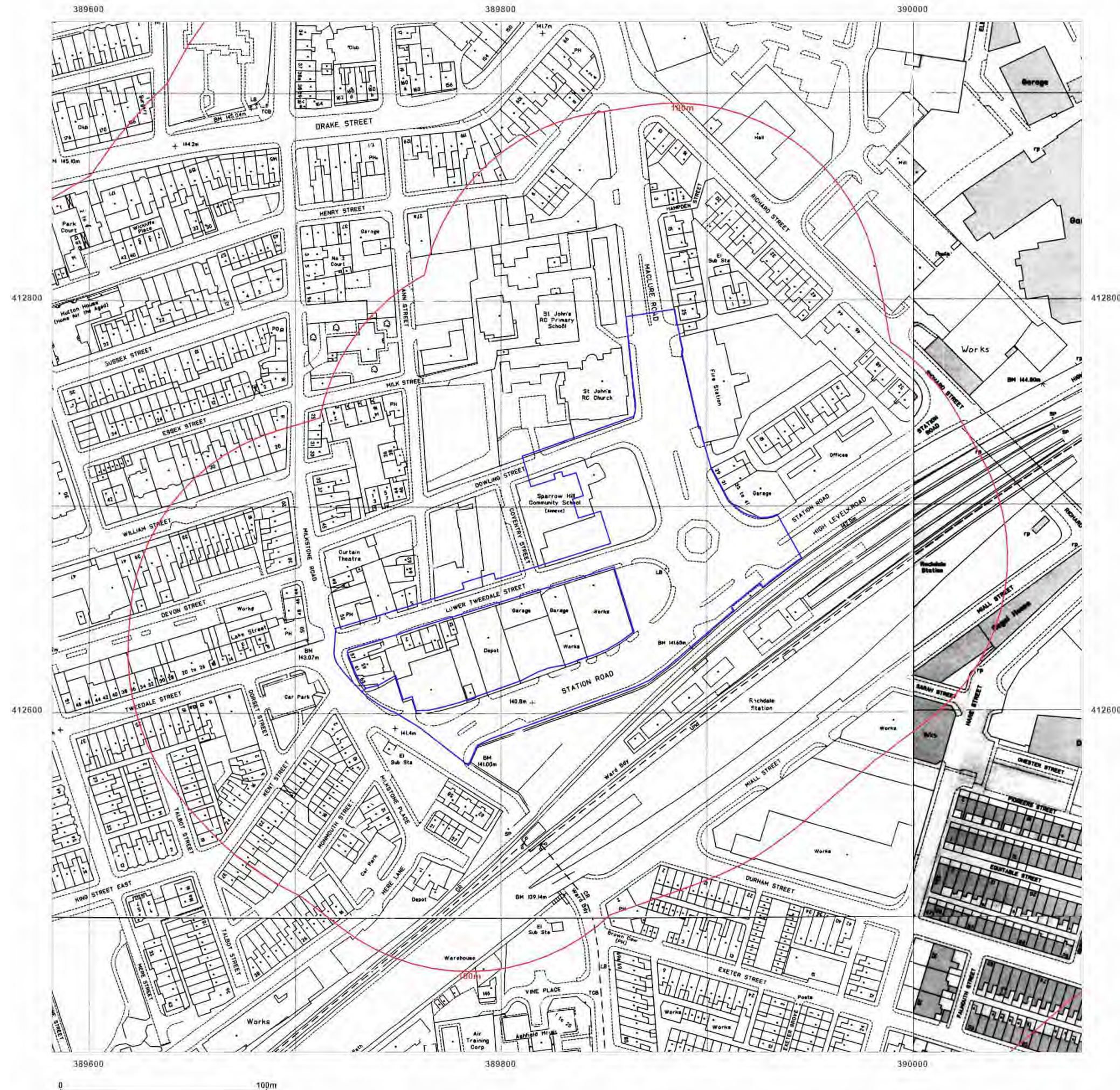


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Map legend available at:
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Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1992-1995

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1995
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Surveyed 1994
Revised 1994
Edition N/A
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Surveyed 1992
Revised N/A
Edition N/A
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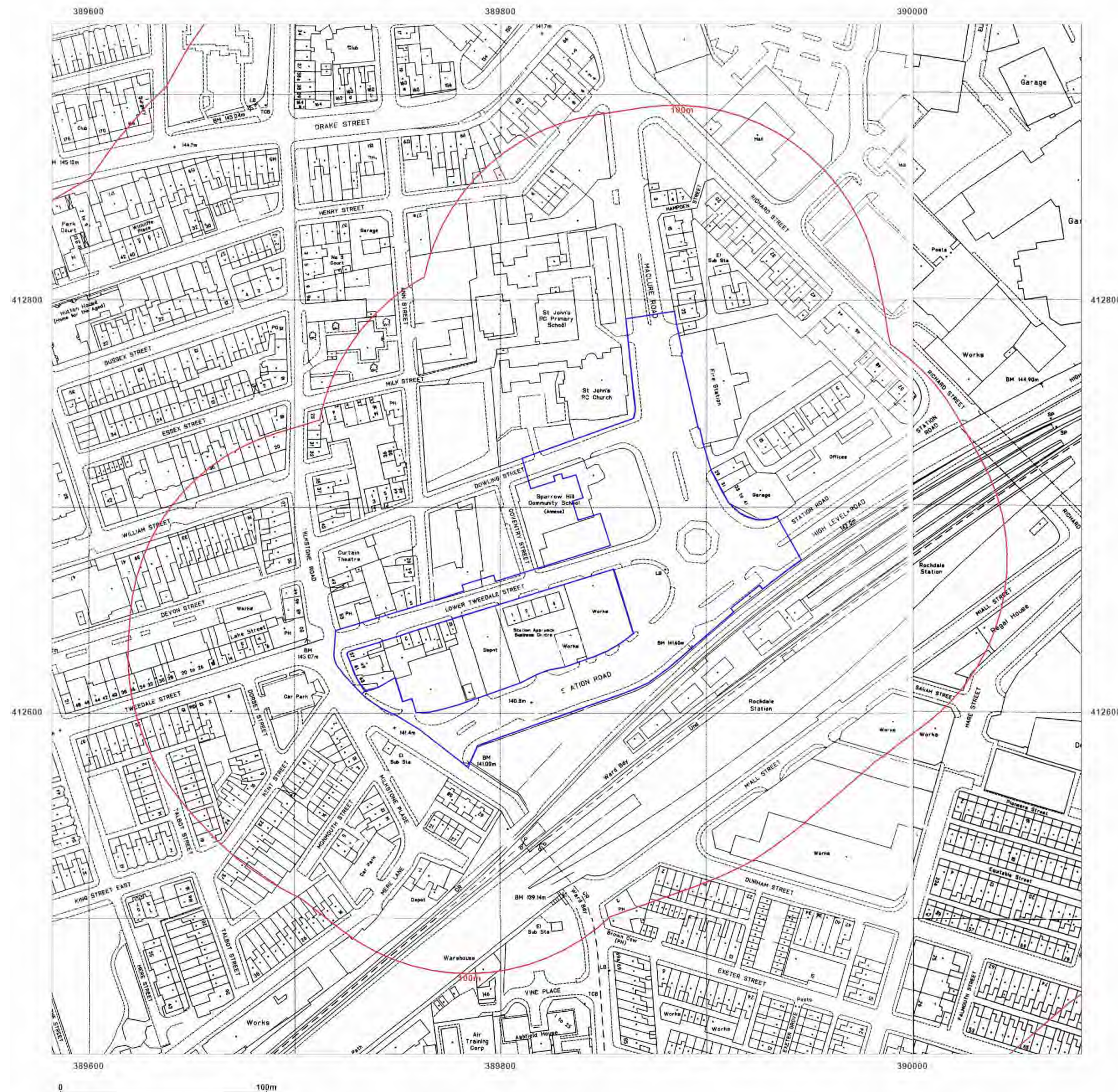


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Production date: 12 August 2024

Map legend available at:
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Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: National Grid

Map date: 1993-1995

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1995
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Edition N/A
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1994
Revised N/A
Edition N/A
Copyright 1994
Levelled N/A

Surveyed 1993
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

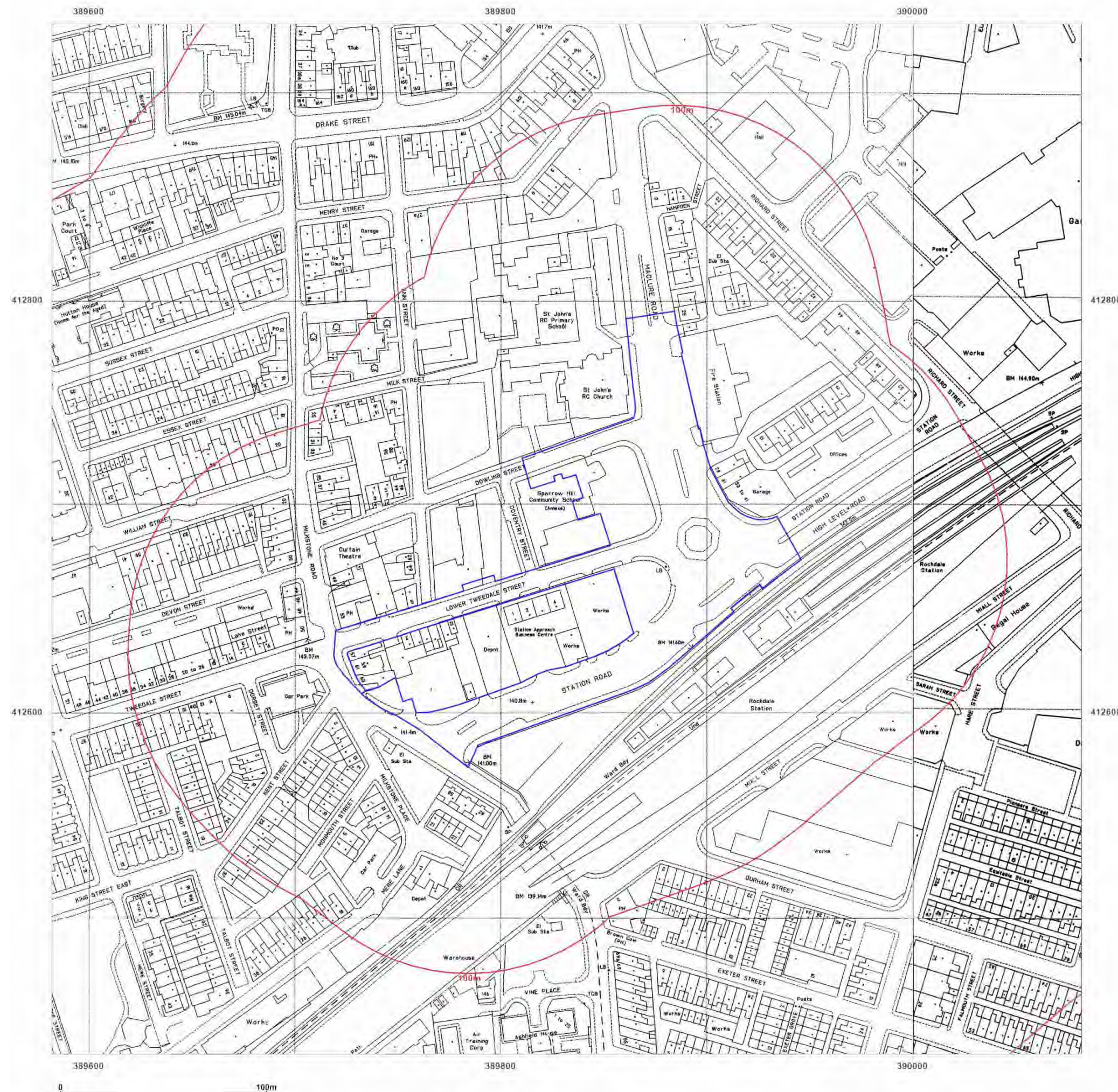


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Site Details:

Rochdale Station Square, OL11
1DR

Client Ref: PO: UK2508018. Rochdale Station Square
Report Ref: GS-22R-1CK-6SA-DSV
Grid Ref: 389832, 412684

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



2003



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Production date: 12 August 2024

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Appendix C

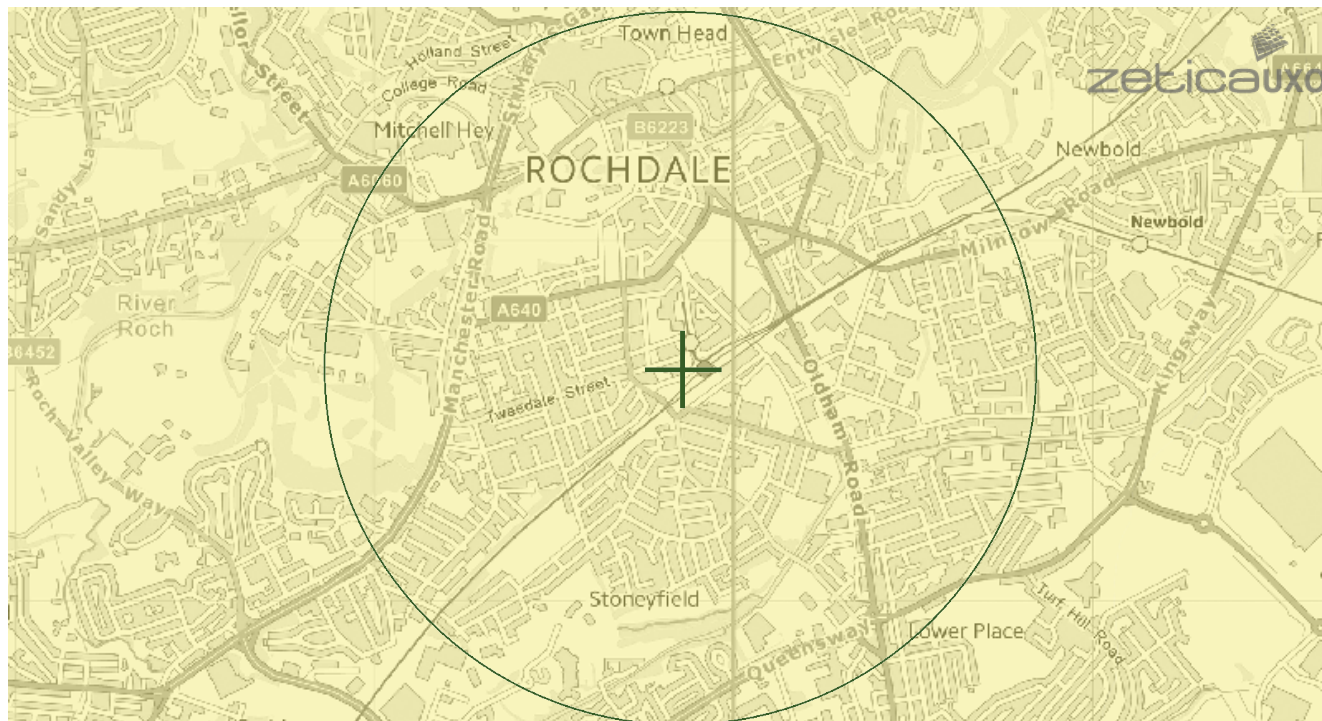
Zetica UXO Risk Map & PDSA

UNEXPLODED BOMB RISK MAP



SITE LOCATION

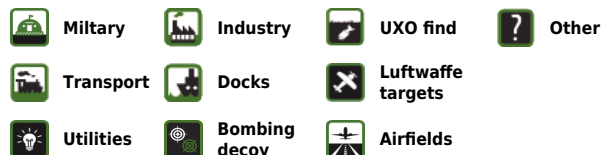
Location: OL11 1DR,
Map Centre: 389823,412652



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- Low:** Areas indicated as having 15 bombs per 1000acre or less.



How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density. Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then [additional detailed research](#) is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our [pre-desk study assessments \(PDSA\)](#) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: [+44 \(0\) 1993 886682](tel:+44201993886682) email: uxo@zetica.com web: www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the [accompanying notes on our website](#).

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgement. The copyright remains with Zetica Ltd.

Pre-Desk Study Assessment

Site:	Rochdale Station Square, Greater Manchester
Client:	Arcadis
Contact:	Emily Lyons
Date:	21 th August 2024
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Docks, wharves, and warehouses on the River Roch. ■ Transport infrastructure and public utilities. ■ Industries important to the war effort, including munitions factories and engineering and metal works. ■ Military barracks, camps, depots, and training areas.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified.
WWII Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Docks, wharves, and warehouses on the River Roch. ■ Transport infrastructure and public utilities. ■ Industries important to the war effort, including munitions factories and engineering and metal works. ■ Military barracks, camps, depots, and training areas. ■ Anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	During WWII the Site was located in the County Borough (CB) of Rochdale, which officially recorded 4No. High Explosive (HE) bombs with a bombing density of 0.4 bombs per 405 hectares (ha). No readily available records have been found to indicate that the Site was bombed.
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	A detailed desk study, whilst always prudent, is not considered essential in this instance.
Further information	For information about Zetica's detailed UXO desk studies and other UXO services, please visit our website: www.zeticauxo.com. Details and downloadable resources covering the most common sources of UXO hazard affecting sites in the UK can be found here. If you have any further queries, please don't hesitate to get in contact with us at uxo@zetica.com or 01993 886 682.

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.

It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.

Appendix D

Exploratory Hole Logs

Project
Rochdale Station Square
Client
Rochdale Borough Council

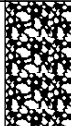
Project No.
30220231
Easting (OS mE)
389907.00

Ground Level (mAOD)

Northing (OS mN)
412697.00

Start Date
20/12/2024
End Date
20/12/2024

Scale
1:15
Sheet 1 of 1

PROGRESS	SAMPLES	TESTS AND MEASUREMENTS				STRATA		Strike	Depth (Thick)	Level	Install/ Backfill
Date / Time Casing / DTW (Remarks)	Type - Depth (m)	Type - Depth (m) - Result				Description	Legend				
	(ES 1) 0.30					MACADAM			(0.25)		
						MADE GROUND: Yellowish beige slightly silty sandy subangular to angular fine to medium GRAVEL of limestone. [Type 1]			0.25 (0.30)		
						MADE GROUND: Dark grey slightly sandy CLAY. Sand is fine to medium. Hydrocarbon odour throughout <i>Subangular cobbles of part red brick.</i>			0.55 (0.45)		
(ES 2) 0.80									1.00		

DRILLING TECHNIQUE			HOLE / CASING DIAMETER				WATER OBSERVATIONS						NO FLUSH UNDERTAKEN				WATER ADDED: OTHER		
From	To	Type	Hole Dia.	Depth	Casing Dia.	Depth	Date/Time	Strike	Rest	Mins	Casing	Sealed	From	To	Rtn%	Type	From	To	Litres
0.00	0.25	Pavement Core	300	1.00															
0.25	1.00	Inspection Pit																	

MONITORING INSTRUMENTS			INSTRUMENT SCREEN DESIGN				REMARKS												
Name	Type	m AGL	Name	From	To	Dia.													
							Pavement core to 0.25m bgl. Hand Pit ceased at target depth. No groundwater observed during the advancement of the pit Ground level was not assessed as part of the works												

Unless otherwise stated:
Depth (m bgl), Diameter (mm), From/To (m bgl),
Level (m AOD/ASD), Thickness (m), Time (hhmm),
Height Above Ground Level (m AGL)

Equipment Used
Insulated Hand Tools, Coring Unit 1.00m

Logged By
RL
Checked By
EY

CLIENT:	Rochdale Borough Council	Date	20 - 21/12/24	
REFERENCE:	30220231	SITE NAME:	Rochdale Station Square	

Plate 1.

C04: Pavement core.

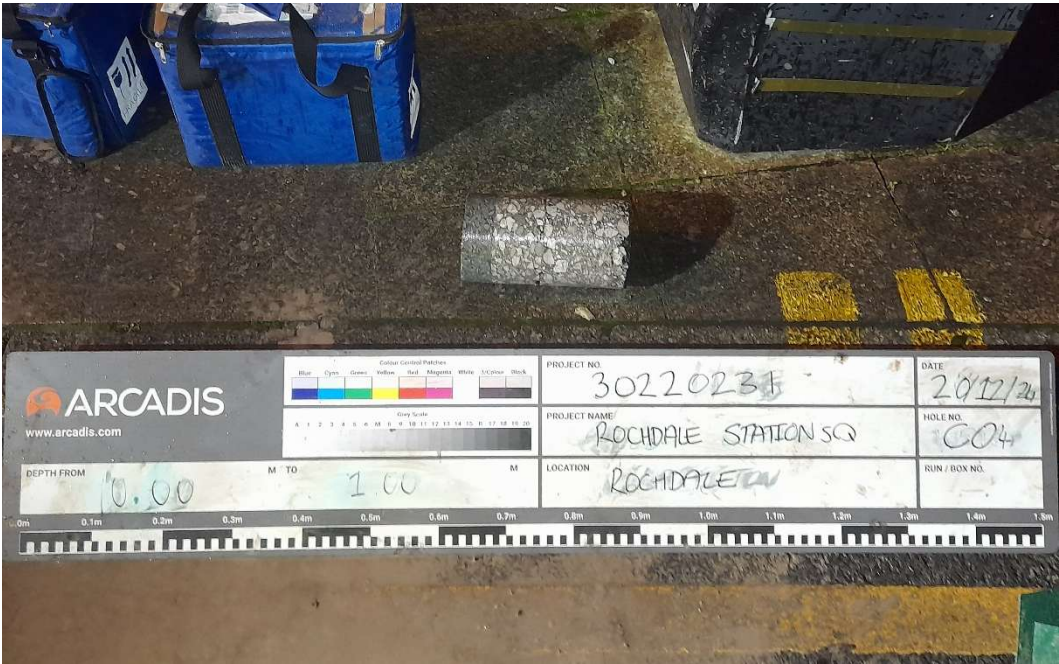


Plate 2.

C04: Soil arisings 0.00 – 1.00m bgl.



CLIENT:	Rochdale Borough Council	Date	20 - 21/12/24	
REFERENCE:	30220231	SITE NAME:	Rochdale Station Square	

Plate 3.

C04: Completed hand excavated pit.



Project
Rochdale Station Square
Client
Rochdale Borough Council

Project No.
30220231
Easting (OS mE)
389887.00

Ground Level (mAOD)

Northing (OS mN)
412752.00

Start Date
20/12/2024
End Date
20/12/2024

Scale
1:15
Sheet 1 of 1

PROGRESS	SAMPLES	TESTS AND MEASUREMENTS				STRATA		Strike	Depth (Thick)	Level	Install/ Backfill
Date / Time Casing / DTW (Remarks)	Type - Depth (m)	Type - Depth (m) - Result				Description	Legend				
(ES 1) 0.60						MACADAM			(0.20)		
						CONCRETE (no reinforcement)			0.20		
						MADE GROUND: Dark orangish brown slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to medium of sandstone, porcelain, and red brick.			(0.25)		
						MADE GROUND: Brown sandy COBBLES of subangular brick and sandstone. Sand is fine to medium.			0.45		
									(0.25)		

DRILLING TECHNIQUE			HOLE / CASING DIAMETER				WATER OBSERVATIONS						NO FLUSH UNDERTAKEN				WATER ADDED: OTHER		
From	To	Type	Hole Dia.	Depth	Casing Dia.	Depth	Date/Time	Strike	Rest	Mins	Casing	Sealed	From	To	Rtn%	Type	From	To	Litres
0.00	0.45	Pavement Core Inspection Pit	300	0.75															

MONITORING INSTRUMENTS			INSTRUMENT SCREEN DESIGN				REMARKS													
Name	Type	m AGL	Name	From	To	Dia.														
							Pavement core to 0.45m bgl. Hand pit ceased due to refusal on cobbles of brick. No groundwater observed during the advancement of the pit Ground level was not assessed as part of the works													

Unless otherwise stated:
Depth (m bgl), Diameter (mm), From/To (m bgl),
Level (m AOD/ASD), Thickness (m), Time (hhmm),
Height Above Ground Level (m AGL)

Equipment Used
**Insulated Hand Tools, Dedicated
Coring Unit**

Termination Depth
0.75m

Logged By
RL

Checked By
EY

CLIENT:	Rochdale Borough Council	Date	20 - 21/12/24	
REFERENCE:	30220231	SITE NAME:	Rochdale Station Square	

Plate 4.

C06: Pavement core.



Plate 5.

C06: Pavement core.



CLIENT:	Rochdale Borough Council	Date	20 - 21/12/24	
REFERENCE:	30220231	SITE NAME:	Rochdale Station Square	

Plate 6.

C06: Soil arisings 0.00 – 0.75m bgl.



Project
Rochdale Station Square
Client
Rochdale Borough Council

Project No.
30220231
Easting (OS mE)
389853.00

Ground Level (mAOD)

Northing (OS mN)
412611.00

Start Date
20/12/2024
End Date
20/12/2024

Scale
1:15
Sheet 1 of 1

PROGRESS	SAMPLES	TESTS AND MEASUREMENTS	STRATA		Strike	Depth (Thick)	Level	Install/ Backfill
Date / Time Casing / DTW (Remarks)	Type - Depth (m)	Type - Depth (m) - Result	Description	Legend				
(ES 1) 0.40	(ES 2) 0.60		MACADAM			(0.13)		
			MADE GROUND: Sandstone cobble setts, approximately 15cm x 15cm x 15cm.			0.13		
			MADE GROUND: Orangish brown slightly clayey sandy subangular to angular fine to medium GRAVEL of brick, sandstone and porcelain. Sand is fine to medium. Hydrocarbon odour throughout.			(0.14)		
			MADE GROUND: Dark brown slightly gravelly fine to coarse SAND with frequent subangular fine to medium cobbles of red brick and sandstone. Gravel is subangular fine to medium of brick and sandstone.			0.27		
						(0.23)		
						0.50		
						(0.20)		
						0.70		

DRILLING TECHNIQUE			HOLE / CASING DIAMETER				WATER OBSERVATIONS						NO FLUSH UNDERTAKEN				WATER ADDED: OTHER		
From	To	Type	Hole Dia.	Depth	Casing Dia.	Depth	Date/Time	Strike	Rest	Mins	Casing	Sealed	From	To	Rtn%	Type	From	To	Litres
0.00	0.27	Pavement Core	300	0.70															
0.27	0.70	Inspection Pit																	

MONITORING INSTRUMENTS			INSTRUMENT SCREEN DESIGN				REMARKS												
Name	Type	m AGL	Name	From	To	Dia.													
							Pavement core to 0.27m bgl. Hand Pit ceased due to refusal on cobbles of brick. No groundwater observed during the advancement of the pit Ground level was not assessed as part of the works												

Unless otherwise stated:
Depth (m bgl), Diameter (mm), From/To (m bgl),
Level (m AOD/ASD), Thickness (m), Time (hhmm),
Height Above Ground Level (m AGL)

Equipment Used
Coring Unit, Insulated Hand Tools 0.70m

Logged By
RL
Checked By
EY

CLIENT:	Rochdale Borough Council	Date	20 - 21/12/24	
REFERENCE:	30220231	SITE NAME:	Rochdale Station Square	

Plate 7.

C10: Pavement core.



Plate 8.

C10: Pavement core.



CLIENT:	Rochdale Borough Council	Date	20 - 21/12/24	
REFERENCE:	30220231	SITE NAME:	Rochdale Station Square	

Plate 9.

C10: Soil arisings 0.00 – 0.70m bgl.



Plate 10.

C10: Completed hand excavated pit.



Project
Rochdale Station Square
Client
Rochdale Borough Council

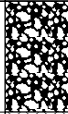
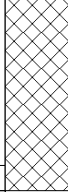
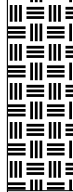
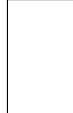
Project No.
30220231
Easting (OS mE)
389882.00

Ground Level (mAOD)

Northing (OS mN)
412674.00

Start Date
20/12/2024
End Date
20/12/2024

Scale
1:15
Sheet 1 of 1

PROGRESS	SAMPLES	TESTS AND MEASUREMENTS	STRATA		Strike	Depth (Thick)	Level	Install/ Backfill
Date / Time Casing / DTW (Remarks)	Type - Depth (m)	Type - Depth (m) - Result	Description	Legend				
(ES 1) 0.50			MADE GROUND: MACADAM			(0.22)		
			MADE GROUND: Yellowish beige slightly silty sandy subangular to angular fine to medium GRAVEL of limestone with rare subangular cobbles of the same. Sand is fine to medium. [Type 1]			0.22 (0.38)		
			Increased limestone cobbles			0.60		

DRILLING TECHNIQUE			HOLE / CASING DIAMETER				WATER OBSERVATIONS						NO FLUSH UNDERTAKEN				WATER ADDED: OTHER		
From	To	Type	Hole Dia.	Depth	Casing Dia.	Depth	Date/Time	Strike	Rest	Mins	Casing	Sealed	From	To	Rtn%	Type	From	To	Litres
0.00	0.22	Pavement Core Inspection Pit	300	0.60															

MONITORING INSTRUMENTS			INSTRUMENT SCREEN DESIGN				REMARKS												
Name	Type	m AGL	Name	From	To	Dia.													
							Pavement core to 0.22m bgl. Hand Pit ceased at due to refusal on well compacted ground. No groundwater observed during the advancement of the pit Ground level was not assessed as part of the works												

Unless otherwise stated:
Depth (m bgl), Diameter (mm), From/To (m bgl),
Level (m AOD/ASD), Thickness (m), Time (hhmm),
Height Above Ground Level (m AGL)

Equipment Used
Coring Unit, Insulated Hand Tools 0.60m

Logged By
RL
Checked By
EY

CLIENT:	Rochdale Borough Council	Date	20 - 21/12/24	
REFERENCE:	30220231	SITE NAME:	Rochdale Station Square	

Plate 11.

C24: Pavement core.



Plate 12.

C24: Pavement core.



CLIENT:	Rochdale Borough Council	Date	20 - 21/12/24	
REFERENCE:	30220231	SITE NAME:	Rochdale Station Square	

Plate 13.

C24: Soil arisings 0.00 – 0.60m bgl.



Appendix E

Laboratory Certificates



Units 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

ARCADIS UK Ltd
Suite 1A
4 Piccadilly Place
Manchester
M1 3BN

Attention: Ryan Lindsay

CERTIFICATE OF ANALYSIS

Date of report Generation: 13 January 2025
Customer: ARCADIS UK Ltd
Sample Delivery Group (SDG): 241221-63
Your Reference: 30220231-3
Location: Rochdale Station SR
Report No: 752643
Order Number: 30220231-3

We received 3 samples on Saturday December 21, 2024 and 3 of these samples were scheduled for analysis which was completed on Monday January 13, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Lauren Ellis

General Manager Western Europe Environmental



1291

ALS Laboratories (UK) Limited registered Office: Torrington Avenue, Coventry CV4 9GU. Registered in England and Wales No.

02201055

Version: 3.8 Version Issued: 12/12/2024



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30885411	C10		0.40 - 0.40	20/12/2024
30885412	C10		0.60 - 0.60	20/12/2024
30885413	C24		0.50 - 0.50	20/12/2024

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

Results Legend Test No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	30885411	30885412	30885413
	Customer Sample Reference	C10	C10	C24
	AGS Reference			
	Depth (m)	0.40 - 0.40	0.60 - 0.60	0.50 - 0.50
	Container	250g Amber Jar (ALE210) 1kg TUB with Handle	250g Amber Jar (ALE210) 1kg TUB with Handle	250g Amber Jar (ALE210) 1kg TUB with Handle
	Sample Type	S	S	S
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3		
CEN Readings	All	NDPs: 0 Tests: 2		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2		
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 2		
EPH and CWG (Filtered) by FID	All	NDPs: 0 Tests: 2		
EPH CWG GC (S)	All	NDPs: 0 Tests: 3		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 2		
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3		
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2		
Mercury Dissolved	All	NDPs: 0 Tests: 2		
Metals in solid samples by OES	All	NDPs: 0 Tests: 3		
PAH by GCMS	All	NDPs: 0 Tests: 3		
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 2		



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

Results Legend	Lab Sample No(s)		30885411	30885412	30885413
	Customer Sample Reference		C10	C10	C24
	AGS Reference				
	Depth (m)		0.40 - 0.40	0.60 - 0.60	0.50 - 0.50
	Container		1kg TUB with Handle 250g Amber Jar (ALE210)	1kg TUB with Handle 250g Amber Jar (ALE210)	1kg TUB with Handle 250g Amber Jar (ALE210)
	Sample Type		S	S	S
pH	All	NDPs: 0 Tests: 3	X	X	X
pH Value	All	NDPs: 0 Tests: 2	X		X
pH Value of Filtered Water	All	NDPs: 0 Tests: 2	X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	X	X	X
Phenols by HPLC (W)	All	NDPs: 0 Tests: 2	X		X
Sample description	All	NDPs: 0 Tests: 3	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 3	X	X	X
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 2	X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 3	X	X	X
VOC MS (S)	All	NDPs: 0 Tests: 3		X	X
VOC MS (W)	All	NDPs: 0 Tests: 2	X		X



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30885411	C10	0.40 - 0.40	Dark Brown	Sand	Stones	Brick
30885412	C10	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	None
30885413	C24	0.50 - 0.50	Light Brown	Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

[illegible]

SDG: 241221-63

Report Number: 752643

Superseded Report:

Client Ref.: 30220231-3

Location: Rochdale Station SR

PAH by GCMS

[illegible]

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

VOC MS (S)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5$ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref.	C10 0.40 - 0.40 SOLID	02/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Depth (m)	20/12/2024 00:00:00										
Sample Type	21/12/2024 05:00:00										
Date Sampled	241221-63										
Date Received	30885411										
SDG	TM048										
Original Sample											
Method Number											
Cust. Sample Ref.	C10 0.60 - 0.60 SOLID	02/01/2025	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	20/12/2024 00:00:00										
Sample Type	21/12/2024 05:00:00										
Date Sampled	241221-63										
Date Received	30885412										
SDG	TM048										
Original Sample											
Method Number											
Cust. Sample Ref.	C24 0.50 - 0.50 SOLID	02/01/25	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	20/12/2024 00:00:00										
Sample Type	21/12/2024 05:00:00										
Date Sampled	241221-63										
Date Received	30885413										
SDG	TM048										
Original Sample											
Method Number											



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.108

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Rochdale Station SR

Natural Moisture Content (%) 25.5

Dry Matter Content (%) 79.7

Case

SDG 241221-63

Lab Sample Number(s) 30885411

Sampled Date 20-Dec-2024

Customer Sample Ref. C10

Depth (m) 0.40 - 0.40

Eluate Analysis

C₂ Concⁿ in 10:1 eluate (mg/l) A₂ 10:1 concⁿ leached (mg/kg)

	Result	Limit of Detection	Result	Limit of Detection			
Chromium, Hexavalent	<0.03	<0.03	<0.3	<0.3	-	-	-
Cyanide, Free	<0.05	<0.05	<0.5	<0.5	-	-	-
Carbon, Organic (diss.filt)	4.36	<3	43.6	<30	-	-	-
Mercury (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic (diss.filt)	0.00233	<0.0005	0.0233	<0.005	-	-	-
Boron (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Cadmium (diss.filt)	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Calcium (Dis.Filt)	10.2	<0.2	102	<2	-	-	-
Chromium (diss.filt)	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper (diss.filt)	0.00451	<0.0003	0.0451	<0.003	-	-	-
Lead (diss.filt)	0.000521	<0.0002	0.00521	<0.002	-	-	-
Nickel (diss.filt)	0.00101	<0.0004	0.0101	<0.004	-	-	-
Selenium (diss.filt)	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc (diss.filt)	0.00225	<0.001	0.0225	<0.01	-	-	-
Acenaphthene (diss.filt)	0.00301	<0.000005	0.0301	<0.00005	-	-	-
Acenaphthylene (diss.filt)	0.0000339	<0.000005	0.000339	<0.00005	-	-	-
Anthracene (diss.filt)	0.00045	<0.000005	0.0045	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000359	<0.000005	0.00359	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000325	<0.000002	0.00325	<0.00002	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000434	<0.000005	0.00434	<0.00005	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000255	<0.000005	0.00255	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Chrysene (diss.filt)	0.000485	<0.000005	0.00485	<0.00005	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000365	<0.000005	0.000365	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0015	<0.000005	0.015	<0.00005	-	-	-
Fluorene (diss.filt)	0.00113	<0.000005	0.0113	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Naphthalene (diss.filt)	0.0000633	<0.00001	0.000633	<0.0001	-	-	-
PAH Sum of EPA 16 detected (Diss.filt)	0.0131	<0.000082	0.131	<0.00082	-	-	-
Phenanthrene (diss.filt)	0.00353	<0.000005	0.0353	<0.00005	-	-	-
Pyrene (diss.filt)	0.00117	<0.000005	0.0117	<0.00005	-	-	-
Cresols	<0.006	<0.006	<0.06	<0.06	-	-	-
Phenol	<0.002	<0.002	<0.02	<0.02	-	-	-
Phenols, Total Detected monohydric	<0.016	<0.016	<0.16	<0.16	-	-	-
Xylenols	<0.008	<0.008	<0.08	<0.08	-	-	-

Leach Test Information

Date Prepared 23-Dec-2024
pH (pH Units) 8.17
Conductivity (µS/cm) 103
Volume Leachant (Litres) 0.878

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

13/01/2025 14:56:28

14:56:14 13/01/2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.108

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Rochdale Station SR

Natural Moisture Content (%) 25.5

Dry Matter Content (%) 79.7

Case

SDG 241221-63

Lab Sample Number(s) 30885411

Sampled Date 20-Dec-2024

Customer Sample Ref. C10

Depth (m) 0.40 - 0.40

Eluate Analysis

C₂ Concⁿ in 10:1 eluate (mg/l) **A₂** 10:1 concⁿ leached (mg/kg)

Result

Limit of Detection

Result

Limit of Detection

TPH CWG (W)

GRO Surrogate % recovery**	-	<0	-	<0	-	-	-
GRO >C5-C12	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics >C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC5-EC7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC7-EC8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC8-EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics & Aromatics >C5-35 (diss. filt)	<0.01	<0.01	<0.1	<0.1	-	-	-

VOC MS (W)

Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
m,p-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Sum of BTEX	<0.005	<0.005	<0.05	<0.05	-	-	-
Methyl tertiary butyl ether (MTBE)	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Sum of detected Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared 23-Dec-2024
pH (pH Units) 8.17
Conductivity (µS/cm) 103
Volume Leachant (Litres) 0.878

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

13/01/2025 14:56:28

14:56:14 13/01/2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.089

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Rochdale Station SR

Natural Moisture Content (%) 2.97

Dry Matter Content (%) 97.1

Case

SDG 241221-63

Lab Sample Number(s) 30885413

Sampled Date 20-Dec-2024

Customer Sample Ref. C24

Depth (m) 0.50 - 0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
Chromium, Hexavalent	<0.03	<0.03	<0.3	<0.3	-	-	-
Cyanide, Free	<0.05	<0.05	<0.5	<0.5	-	-	-
Carbon, Organic (diss.filt)	<3	<3	<30	<30	-	-	-
Mercury (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic (diss.filt)	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Boron (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Cadmium (diss.filt)	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Calcium (Dis.Filt)	7.86	<0.2	78.6	<2	-	-	-
Chromium (diss.filt)	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper (diss.filt)	0.000835	<0.0003	0.00835	<0.003	-	-	-
Lead (diss.filt)	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Nickel (diss.filt)	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium (diss.filt)	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc (diss.filt)	<0.001	<0.001	<0.01	<0.01	-	-	-
Acenaphthene (diss.filt)	0.00084	<0.000005	0.0084	<0.00005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	0.000251	<0.000005	0.00251	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000211	<0.000005	0.000211	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000275	<0.000002	0.0000275	<0.00002	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000504	<0.000005	0.0000504	<0.00005	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000391	<0.000005	0.000391	<0.00005	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000549	<0.000005	0.00549	<0.00005	-	-	-
Fluorene (diss.filt)	0.000378	<0.000005	0.00378	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Naphthalene (diss.filt)	0.000565	<0.00001	0.00565	<0.0001	-	-	-
PAH Sum of EPA 16 detected (Diss.filt)	0.00461	<0.000082	0.0461	<0.00082	-	-	-
Phenanthrene (diss.filt)	0.00157	<0.000005	0.0157	<0.00005	-	-	-
Pyrene (diss.filt)	0.000385	<0.000005	0.00385	<0.00005	-	-	-
Cresols	<0.006	<0.006	<0.06	<0.06	-	-	-
Phenol	<0.002	<0.002	<0.02	<0.02	-	-	-
Phenols, Total Detected monohydric	<0.016	<0.016	<0.16	<0.16	-	-	-
Xylenols	<0.008	<0.008	<0.08	<0.08	-	-	-

Leach Test Information

Date Prepared 23-Dec-2024
pH (pH Units) 9.45
Conductivity (µS/cm) 55
Volume Leachant (Litres) 0.897

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

13/01/2025 14:56:28

14:56:14 13/01/2025



CERTIFICATE OF ANALYSIS

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SDG: 241221-63
Client Ref.: 30220231-3Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.089

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Rochdale Station SR

Natural Moisture Content (%) 2.97

Dry Matter Content (%) 97.1

Case

SDG 241221-63

Lab Sample Number(s) 30885413

Sampled Date 20-Dec-2024

Customer Sample Ref. C24

Depth (m) 0.50 - 0.50

Eluate Analysis

C₂ Concⁿ in 10:1 eluate (mg/l) **A₂** 10:1 concⁿ leached (mg/kg)

Result

Limit of Detection

Result

Limit of Detection

TPH CWG (W)

GRO Surrogate % recovery**	-	<0	-	<0	-	-	-
GRO >C5-C12	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics >C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21 (diss.filt)	0.115	<0.01	1.15	<0.1	-	-	-
Aliphatics >C21-C35 (diss.filt)	0.099	<0.01	0.99	<0.1	-	-	-
Total Aliphatics >C12-C35 (diss.filt)	0.214	<0.01	2.14	<0.1	-	-	-
Aromatics >EC5-EC7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC7-EC8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC8-EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics & Aromatics >C5-35 (diss. filt)	0.214	<0.01	2.14	<0.1	-	-	-

VOC MS (W)

Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
m,p-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Sum of BTEX	<0.005	<0.005	<0.05	<0.05	-	-	-
Methyl tertiary butyl ether (MTBE)	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Sum of detected Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared 23-Dec-2024
pH (pH Units) 9.45
Conductivity (µS/cm) 55
Volume Leachant (Litres) 0.897

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

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SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM151	Determination of Hexavalent Chromium using Kone analyser
TM152	Analysis of Aqueous Samples by ICP-MS
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM218	The determination of PAH in soil samples by GC-MS
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM241	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser
TM245	Determination of GRO by Headspace in waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM439	Determination of Extractable Petroleum Hydrocarbons (EPH) CWG banding by GC-FID on liquids

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

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SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

Test Completion Dates

Lab Sample No(s)	30885411	30885412	30885413
Customer Sample Ref.	C10	C10	C24
AGS Ref.			
Depth	0.40 - 0.40	0.60 - 0.60	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Asbestos ID in Solid Samples	02-Jan-2025	02-Jan-2025	02-Jan-2025
CEN 10:1 Leachate (1 Stage)	23-Dec-2024		23-Dec-2024
CEN Readings	02-Jan-2025		02-Jan-2025
Cyanide Comp/Free/Total/Thiocyanate	02-Jan-2025		02-Jan-2025
Dissolved Metals by ICP-MS	09-Jan-2025		09-Jan-2025
Dissolved Organic/Inorganic Carbon	02-Jan-2025		02-Jan-2025
EPH and CWG (Filtered) by FID	03-Jan-2025		03-Jan-2025
EPH CWG GC (S)	07-Jan-2025	07-Jan-2025	07-Jan-2025
GRO by GC-FID (S)	06-Jan-2025	06-Jan-2025	06-Jan-2025
GRO by GC-FID (W)	31-Dec-2024		31-Dec-2024
Hexavalent Chromium (s)	03-Jan-2025	03-Jan-2025	03-Jan-2025
Hexavalent Chromium (w)	03-Jan-2025		03-Jan-2025
Mercury Dissolved	02-Jan-2025		31-Dec-2024
Metals in solid samples by OES	07-Jan-2025	07-Jan-2025	07-Jan-2025
Moisture at 105C	23-Dec-2024		23-Dec-2024
PAH by GCMS	07-Jan-2025	07-Jan-2025	07-Jan-2025
PAH in waters by GC-MS (diss.filt)	13-Jan-2025		13-Jan-2025
pH	02-Jan-2025	02-Jan-2025	02-Jan-2025
pH Value	31-Dec-2024		31-Dec-2024
pH Value of Filtered Water	02-Jan-2025		02-Jan-2025
Phenols by HPLC (S)	03-Jan-2025	03-Jan-2025	03-Jan-2025
Phenols by HPLC (W)	02-Jan-2025		02-Jan-2025
Sample description	23-Dec-2024	23-Dec-2024	23-Dec-2024
Total Organic Carbon	07-Jan-2025	07-Jan-2025	07-Jan-2025
TPH CWG Filtered (W)	03-Jan-2025		03-Jan-2025
TPH CWG GC (S)	07-Jan-2025	07-Jan-2025	07-Jan-2025
VOC MS (S)	07-Jan-2025	07-Jan-2025	06-Jan-2025
VOC MS (W)	03-Jan-2025		03-Jan-2025



CERTIFICATE OF ANALYSIS

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SDG: 241221-63
Client Ref.: 30220231-3Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

ASSOCIATED AQC DATA

Cyanide Comp/Free/Total/Thiocyanate

Component	Method Code	QC 3087
Free Cyanide (W)	TM227	104.0 98.67 : 122.67
Thiocyanate (W)	TM227	96.5 91.75 : 115.75
Total Cyanide (W)	TM227	101.25 93.00 : 117.00

Dissolved Metals by ICP-MS

Component	Method Code	QC 3037	QC 3008
Aluminium	TM152	102.33 95.24 : 111.40	104.33 95.67 : 113.25
Antimony	TM152	103.17 94.33 : 112.23	104.17 96.18 : 111.18
Arsenic	TM152	101.83 94.83 : 110.43	103.5 94.27 : 111.07
Barium	TM152	103.17 93.82 : 113.06	104.5 91.84 : 114.42
Beryllium	TM152	101.0 94.87 : 113.47	105.67 94.83 : 116.93
Bismuth	TM152	102.17 95.28 : 111.68	103.17 95.88 : 111.08
Borate	TM152	103.7 88.00 : 112.00	
Boron	TM152	103.67 91.82 : 118.71	105.33 92.42 : 121.06
Cadmium	TM152	103.17 93.90 : 112.50	104.33 95.98 : 111.88
Calcium	TM152	103.33 94.54 : 110.75	103.33 96.22 : 109.10
Chromium	TM152	102.33 94.18 : 109.80	101.83 95.22 : 109.76
Cobalt	TM152	100.17 93.95 : 109.53	103.0 94.47 : 110.94
Copper	TM152	102.67 93.88 : 110.94	104.5 94.81 : 112.13
Iron	TM152	103.33 95.31 : 109.92	101.33 95.43 : 109.98
Lead	TM152	101.83 94.24 : 111.99	107.0 95.87 : 112.11
Lithium	TM152	100.5 94.28 : 113.28	104.5 93.93 : 115.73
Magnesium	TM152	105.33 93.45 : 108.63	102.0 93.91 : 108.37
Manganese	TM152	102.83 95.81 : 110.44	101.33 95.66 : 110.12
Molybdenum	TM152	99.67 93.46 : 109.15	102.5 93.76 : 109.43
Nickel	TM152	102.5 92.80 : 111.23	103.83 95.01 : 111.19
Phosphorus	TM152	102.0 93.78 : 110.72	102.0 93.82 : 109.72



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Superseded Report:

Dissolved Metals by ICP-MS

		QC 3037	QC 3008
Potassium	TM152	104.67 95.43 : 111.23	103.33 95.38 : 108.95
Selenium	TM152	101.5 94.10 : 113.00	104.67 94.20 : 113.10
Silver	TM152	103.0 91.22 : 112.22	104.0 94.95 : 112.75
Sodium	TM152	106.67 93.17 : 108.57	102.0 92.99 : 108.70
Strontium	TM152	103.0 95.28 : 111.33	102.0 95.55 : 111.45
Tellurium	TM152	105.5 95.60 : 115.20	107.33 95.38 : 114.78
Thallium	TM152	100.67 73.68 : 123.18	103.0 75.83 : 123.93
Tin	TM152	103.0 93.06 : 109.94	105.33 96.86 : 110.37
Titanium	TM152	101.83 94.67 : 110.97	106.5 95.88 : 112.88
Tungsten	TM152	102.67 93.55 : 109.35	104.83 95.38 : 109.38
Uranium	TM152	99.17 93.98 : 110.48	102.33 95.05 : 110.65
Vanadium	TM152	100.17 92.88 : 110.53	102.17 93.43 : 110.79
Zinc	TM152	103.67 96.14 : 111.23	104.67 95.71 : 112.92

Dissolved Organic/Inorganic Carbon

Component	Method Code	QC 3046
Total Organic Carbon	TM090	96.5 86.43 : 107.83

EPH and CWG (Filtered) by FID

Component	Method Code	QC 3080
Total Aliphatics >C12-C35 (a)	TM439	97.85 79.76 : 116.51
Total Aromatics >C12-C35 (a)	TM439	80.06 73.89 : 112.17
Total EPH >C10-C40	TM439	87.85 75.37 : 110.89

GRO by GC-FID (S)

Component	Method Code	QC 3049
QC	TM089	95.48 81.38 : 118.62



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Location: Rochdale Station SR

Superseded Report:

GRO by GC-FID (W)

Component	Method Code	QC 3063
Benzene by GC	TM245	103.5 79.13 : 118.84
Ethylbenzene by GC	TM245	101.0 79.54 : 115.99
m & p Xylene by GC	TM245	102.0 78.44 : 116.32
MTBE GC-FID	TM245	100.0 77.12 : 111.62
o Xylene by GC	TM245	99.5 76.85 : 120.29
QC	TM245	102.25 74.52 : 122.16
Toluene by GC	TM245	101.0 79.00 : 121.96

Hexavalent Chromium (s)

Component	Method Code	QC 3060
Hexavalent Chromium	TM151	96.0 84.37 : 115.69

Hexavalent Chromium (w)

Component	Method Code	QC 3056
Hexavalent Chromium	TM241	97.6 92.00 : 104.00

Mercury Dissolved

Component	Method Code	QC 3057	QC 3099
Mercury Dissolved (CVAF)	TM183	83.8 67.00 : 121.00	102.0 67.00 : 121.00

Metals in solid samples by OES

Component	Method Code	QC 3020
Aluminium	TM181	67.06 86.71 : 111.40
Antimony	TM181	91.6 88.08 : 103.45
Arsenic	TM181	97.86 97.25 : 111.11
Barium	TM181	87.16 92.16 : 108.55



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Superseded Report:

Metals in solid samples by OES

		QC 3020
Beryllium	TM181	96.28 92.84 : 106.84
Boron	TM181	92.78 94.63 : 116.77
Cadmium	TM181	99.43 94.89 : 110.27
Chromium	TM181	102.2 92.71 : 111.91
Cobalt	TM181	96.18 93.59 : 107.31
Copper	TM181	100.75 93.60 : 112.87
Iron	TM181	56.84 90.12 : 107.34
Lead	TM181	100.8 91.90 : 117.28
Manganese	TM181	99.18 92.06 : 109.30
Mercury	TM181	88.13 85.98 : 105.92
Molybdenum	TM181	97.35 93.26 : 108.95
Nickel	TM181	99.13 95.24 : 110.36
Phosphorus	TM181	100.63 76.63 : 137.59
Selenium	TM181	98.7 96.10 : 110.57
Strontium	TM181	95.44 90.23 : 110.07
Thallium	TM181	101.36 97.38 : 111.61
Tin	TM181	96.31 94.59 : 108.58
Titanium	TM181	85.04 83.87 : 112.04
Vanadium	TM181	94.01 89.61 : 107.72
Zinc	TM181	97.89 93.02 : 110.31

PAH by GCMS

Component	Method Code	QC 3039	QC 3042
Acenaphthene	TM218	92.0 78.16 : 109.52	91.0 78.16 : 109.52
Acenaphthylene	TM218	90.0 74.19 : 106.17	89.0 74.19 : 106.17
Anthracene	TM218	91.0 72.75 : 113.97	89.5 72.75 : 113.97
Benz(a)anthracene	TM218	92.0 65.56 : 114.18	92.5 65.56 : 114.18
Benzo(a)pyrene	TM218	87.0 62.73 : 115.79	91.5 62.73 : 115.79



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Location: Rochdale Station SR

Superseded Report:

PAH by GCMS

		QC 3039	QC 3042
Benzo(b)fluoranthene	TM218	86.0 61.35 : 114.05	91.0 61.35 : 114.05
Benzo(ghi)perylene	TM218	81.0 65.56 : 111.31	88.5 65.56 : 111.31
Benzo(k)fluoranthene	TM218	88.0 65.56 : 110.20	90.5 65.56 : 110.20
Chrysene	TM218	90.5 66.39 : 109.87	90.0 66.39 : 109.87
Dibenzo(ah)anthracene	TM218	79.5 61.54 : 114.29	87.0 61.54 : 114.29
Fluoranthene	TM218	97.0 65.43 : 120.27	92.5 65.43 : 120.27
Fluorene	TM218	91.0 75.92 : 109.56	89.5 75.92 : 109.56
Indeno(123cd)pyrene	TM218	83.5 59.14 : 115.15	84.0 59.14 : 115.15
Naphthalene	TM218	91.5 76.27 : 103.36	92.0 76.27 : 103.36
Phenanthrene	TM218	95.0 72.67 : 112.62	88.5 72.67 : 112.62
Pyrene	TM218	97.0 68.15 : 117.98	95.0 68.15 : 117.98

PAH in waters by GC-MS (diss.filt)

Component	Method Code	QC 3047
Acenaphthene (diss.filt)	TM178	96.4 94.40 : 118.40
Acenaphthylene (diss.filt)	TM178	96.4 89.20 : 120.40
Anthracene (diss.filt)	TM178	100.8 92.40 : 118.80
Benzo(a)anthracene (diss.filt)	TM178	98.0 85.60 : 116.80
Benzo(a)pyrene (diss.filt)	TM178	95.2 90.40 : 119.20
Benzo(b)fluoranthene (diss.filt)	TM178	96.0 82.00 : 120.40
Benzo(g,h,i)perylene (diss.filt)	TM178	97.2 92.40 : 118.80
Benzo(k)fluoranthene (diss.filt)	TM178	115.2 92.00 : 125.60
Chrysene (diss.filt)	TM178	105.2 90.00 : 118.80
Dibenzo(a,h)anthracene (diss.filt)	TM178	94.0 89.60 : 118.40
Fluoranthene (diss.filt)	TM178	100.4 90.40 : 121.60
Fluorene (diss.filt)	TM178	98.0 91.60 : 120.40
Indeno(1,2,3-cd)pyrene (diss.filt)	TM178	92.8 88.40 : 117.20
Naphthalene (diss.filt)	TM178	101.6 95.60 : 124.40



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Location: Rochdale Station SR

Superseded Report:

PAH in waters by GC-MS (diss.filt)

		QC 3047
Phenanthrene (diss.filt)	TM178	106.0 92.40 : 118.80
Pyrene (diss.filt)	TM178	104.4 88.00 : 124.00

pH

Component	Method Code	QC 3017	QC 3019
pH	TM133	102.4 98.80 : 104.41	102.0 98.80 : 104.41

pH Value

Component	Method Code	QC 3050
pH	TM256	99.47 98.26 : 103.07

pH Value of Filtered Water

Component	Method Code	QC 3025
EC QC	TM256	106.29 102.40 : 109.21
pH	TM256	99.6 98.26 : 103.07
TDS QC	TM256	98.56 96.82 : 102.03

Phenols by HPLC (S)

Component	Method Code	QC 3075	QC 3026
2,3,5 Trimethyl-Phenol by HPLC (S)	TM062 (S)	95.81 87.43 : 108.98	97.01 80.24 : 108.98
2-Isopropyl Phenol by HPLC (S)	TM062 (S)	89.82 81.44 : 102.99	92.22 74.25 : 110.18
Cresols by HPLC (S)	TM062 (S)	91.63 81.44 : 100.60	92.83 83.03 : 104.59
Phenol by HPLC (S)	TM062 (S)	89.82 80.24 : 101.80	92.22 81.44 : 102.99
Xylenols by HPLC (S)	TM062 (S)	93.21 83.63 : 103.99	94.41 84.63 : 104.99

Phenols by HPLC (W)



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Location: Rochdale Station SR

Superseded Report:

Phenols by HPLC (W)

Component	Method Code	QC 3005
2,3,5 Trimethyl-Phenol by HPLC (W)	TM259	100.0 77.41 : 127.55
2-Isopropyl Phenol by HPLC (W)	TM259	102.0 82.77 : 126.51
Cresols by HPLC (W)	TM259	100.0 76.60 : 126.28
Naphthol by HPLC (W)	TM259	98.0 76.00 : 112.00
Phenol by HPLC (W)	TM259	102.0 85.77 : 125.91
Xylenols by HPLC (W)	TM259	101.33 79.09 : 131.82

Total Organic Carbon

Component	Method Code	QC 3041
Total Organic Carbon	TM132	97.45 93.61 : 106.00

VOC MS (S)

Component	Method Code	QC 3034	QC 3043
1,1,1,2-tetrachloroethane	TM116	101.4 89.71 : 113.35	99.8 82.42 : 121.25
1,1,1-Trichloroethane	TM116	94.0 92.23 : 113.96	97.8 87.31 : 120.47
1,1,2,2-Tetrachloroethane	TM116	96.8 74.71 : 116.74	87.0 75.37 : 117.90
1,1,2-Trichloroethane	TM116	95.6 82.01 : 115.46	95.0 79.35 : 115.79
1,1-Dichloroethane	TM116	101.2 94.73 : 123.76	101.0 85.01 : 116.90
1,1-Dichloroethene	TM116	101.6 84.94 : 123.17	102.6 84.60 : 121.62
1,1-Dichloropropene	TM116	99.6 88.10 : 109.60	101.6 89.57 : 110.60
1,2,3-Trichlorobenzene	TM116	137.8 80.18 : 160.82	120.2 70.37 : 131.43
1,2,3-Trichloropropane	TM116	106.8 83.20 : 129.88	96.6 82.52 : 130.69
1,2,4-Trichlorobenzene	TM116	147.4 79.67 : 180.33	139.6 77.21 : 182.79
1,2,4-Trimethylbenzene	TM116	99.8 68.82 : 118.86	101.8 68.01 : 133.05
1,2-Dibromo-3-Chloropropane	TM116	69.2 47.88 : 92.12	63.6 52.42 : 99.96
1,2-Dibromoethane	TM116	101.8 82.71 : 127.60	95.2 83.19 : 123.20
1,2-Dichlorobenzene	TM116	90.4 77.67 : 104.35	85.0 69.69 : 109.59



CERTIFICATE OF ANALYSIS

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Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

VOC MS (S)

		QC 3034	QC 3043
1,2-Dichloroethane	TM116	97.2 85.38 : 121.58	95.6 81.24 : 121.87
1,2-Dichloropropane	TM116	99.0 89.19 : 110.91	99.6 84.57 : 115.28
1,3,5-Trimethylbenzene	TM116	101.2 65.01 : 121.14	102.8 71.10 : 131.75
1,3-Dichlorobenzene	TM116	105.4 86.58 : 116.11	99.0 78.36 : 122.99
1,3-Dichloropropane	TM116	97.6 84.08 : 118.88	98.4 80.44 : 121.21
1,4-Dichlorobenzene	TM116	106.6 87.76 : 118.06	95.0 80.86 : 122.63
2-Chlorotoluene	TM116	93.6 75.87 : 101.44	88.4 72.44 : 111.78
4-Chlorotoluene	TM116	90.0 72.14 : 100.00	85.4 69.42 : 106.40
Benzene	TM116	109.6 99.80 : 118.22	110.4 93.51 : 122.00
Bromobenzene	TM116	98.2 88.03 : 111.60	91.8 83.00 : 116.37
Bromochloromethane	TM116	100.2 82.77 : 123.54	97.0 78.40 : 125.08
Bromodichloromethane	TM116	86.8 82.07 : 108.53	87.8 81.88 : 113.17
Bromoform	TM116	104.0 71.29 : 128.60	92.0 79.44 : 125.23
Bromomethane	TM116	105.6 87.73 : 135.58	100.2 76.38 : 123.20
Carbon Disulphide	TM116	112.8 91.85 : 128.47	110.8 74.35 : 133.03
Carbontetrachloride	TM116	95.0 86.40 : 110.26	97.6 83.14 : 111.51
Chlorobenzene	TM116	110.4 93.35 : 119.43	101.8 86.98 : 120.02
Chloroethane	TM116	105.4 87.72 : 134.34	104.2 78.03 : 127.56
Chloroform	TM116	100.0 90.68 : 119.59	98.4 87.97 : 112.70
Chloromethane	TM116	105.8 64.80 : 145.14	101.0 65.86 : 140.09
Cis-1,2-Dichloroethene	TM116	106.6 91.66 : 116.68	104.6 85.55 : 122.49
Cis-1,3-Dichloropropene	TM116	77.6 52.37 : 102.48	79.0 67.76 : 110.88
Dibromochloromethane	TM116	99.6 81.56 : 124.55	92.8 80.07 : 119.00
Dibromomethane	TM116	93.8 80.06 : 114.10	89.6 73.08 : 115.53
Dichlorodifluoromethane	TM116	101.8 50.43 : 155.04	93.6 40.98 : 156.53
Dichloromethane	TM116	103.2 83.28 : 130.87	101.4 82.85 : 116.54
Ethylbenzene	TM116	96.0 88.22 : 113.27	95.0 82.76 : 112.62



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

VOC MS (S)

		QC 3034	QC 3043
Hexachlorobutadiene	TM116	96.4 31.71 : 108.29	98.6 29.43 : 136.03
Isopropylbenzene	TM116	86.0 62.50 : 108.30	90.6 68.49 : 115.93
Naphthalene	TM116	114.4 87.47 : 124.57	107.6 81.17 : 124.69
o-Xylene	TM116	86.8 72.31 : 104.09	86.6 73.40 : 104.62
p/m-Xylene	TM116	92.8 82.78 : 107.35	90.4 69.56 : 111.53
Propylbenzene	TM116	79.8 59.09 : 102.69	83.4 59.05 : 107.61
Sec-Butylbenzene	TM116	75.0 39.33 : 100.67	87.2 41.58 : 128.22
Styrene	TM116	87.0 58.23 : 111.64	84.6 58.68 : 109.56
Tert-amyl methyl ether	TM116	74.2 70.78 : 110.91	90.8 72.28 : 112.01
Tert-butyl methyl ether	TM116	80.8 66.02 : 128.52	94.6 73.84 : 122.52
Tert-Butylbenzene	TM116	87.0 48.39 : 106.82	95.2 55.36 : 134.02
Tetrachloroethene	TM116	106.6 83.85 : 125.62	102.6 78.30 : 120.12
Toluene	TM116	98.8 92.18 : 109.09	100.6 85.49 : 109.77
Trans-1,2-Dichloroethene	TM116	102.0 91.02 : 126.69	101.4 90.27 : 112.30
Trichloroethene	TM116	93.0 90.38 : 106.98	94.0 84.12 : 110.17
Trichlorofluoromethane	TM116	105.0 96.41 : 128.97	104.2 93.37 : 134.79
Vinyl Chloride	TM116	105.2 69.29 : 143.01	102.2 69.81 : 134.36

VOC MS (W)

Component	Method Code	QC 3054
1,1,1,2-Tetrachloroethane	TM208	107.0 84.45 : 114.24
1,1,1-Trichloroethane	TM208	104.0 84.60 : 114.45
1,1,2,2-Tetrachloroethane	TM208	109.5 83.06 : 123.56
1,1,2-Trichloroethane	TM208	104.5 83.80 : 119.17
1,1-Dichloroethane	TM208	104.0 86.24 : 116.66
1,1-Dichloroethene	TM208	100.0 83.27 : 118.43
1,1-Dichloropropene	TM208	102.0 84.10 : 115.18
1,2,3-Trichlorobenzene	TM208	90.0 78.15 : 114.21



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

VOC MS (W)

		QC 3054
1,2,3-Trichloropropane	TM208	109.0 79.47 : 125.70
1,2,4-Trichlorobenzene	TM208	81.0 76.00 : 110.02
1,2,4-Trimethylbenzene	TM208	100.0 81.19 : 109.72
1,2-Dibromoethane	TM208	100.0 84.64 : 119.02
1,2-Dichlorobenzene	TM208	105.5 86.14 : 116.68
1,2-Dichloroethane	TM208	102.5 85.99 : 116.35
1,2-Dichloropropane	TM208	103.5 85.63 : 118.27
1,3,5-Trimethylbenzene	TM208	101.0 81.76 : 109.54
1,3-Dichlorobenzene	TM208	104.0 82.32 : 114.57
1,3-Dichloropropane	TM208	102.0 85.60 : 117.07
1,4-Dichlorobenzene	TM208	105.0 82.73 : 116.45
2-Chlorotoluene	TM208	103.5 83.13 : 112.47
4-Chlorotoluene	TM208	105.0 83.19 : 112.56
4-Isopropyltoluene	TM208	97.5 81.78 : 115.29
Benzene	TM208	104.5 85.41 : 115.56
Bromobenzene	TM208	107.0 85.65 : 116.46
Bromochloromethane	TM208	102.5 80.14 : 123.22
Bromodichloromethane	TM208	106.0 83.78 : 124.25
Bromoform	TM208	109.5 60.69 : 155.10
Bromomethane	TM208	100.0 82.59 : 111.75
Carbon Disulphide	TM208	102.0 83.64 : 117.96
Carbontetrachloride	TM208	108.0 85.14 : 115.20
Chlorobenzene	TM208	108.0 84.32 : 114.08
Chloroethane	TM208	101.5 82.10 : 122.33
Chloroform	TM208	102.0 85.90 : 116.23
Chloromethane	TM208	105.5 81.84 : 110.73
Cis-1,2-Dichloroethene	TM208	100.0 86.19 : 117.21



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

VOC MS (W)

		QC 3054
Cis-1,3-Dichloropropene	TM208	92.5 64.89 : 121.92
Dibromochloromethane	TM208	106.0 79.16 : 126.02
Dibromomethane	TM208	103.5 81.40 : 122.41
Dichloromethane	TM208	102.5 86.56 : 117.10
Ethylbenzene	TM208	102.5 82.07 : 111.05
Hexachlorobutadiene	TM208	85.5 76.11 : 107.70
Isopropylbenzene	TM208	99.5 79.97 : 110.18
Naphthalene	TM208	86.0 76.41 : 116.13
n-Butylbenzene	TM208	96.0 80.74 : 108.73
o-Xylene	TM208	102.5 81.09 : 109.71
p/m-Xylene	TM208	205.0 80.88 : 109.43
Propylbenzene	TM208	100.5 80.74 : 108.73
Sec-Butylbenzene	TM208	101.0 81.15 : 116.37
Styrene	TM208	102.0 82.69 : 111.40
Tert-amyl methyl ether	TM208	91.5 73.31 : 118.61
Tert-butyl methyl ether	TM208	91.5 82.45 : 116.41
Tert-Butylbenzene	TM208	100.0 80.77 : 109.63
Tetrachloroethene	TM208	101.0 83.00 : 112.28
Toluene	TM208	101.0 83.93 : 113.57
Trans-1,2-Dichloroethene	TM208	105.5 84.27 : 118.59
Trans-1,3-Dichloropropene	TM208	90.0 64.10 : 125.81
Trichloroethene	TM208	103.0 84.54 : 114.33
Trichlorofluoromethane	TM208	106.0 84.68 : 121.37
Vinyl Chloride	TM208	101.5 80.59 : 120.31

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

The figure detailed is the percentage recovery result for the AQC.

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

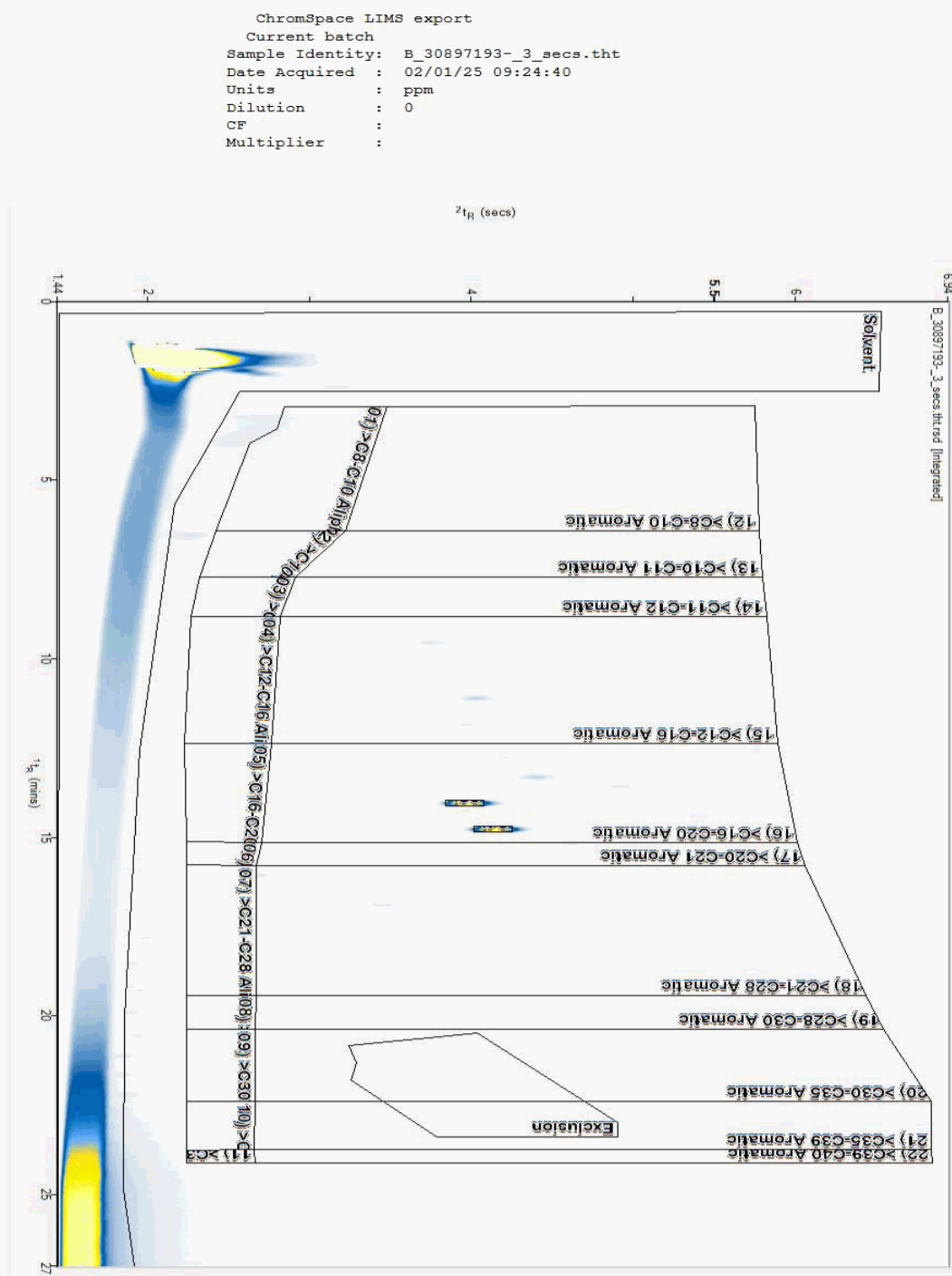
Superseded Report:

Chromatogram

Analysis: EPH and CWG (Filtered) by FID

Sample No : 30897193
Sample ID : C10

Depth : 0.40 - 0.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

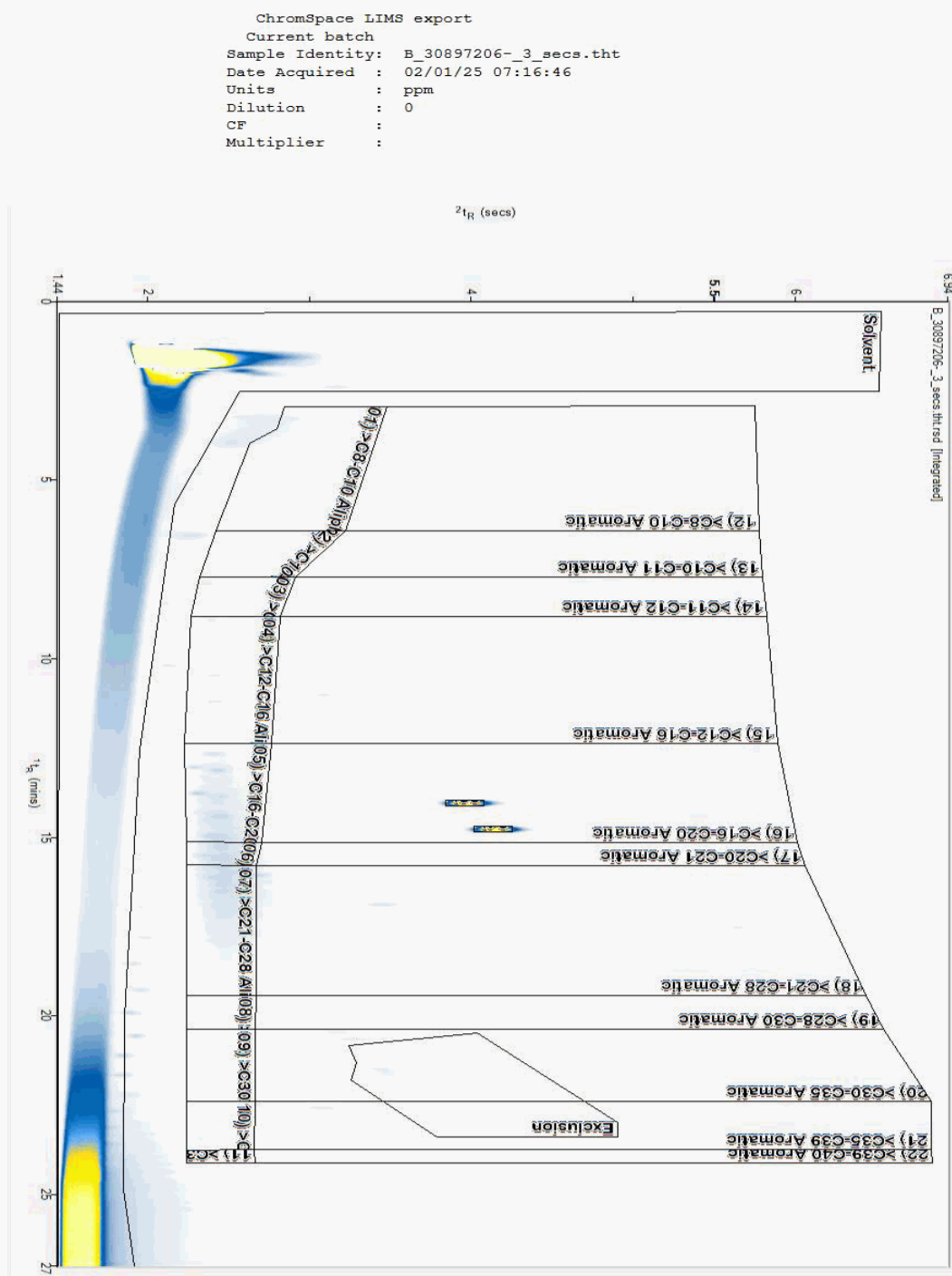
Superseded Report:

Chromatogram

Analysis: EPH and CWG (Filtered) by FID

Sample No : 30897206
Sample ID : C24

Depth : 0.50 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

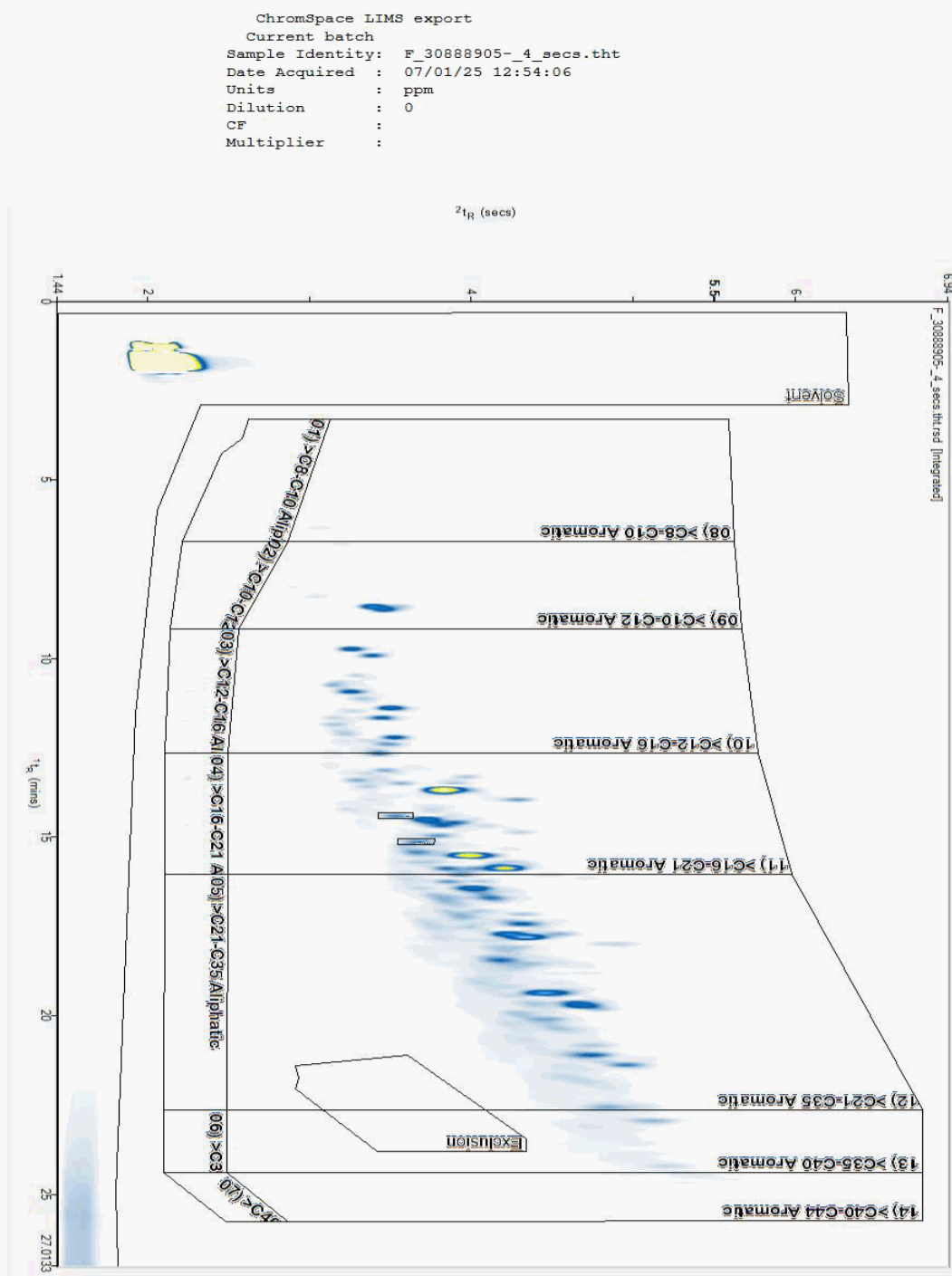
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30888905
Sample ID : C10

Depth : 0.40 - 0.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

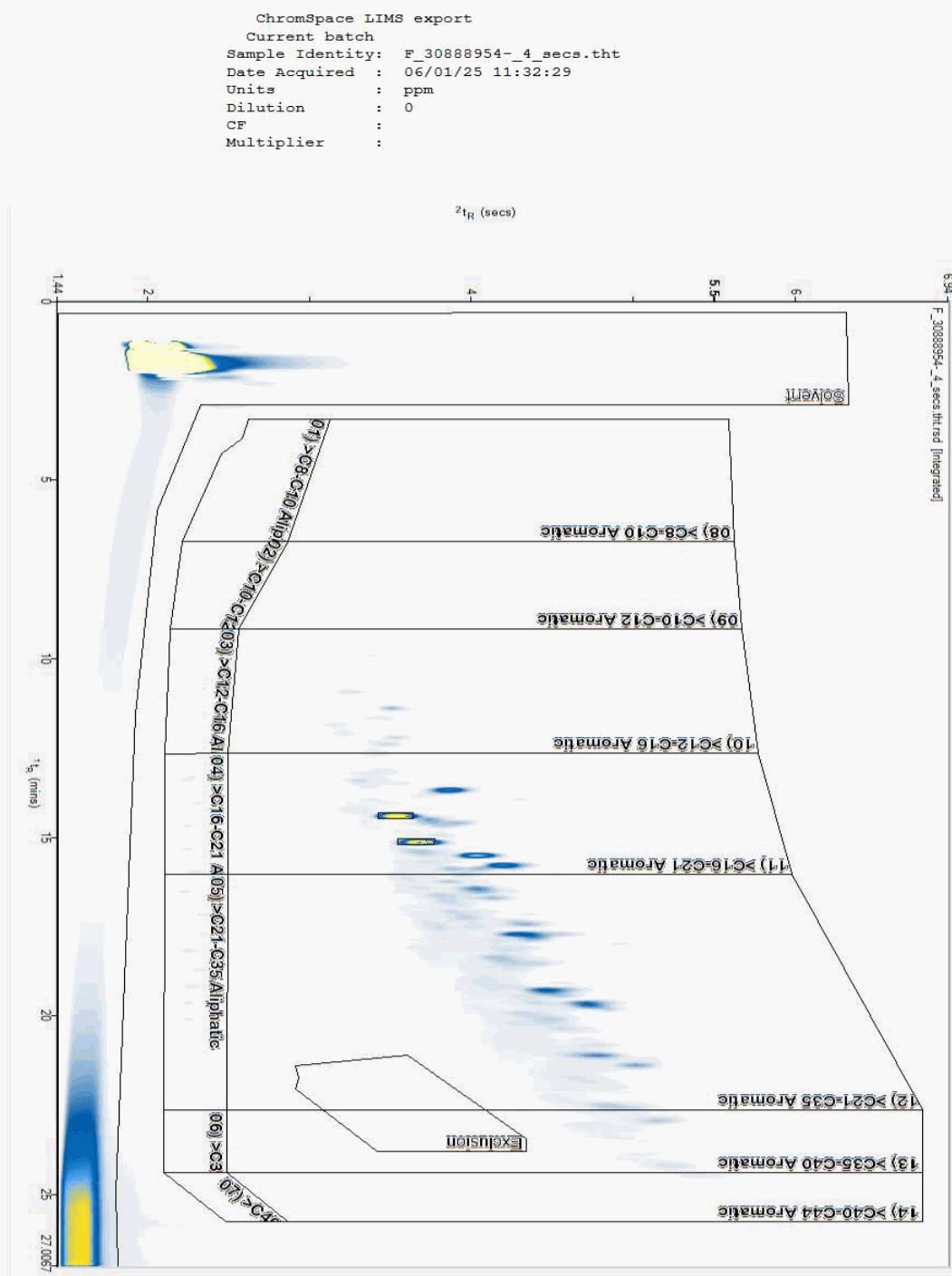
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30888954
Sample ID : C24

Depth : 0.50 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

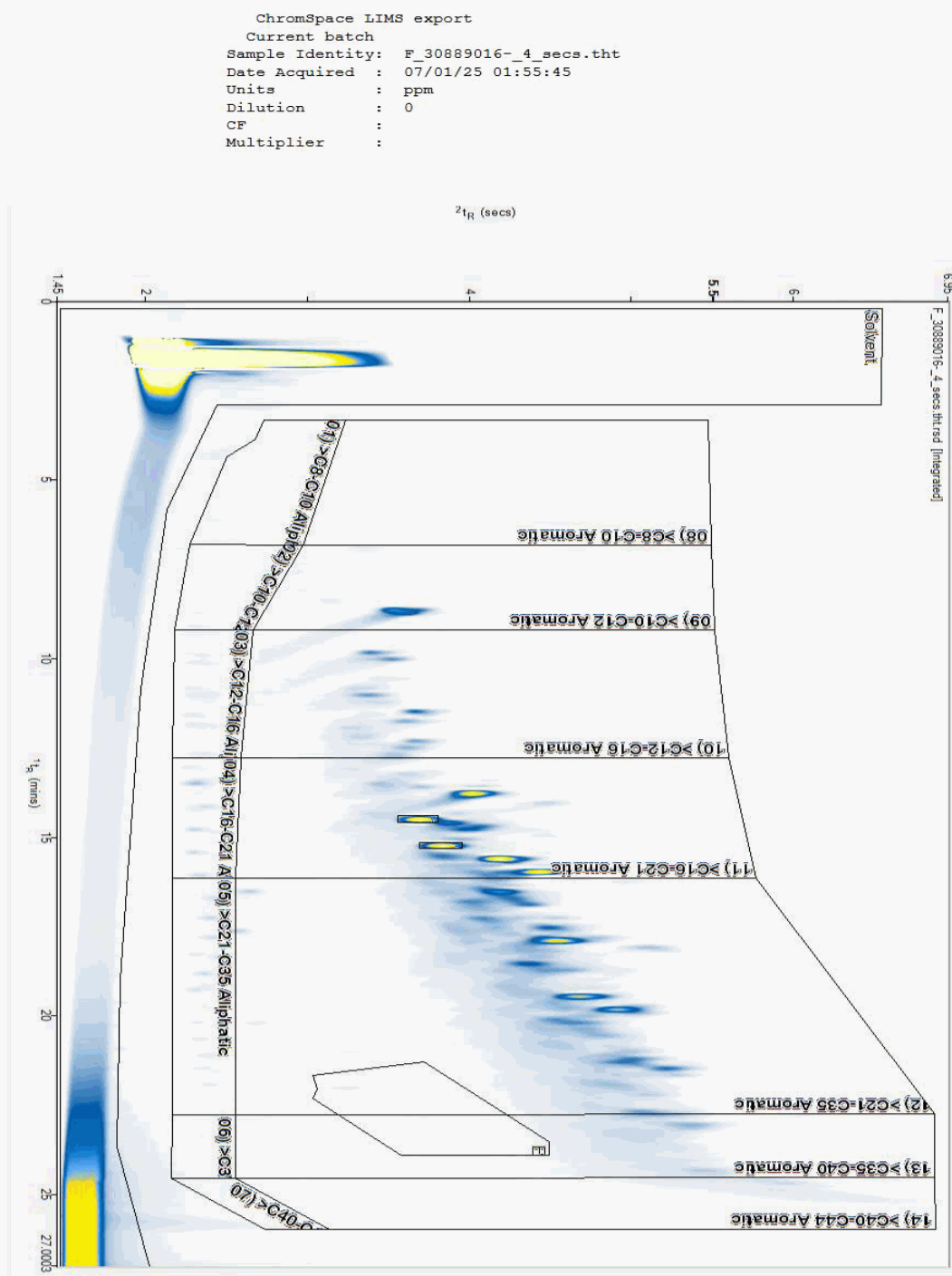
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30889016
Sample ID : C10

Depth : 0.60 - 0.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

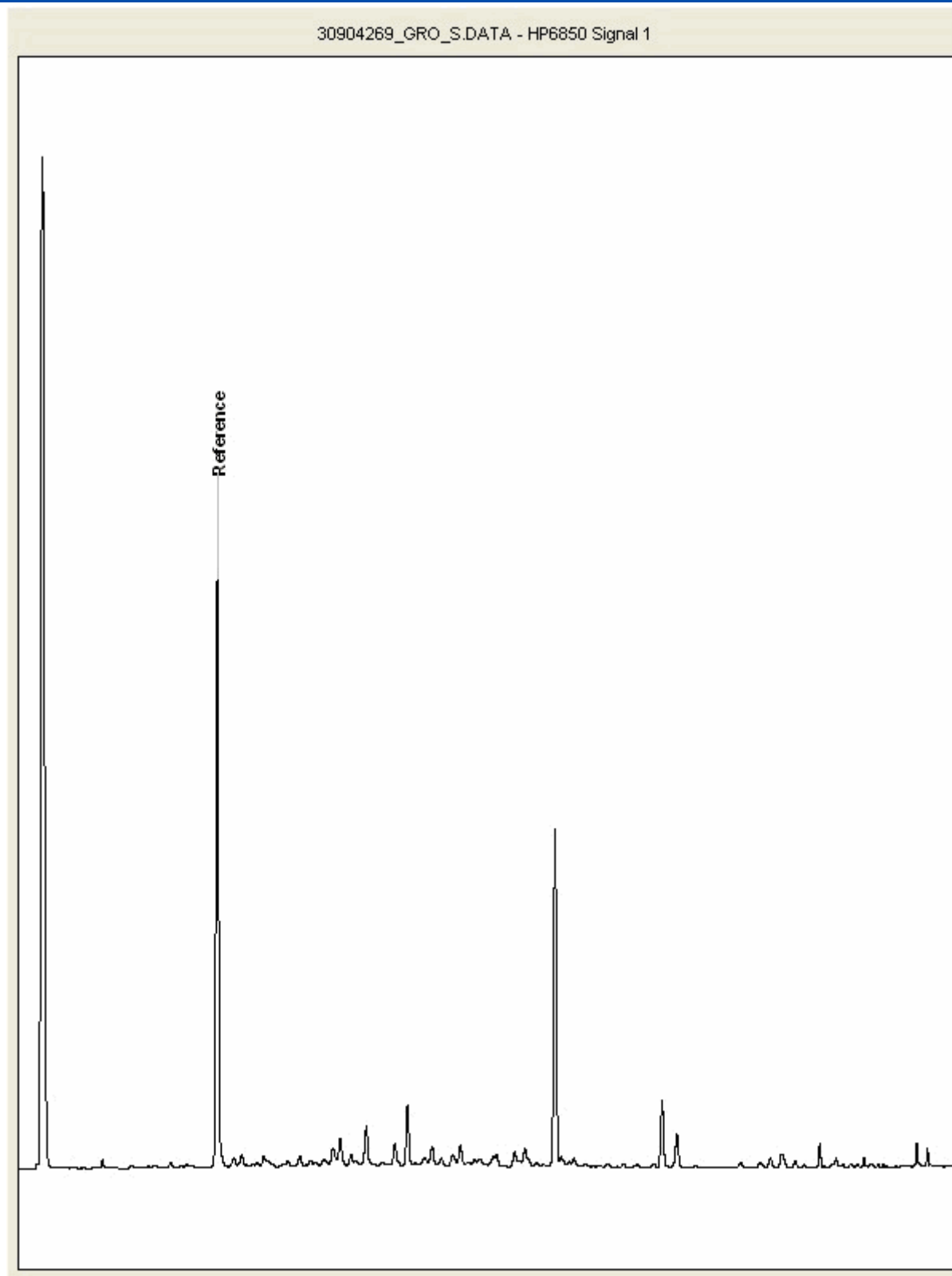
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30904269
Sample ID : C10

Depth : 0.40 - 0.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

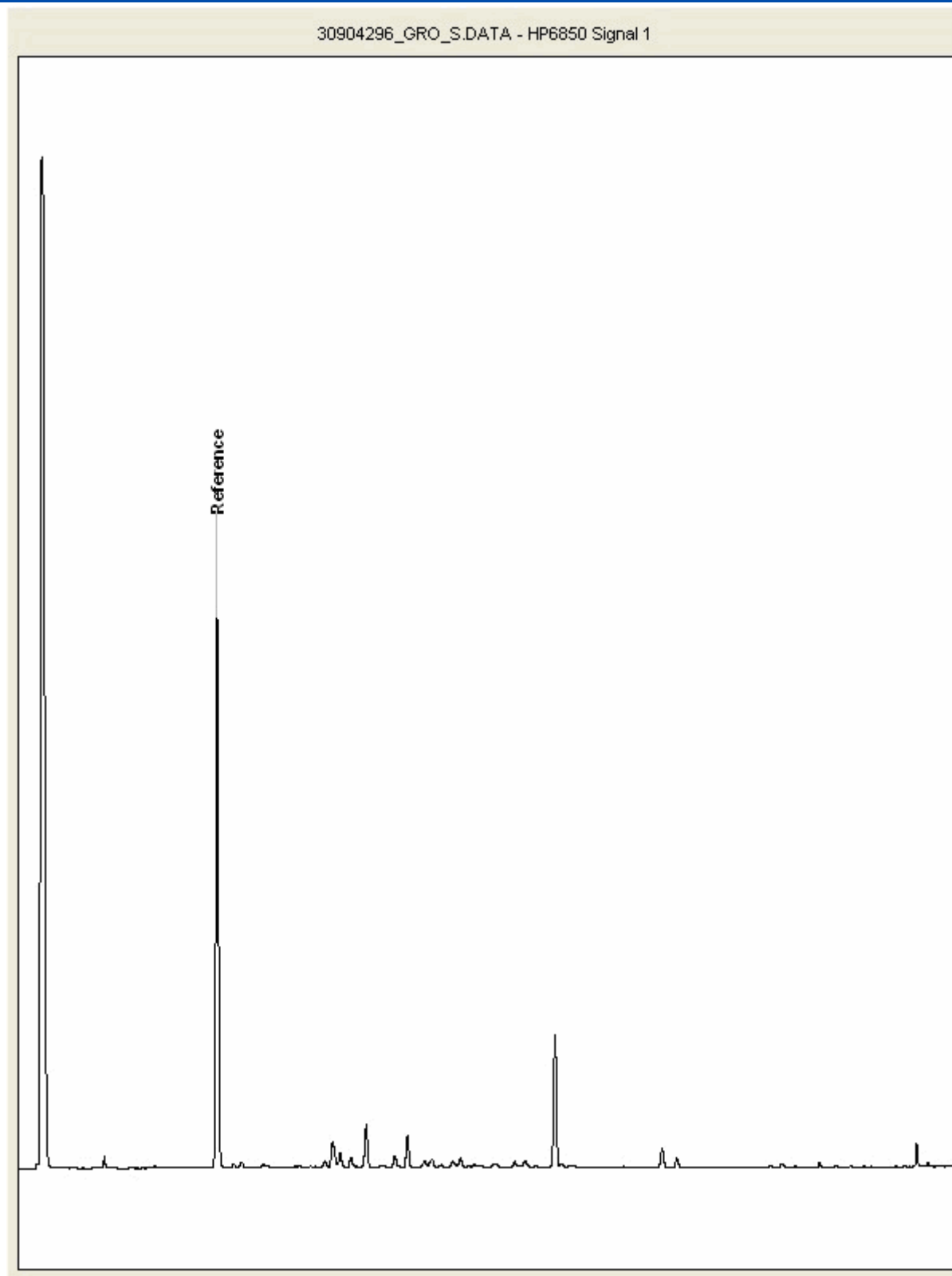
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30904296
Sample ID : C10

Depth : 0.60 - 0.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

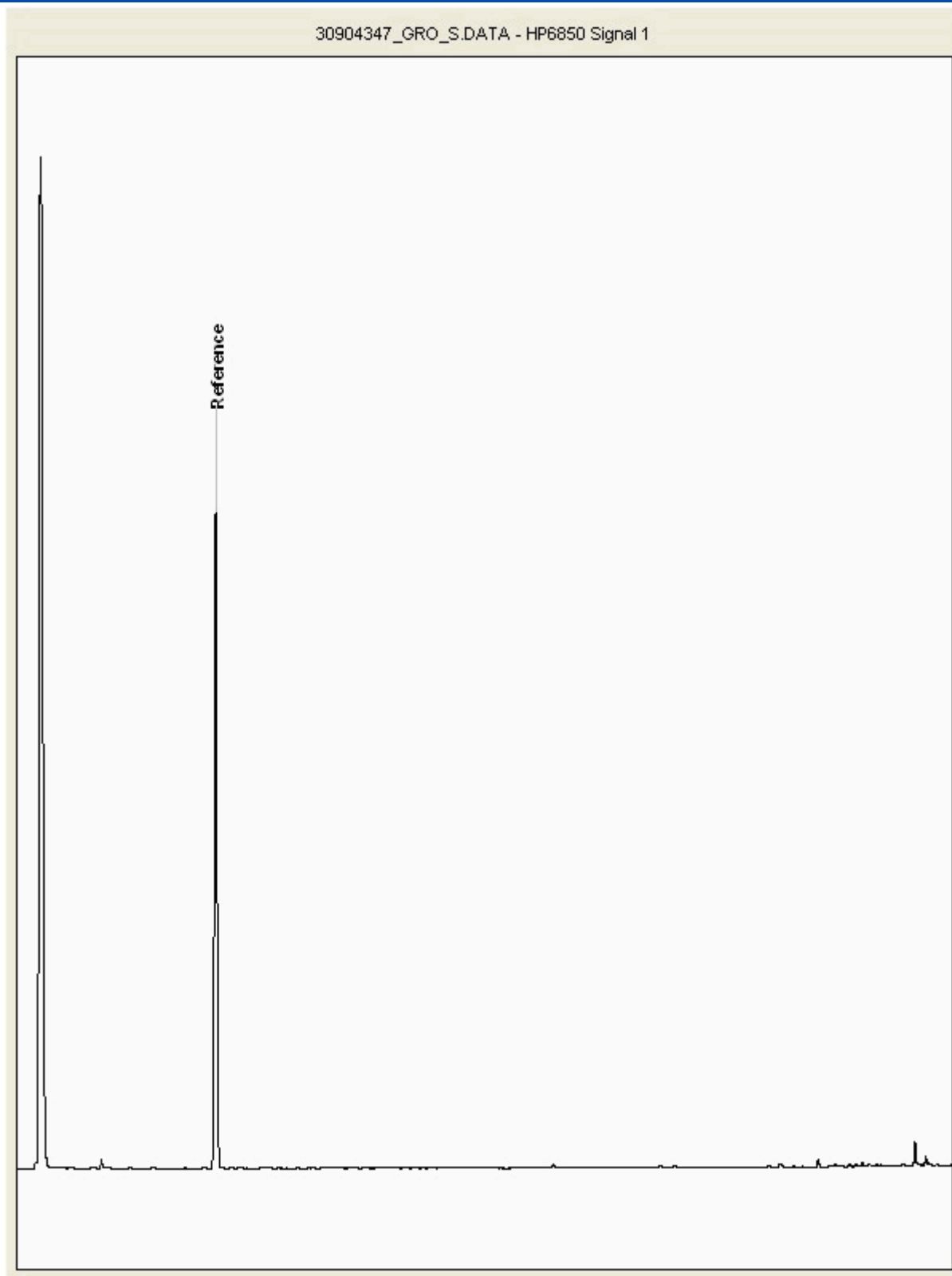
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30904347
Sample ID : C24

Depth : 0.50 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

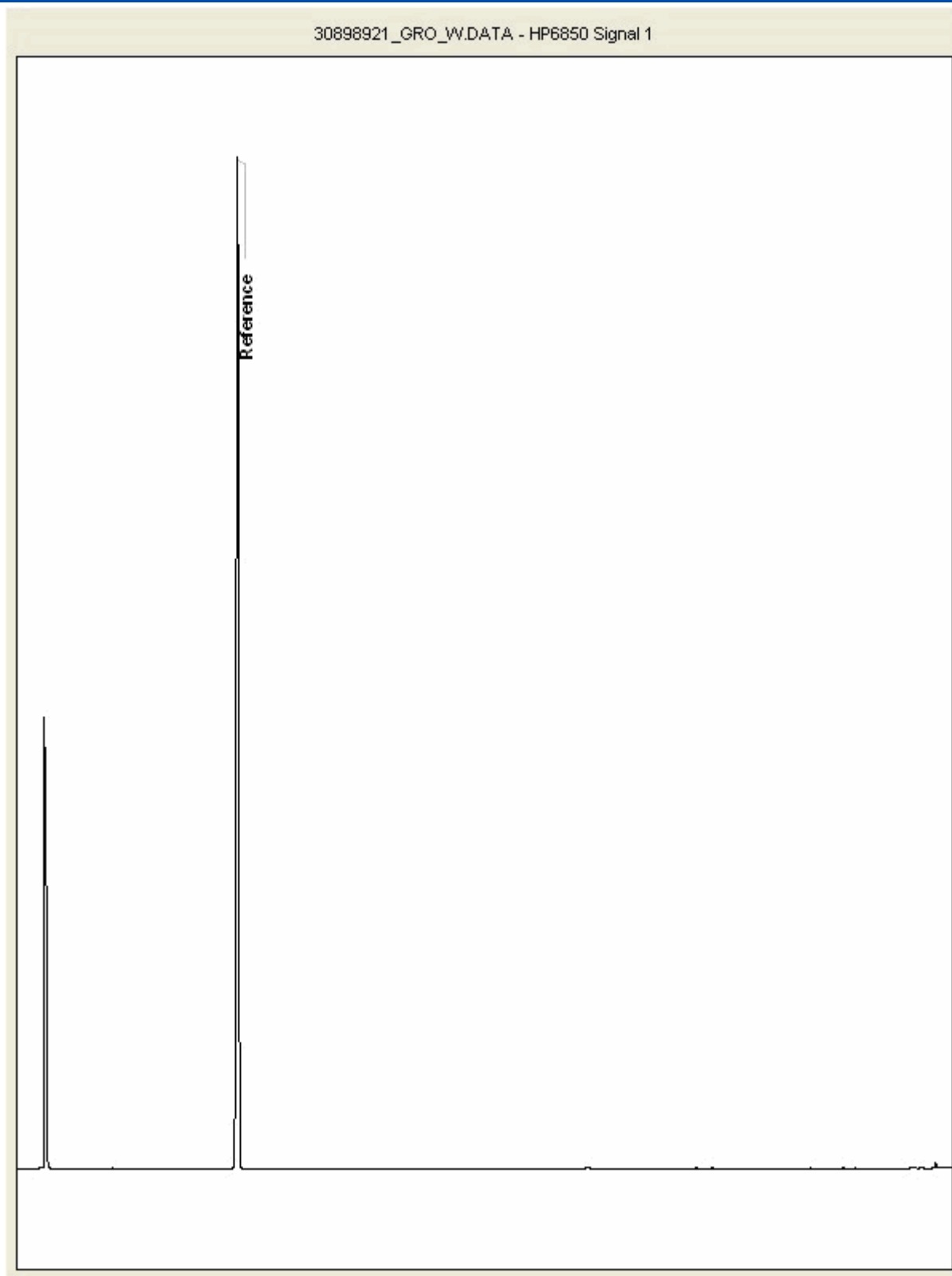
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 30898921
Sample ID : C10

Depth : 0.40 - 0.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-63
Client Ref.: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

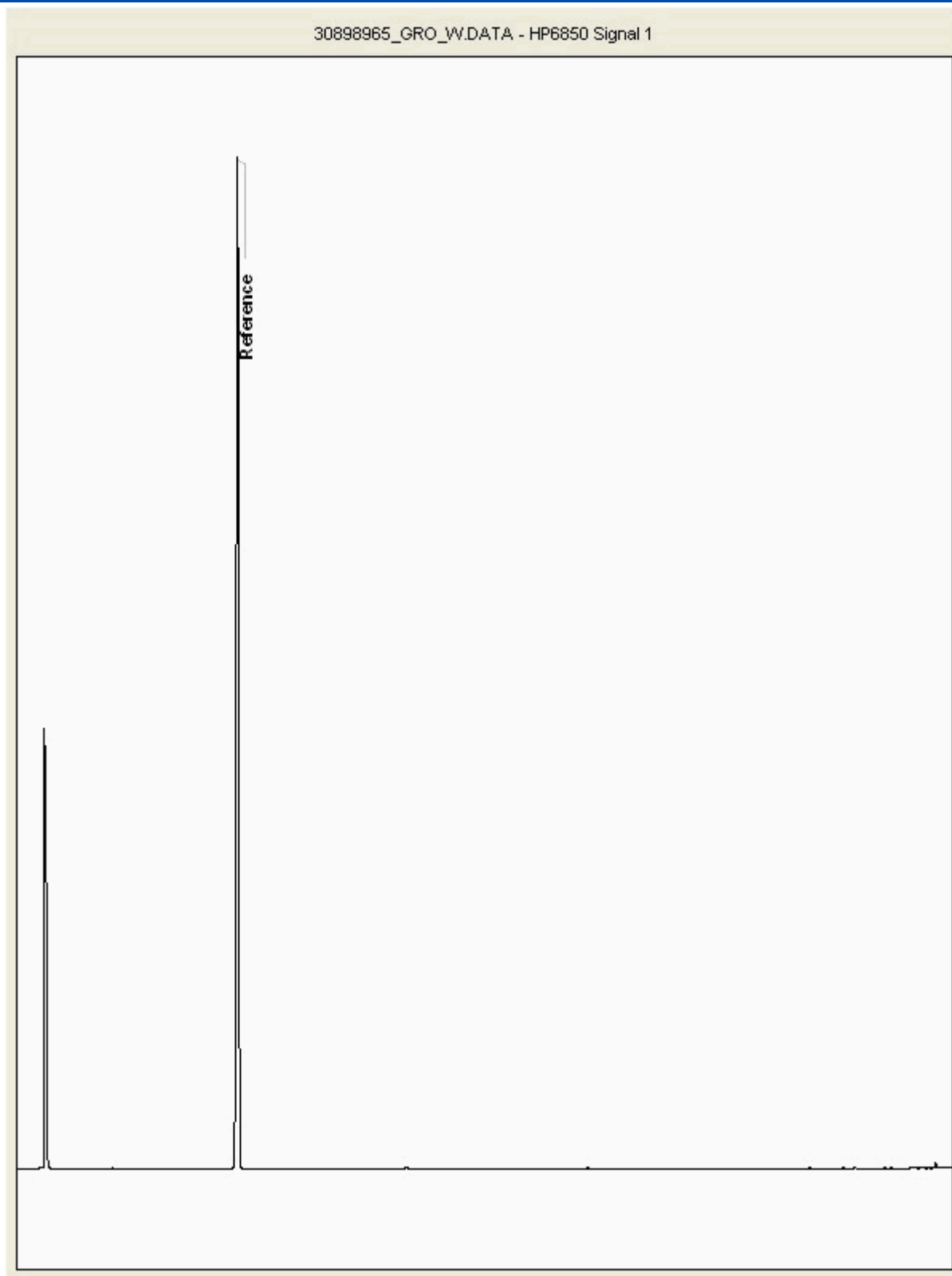
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 30898965
Sample ID : C24

Depth : 0.50 - 0.50





CERTIFICATE OF ANALYSIS

SDG: 241221-63
Client Ref: 30220231-3

Report Number: 752643
Location: Rochdale Station SR

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 15 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.



Units 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

ARCADIS UK Ltd
Suite 1A
4 Piccadilly Place
Manchester
M1 3BN

Attention: Ryan Lindsay

CERTIFICATE OF ANALYSIS

Date of report Generation: 25 February 2025
Customer: ARCADIS UK Ltd
Sample Delivery Group (SDG): 241221-65
Your Reference: 30220231-3
Location: Rochdale Station SR
Report No: 757232
Order Number: 30220231-3.1

This report has been revised and directly supersedes 757231 in its entirety.

We received 3 samples on Saturday December 21, 2024 and 3 of these samples were scheduled for analysis which was completed on Tuesday February 25, 2025. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Justin Keeton
Business Unit Leader - Land



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CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30885494	C04		0.30 - 0.30	20/12/2024
30885495	C04		0.80 - 0.80	20/12/2024
30885493	C06		0.60 - 0.60	20/12/2024

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

Results Legend Test No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)		30885494		30885495		30885493
	Customer Sample Reference		C04		C04		C06
	AGS Reference						
	Depth (m)		0.30 - 0.30		0.80 - 0.80		0.60 - 0.60
	Container		250g Amber Jar (ALE210) 1kg TUB with Handle		250g Amber Jar (ALE210) 1kg TUB with Handle		250g Amber Jar (ALE210) 1kg TUB with Handle
	Sample Type		S		S		S
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3					
CEN Readings	All	NDPs: 0 Tests: 2					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2					
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 2					
EPH and CWG (Filtered) by FID	All	NDPs: 0 Tests: 2					
EPH CWG GC (S)	All	NDPs: 0 Tests: 3					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					
GRO by GC-FID (W)	All	NDPs: 0 Tests: 2					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3					
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2					
Mercury Dissolved	All	NDPs: 0 Tests: 2					
Metals in solid samples by OES	All	NDPs: 0 Tests: 3					
PAH by GCMS	All	NDPs: 0 Tests: 3					
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 2					



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)		30885493	30885495	30885494
	Customer Sample Reference		C06	C04	C04
	AGS Reference				
	Depth (m)		0.60 - 0.60	0.80 - 0.80	0.30 - 0.30
	Container		60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE215)
	Sample Type		S	S	S
			S	S	S
pH	All	NDPs: 0 Tests: 3	X	X	X
pH Value	All	NDPs: 0 Tests: 2		X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 2		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	X	X	X
Phenols by HPLC (W)	All	NDPs: 0 Tests: 2		X	
Sample description	All	NDPs: 0 Tests: 3	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 3	X	X	X
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 2		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 3	X	X	X
VOC MS (S)	All	NDPs: 0 Tests: 3		X	
VOC MS (W)	All	NDPs: 0 Tests: 2		X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
30885494	C04	0.30 - 0.30	Light Brown	Loamy Sand	Stones	None
30885495	C04	0.80 - 0.80	Dark Brown	Sandy Loam	Vegetation	None
30885493	C06	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	Tar

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

PAH by GCMS

[illegible]

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

TPH CWG (S)

[illegible]

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

VOC MS (S)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

Asbestos Identification - Solid Samples

Results Legend		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
#	ISO17025 accredited.										
M	mCERTS accredited.										
*	Subcontracted test.										
1-5$ Sample deviation (see appendix)											
Cust. Sample Ref.	C04 0.30 - 0.30 SOLID	02/01/2025	Alex Horner	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)											
Sample Type	20/12/2024 00:00:00										
Date Sampled	21/12/2024 05:00:00										
Date Received	241221-65										
SDG	30885494										
Original Sample Method Number	TM048										
Cust. Sample Ref.	C04 0.80 - 0.80 SOLID	03/01/25	Ashia Jackson	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)											
Sample Type	20/12/2024 00:00:00										
Date Sampled	21/12/2024 05:00:00										
Date Received	241221-65										
SDG	30885495										
Original Sample Method Number	TM048										
Cust. Sample Ref.	C06 0.60 - 0.60 SOLID	02/01/25	Danielle Duncan	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)											
Sample Type	20/12/2024 00:00:00										
Date Sampled	21/12/2024 05:00:00										
Date Received	241221-65										
SDG	30885493										
Original Sample Method Number	TM048										



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.112

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Rochdale Station SR

Natural Moisture Content (%) 30.2

Dry Matter Content (%) 76.8

Case

SDG 241221-65

Lab Sample Number(s) 30885493

Sampled Date 20-Dec-2024

Customer Sample Ref. C06

Depth (m) 0.60 - 0.60

Eluate Analysis

C₂ Concⁿ in 10:1 eluate (mg/l)A₂ 10:1 concⁿ leached (mg/kg)

	Result	Limit of Detection	Result	Limit of Detection			
Chromium, Hexavalent	<0.03	<0.03	<0.3	<0.3	-	-	-
Cyanide, Free	<0.05	<0.05	<0.5	<0.5	-	-	-
Carbon, Organic (diss.filt)	9.05	<3	90.5	<30	-	-	-
Mercury (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic (diss.filt)	0.0295	<0.0005	0.295	<0.005	-	-	-
Boron (diss.filt)	0.0131	<0.01	0.131	<0.1	-	-	-
Cadmium (diss.filt)	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Calcium (Dis.Filt)	6.29	<0.2	62.9	<2	-	-	-
Chromium (diss.filt)	0.00102	<0.001	0.0102	<0.01	-	-	-
Copper (diss.filt)	0.014	<0.0003	0.14	<0.003	-	-	-
Lead (diss.filt)	0.021	<0.0002	0.21	<0.002	-	-	-
Nickel (diss.filt)	0.00153	<0.0004	0.0153	<0.004	-	-	-
Selenium (diss.filt)	0.00166	<0.001	0.0166	<0.01	-	-	-
Zinc (diss.filt)	0.00368	<0.001	0.0368	<0.01	-	-	-
Acenaphthene (diss.filt)	0.000758	<0.000005	0.00758	<0.00005	-	-	-
Acenaphthylene (diss.filt)	0.00000593	<0.000005	0.0000593	<0.00005	-	-	-
Anthracene (diss.filt)	0.000292	<0.000005	0.00292	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000536	<0.000005	0.00536	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000946	<0.000002	0.00946	<0.00002	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00124	<0.000005	0.0124	<0.00005	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.00087	<0.000005	0.0087	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000479	<0.000005	0.00479	<0.00005	-	-	-
Chrysene (diss.filt)	0.000694	<0.000005	0.00694	<0.00005	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.00013	<0.000005	0.0013	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00123	<0.000005	0.0123	<0.00005	-	-	-
Fluorene (diss.filt)	0.000449	<0.000005	0.00449	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000712	<0.000005	0.00712	<0.00005	-	-	-
Naphthalene (diss.filt)	0.00134	<0.00001	0.0134	<0.0001	-	-	-
PAH Sum of EPA 16 detected (Diss.filt)	0.0125	<0.000082	0.125	<0.00082	-	-	-
Phenanthrene (diss.filt)	0.00172	<0.000005	0.0172	<0.00005	-	-	-
Pyrene (diss.filt)	0.00114	<0.000005	0.0114	<0.00005	-	-	-
Cresols	<0.006	<0.006	<0.06	<0.06	-	-	-
Phenol	<0.002	<0.002	<0.02	<0.02	-	-	-
Phenols, Total Detected monohydric	<0.016	<0.016	<0.16	<0.16	-	-	-
Xylenols	<0.008	<0.008	<0.08	<0.08	-	-	-

Leach Test Information

Date Prepared 23-Dec-2024
pH (pH Units) 9.51
Conductivity (µS/cm) 163
Volume Leachant (Litres) 0.873

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C). Prepared leachates do not hold ISO17025 accreditation.

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CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.112

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Rochdale Station SR

Natural Moisture Content (%)

30.2

Dry Matter Content (%)

76.8

Case

SDG 241221-65

Lab Sample Number(s) 30885493

Sampled Date 20-Dec-2024

Customer Sample Ref. C06

Depth (m) 0.60 - 0.60

Eluate Analysis

C₂ Concⁿ in 10:1 eluate (mg/l) **A₂** 10:1 concⁿ leached (mg/kg)

Result

Limit of Detection

Result

Limit of Detection

TPH CWG (W)

GRO Surrogate % recovery**	-	<0	-	<0	-	-	-
GRO >C5-C12	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics >C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC5-EC7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC7-EC8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC8-EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics & Aromatics >C5-35 (diss. filt)	<0.01	<0.01	<0.1	<0.1	-	-	-

VOC MS (W)

Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
m,p-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Sum of BTEX	<0.005	<0.005	<0.05	<0.05	-	-	-
Methyl tertiary butyl ether (MTBE)	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Sum of detected Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	23-Dec-2024
pH (pH Units)	9.51
Conductivity (µS/cm)	163
Volume Leachant (Litres)	0.873

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C). Prepared leachates do not hold ISO17025 accreditation.

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CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.129

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Rochdale Station SR

Natural Moisture Content (%) 47.8

Dry Matter Content (%) 67.7

Case

SDG 241221-65

Lab Sample Number(s) 30885495

Sampled Date 20-Dec-2024

Customer Sample Ref. C04

Depth (m) 0.80 - 0.80

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
Chromium, Hexavalent	<0.03	<0.03	<0.3	<0.3	-	-	-
Cyanide, Free	<0.05	<0.05	<0.5	<0.5	-	-	-
Carbon, Organic (diss.filt)	33.9	<3	339	<30	-	-	-
Mercury (diss.filt)	0.0000139	<0.00001	0.000139	<0.0001	-	-	-
Arsenic (diss.filt)	0.00397	<0.0005	0.0397	<0.005	-	-	-
Boron (diss.filt)	0.385	<0.01	3.85	<0.1	-	-	-
Cadmium (diss.filt)	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Calcium (Dis.Filt)	26.9	<0.2	269	<2	-	-	-
Chromium (diss.filt)	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper (diss.filt)	0.00951	<0.0003	0.0951	<0.003	-	-	-
Lead (diss.filt)	0.00204	<0.0002	0.0204	<0.002	-	-	-
Nickel (diss.filt)	0.00211	<0.0004	0.0211	<0.004	-	-	-
Selenium (diss.filt)	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc (diss.filt)	0.00438	<0.001	0.0438	<0.01	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Naphthalene (diss.filt)	0.0000171	<0.00001	0.000171	<0.0001	-	-	-
PAH Sum of EPA 16 detected (Diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Phenanthrene (diss.filt)	0.00000579	<0.000005	0.0000579	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cresols	<0.006	<0.006	<0.06	<0.06	-	-	-
Phenol	<0.002	<0.002	<0.02	<0.02	-	-	-
Phenols, Total Detected monohydric	<0.016	<0.016	<0.16	<0.16	-	-	-
Xylenols	<0.008	<0.008	<0.08	<0.08	-	-	-

Leach Test Information

Date Prepared	23-Dec-2024
pH (pH Units)	8.07
Conductivity (µS/cm)	322
Volume Leachant (Litres)	0.858

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C). Prepared leachates do not hold ISO17025 accreditation.

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11:20:20 25/02/2025



CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3Report Number: 757232
Location: Rochdale Station SR

Superseded Report: 757231

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.129

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Rochdale Station SR

Natural Moisture Content (%) 47.8

Dry Matter Content (%) 67.7

Case

SDG 241221-65

Lab Sample Number(s) 30885495

Sampled Date 20-Dec-2024

Customer Sample Ref. C04

Depth (m) 0.80 - 0.80

Eluate Analysis

C₂ Concⁿ in 10:1 eluate (mg/l) **A₂** 10:1 concⁿ leached (mg/kg)

Result

Limit of Detection

Result

Limit of Detection

TPH CWG (W)

GRO Surrogate % recovery**	-	<0	-	<0	-	-	-
GRO >C5-C12	0.227	<0.05	2.27	<0.5	-	-	-
Aliphatics >C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.018	<0.01	0.18	<0.1	-	-	-
Aliphatics >C8-C10	0.056	<0.01	0.56	<0.1	-	-	-
Aliphatics >C10-C12	0.067	<0.01	0.67	<0.1	-	-	-
Aliphatics >C12-C16 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC5-EC7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC7-EC8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC8-EC10	0.039	<0.01	0.39	<0.1	-	-	-
Aromatics >EC10-EC12	0.045	<0.01	0.45	<0.1	-	-	-
Aromatics >EC12-EC16 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35 (diss.filt)	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics & Aromatics >C5-35 (diss. filt)	0.228	<0.01	2.28	<0.1	-	-	-

VOC MS (W)

Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
m,p-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Sum of BTEX	<0.005	<0.005	<0.05	<0.05	-	-	-
Methyl tertiary butyl ether (MTBE)	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Sum of detected Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	23-Dec-2024
pH (pH Units)	8.07
Conductivity (µS/cm)	322
Volume Leachant (Litres)	0.858

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C). Prepared leachates do not hold ISO17025 accreditation.

25/02/2025 11:20:43

11:20:20 25/02/2025



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Table of Results - Appendix

Method No	Description
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM241	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser
TM245	Determination of GRO by Headspace in waters
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM151	Determination of Hexavalent Chromium using Kone analyser
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM439	Determination of Extractable Petroleum Hydrocarbons (EPH) CWG banding by GC-FID on liquids
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM152	Analysis of Aqueous Samples by ICP-MS
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM218	The determination of PAH in soil samples by GC-MS
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



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Test Completion Dates

Lab Sample No(s)	30885494	30885495	30885493
Customer Sample Ref.	C04	C04	C06
AGS Ref.			
Depth	0.30 - 0.30	0.80 - 0.80	0.60 - 0.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	02-Jan-2025	03-Jan-2025	02-Jan-2025
CEN 10:1 Leachate (1 Stage)		23-Dec-2024	23-Dec-2024
CEN Readings		02-Jan-2025	02-Jan-2025
Cyanide Comp/Free/Total/Thiocyanate		02-Jan-2025	02-Jan-2025
Dissolved Metals by ICP-MS		09-Jan-2025	09-Jan-2025
Dissolved Organic/Inorganic Carbon		02-Jan-2025	02-Jan-2025
EPH and CWG (Filtered) by FID		03-Jan-2025	03-Jan-2025
EPH CWG GC (S)	07-Jan-2025	06-Jan-2025	06-Jan-2025
GRO by GC-FID (S)	06-Jan-2025	06-Jan-2025	06-Jan-2025
GRO by GC-FID (W)		31-Dec-2024	31-Dec-2024
Hexavalent Chromium (s)	03-Jan-2025	03-Jan-2025	03-Jan-2025
Hexavalent Chromium (w)		03-Jan-2025	03-Jan-2025
Mercury Dissolved		02-Jan-2025	31-Dec-2024
Metals in solid samples by OES	07-Jan-2025	06-Jan-2025	06-Jan-2025
Moisture at 105C		23-Dec-2024	23-Dec-2024
PAH by GCMS	07-Jan-2025	07-Jan-2025	07-Jan-2025
PAH in waters by GC-MS (diss.filt)		13-Jan-2025	13-Jan-2025
pH	02-Jan-2025	02-Jan-2025	02-Jan-2025
pH Value		31-Dec-2024	31-Dec-2024
pH Value of Filtered Water		02-Jan-2025	02-Jan-2025
Phenols by HPLC (S)	25-Feb-2025	25-Feb-2025	03-Jan-2025
Phenols by HPLC (W)		02-Jan-2025	02-Jan-2025
Sample description	23-Dec-2024	23-Dec-2024	23-Dec-2024
Total Organic Carbon	07-Jan-2025	08-Jan-2025	06-Jan-2025
TPH CWG Filtered (W)		03-Jan-2025	03-Jan-2025
TPH CWG GC (S)	07-Jan-2025	06-Jan-2025	06-Jan-2025
VOC MS (S)	06-Jan-2025	07-Jan-2025	07-Jan-2025
VOC MS (W)		03-Jan-2025	03-Jan-2025



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ASSOCIATED AQC DATA

Cyanide Comp/Free/Total/Thiocyanate

Component	Method Code	QC 3087
Free Cyanide (W)	TM227	104.0 98.67 : 122.67
Thiocyanate (W)	TM227	96.5 91.75 : 115.75
Total Cyanide (W)	TM227	101.25 93.00 : 117.00

Dissolved Metals by ICP-MS

Component	Method Code	QC 3037	QC 3008
Aluminium	TM152	102.33 95.24 : 111.40	104.33 95.67 : 113.25
Antimony	TM152	103.17 94.33 : 112.23	104.17 96.18 : 111.18
Arsenic	TM152	101.83 94.83 : 110.43	103.5 94.27 : 111.07
Barium	TM152	103.17 93.82 : 113.06	104.5 91.84 : 114.42
Beryllium	TM152	101.0 94.87 : 113.47	105.67 94.83 : 116.93
Bismuth	TM152	102.17 95.28 : 111.68	103.17 95.88 : 111.08
Borate	TM152	103.7 88.00 : 112.00	
Boron	TM152	103.67 91.82 : 118.71	105.33 92.42 : 121.06
Cadmium	TM152	103.17 93.90 : 112.50	104.33 95.98 : 111.88
Calcium	TM152	103.33 94.54 : 110.75	103.33 96.22 : 109.10
Chromium	TM152	102.33 94.18 : 109.80	101.83 95.22 : 109.76
Cobalt	TM152	100.17 93.95 : 109.53	103.0 94.47 : 110.94
Copper	TM152	102.67 93.88 : 110.94	104.5 94.81 : 112.13
Iron	TM152	103.33 95.31 : 109.92	101.33 95.43 : 109.98
Lead	TM152	101.83 94.24 : 111.99	107.0 95.87 : 112.11
Lithium	TM152	100.5 94.28 : 113.28	104.5 93.93 : 115.73
Magnesium	TM152	105.33 93.45 : 108.63	102.0 93.91 : 108.37
Manganese	TM152	102.83 95.81 : 110.44	101.33 95.66 : 110.12
Molybdenum	TM152	99.67 93.46 : 109.15	102.5 93.76 : 109.43
Nickel	TM152	102.5 92.80 : 111.23	103.83 95.01 : 111.19
Phosphorus	TM152	102.0 93.78 : 110.72	102.0 93.82 : 109.72



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Dissolved Metals by ICP-MS

		QC 3037	QC 3008
Potassium	TM152	104.67 95.43 : 111.23	103.33 95.38 : 108.95
Selenium	TM152	101.5 94.10 : 113.00	104.67 94.20 : 113.10
Silver	TM152	103.0 91.22 : 112.22	104.0 94.95 : 112.75
Sodium	TM152	106.67 93.17 : 108.57	102.0 92.99 : 108.70
Strontium	TM152	103.0 95.28 : 111.33	102.0 95.55 : 111.45
Tellurium	TM152	105.5 95.60 : 115.20	107.33 95.38 : 114.78
Thallium	TM152	100.67 73.68 : 123.18	103.0 75.83 : 123.93
Tin	TM152	103.0 93.06 : 109.94	105.33 96.86 : 110.37
Titanium	TM152	101.83 94.67 : 110.97	106.5 95.88 : 112.88
Tungsten	TM152	102.67 93.55 : 109.35	104.83 95.38 : 109.38
Uranium	TM152	99.17 93.98 : 110.48	102.33 95.05 : 110.65
Vanadium	TM152	100.17 92.88 : 110.53	102.17 93.43 : 110.79
Zinc	TM152	103.67 96.14 : 111.23	104.67 95.71 : 112.92

Dissolved Organic/Inorganic Carbon

Component	Method Code	QC 3057	QC 3046
Total Organic Carbon	TM090	96.5 86.43 : 107.83	96.5 86.43 : 107.83

EPH and CWG (Filtered) by FID

Component	Method Code	QC 3080
Total Aliphatics >C12-C35 (a)	TM439	97.85 79.76 : 116.51
Total Aromatics >C12-C35 (a)	TM439	80.06 73.89 : 112.17
Total EPH >C10-C40	TM439	87.85 75.37 : 110.89

GRO by GC-FID (S)

Component	Method Code	QC 3049	QC 3038
QC	TM089	95.48 81.38 : 118.62	106.04 81.38 : 118.62



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GRO by GC-FID (W)

Component	Method Code	QC 3063
Benzene by GC	TM245	103.5 79.13 : 118.84
Ethylbenzene by GC	TM245	101.0 79.54 : 115.99
m & p Xylene by GC	TM245	102.0 78.44 : 116.32
MTBE GC-FID	TM245	100.0 77.12 : 111.62
o Xylene by GC	TM245	99.5 76.85 : 120.29
QC	TM245	102.25 74.52 : 122.16
Toluene by GC	TM245	101.0 79.00 : 121.96

Hexavalent Chromium (s)

Component	Method Code	QC 3049	QC 3071
Hexavalent Chromium	TM151	96.0 84.37 : 115.69	92.0 84.37 : 115.69

Hexavalent Chromium (w)

Component	Method Code	QC 3056
Hexavalent Chromium	TM241	97.6 92.00 : 104.00

Mercury Dissolved

Component	Method Code	QC 3057	QC 3099
Mercury Dissolved (CVAF)	TM183	83.8 67.00 : 121.00	102.0 67.00 : 121.00

Metals in solid samples by OES

Component	Method Code	QC 3034	QC 3020
Aluminium	TM181	58.82 86.71 : 111.40	67.06 86.71 : 111.40
Antimony	TM181	89.84 88.08 : 103.45	91.6 88.08 : 103.45
Arsenic	TM181	96.57 97.25 : 111.11	97.86 97.25 : 111.11
Barium	TM181	83.78 92.16 : 108.55	87.16 92.16 : 108.55



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Metals in solid samples by OES

		QC 3034	QC 3020
Beryllium	TM181	95.09 92.84 : 106.84	96.28 92.84 : 106.84
Boron	TM181	92.78 94.63 : 116.77	92.78 94.63 : 116.77
Cadmium	TM181	98.86 94.89 : 110.27	99.43 94.89 : 110.27
Chromium	TM181	103.11 92.71 : 111.91	102.2 92.71 : 111.91
Cobalt	TM181	95.54 93.59 : 107.31	96.18 93.59 : 107.31
Copper	TM181	100.0 93.60 : 112.87	100.75 93.60 : 112.87
Iron	TM181	44.14 90.12 : 107.34	56.84 90.12 : 107.34
Lead	TM181	100.8 91.90 : 117.28	100.8 91.90 : 117.28
Manganese	TM181	98.35 92.06 : 109.30	99.18 92.06 : 109.30
Mercury	TM181	87.29 85.98 : 105.92	88.13 85.98 : 105.92
Molybdenum	TM181	96.36 93.26 : 108.95	97.35 93.26 : 108.95
Nickel	TM181	98.27 95.24 : 110.36	99.13 95.24 : 110.36
Phosphorus	TM181	100.63 76.63 : 137.59	100.63 76.63 : 137.59
Selenium	TM181	98.54 96.10 : 110.57	98.7 96.10 : 110.57
Strontium	TM181	94.26 90.23 : 110.07	95.44 90.23 : 110.07
Thallium	TM181	100.78 97.38 : 111.61	101.36 97.38 : 111.61
Tin	TM181	94.98 94.59 : 108.58	96.31 94.59 : 108.58
Titanium	TM181	82.68 83.87 : 112.04	85.04 83.87 : 112.04
Vanadium	TM181	93.47 89.61 : 107.72	94.01 89.61 : 107.72
Zinc	TM181	97.08 93.02 : 110.31	97.89 93.02 : 110.31

PAH by GCMS

Component	Method Code	QC 3039	QC 3042
Acenaphthene	TM218	92.0 78.16 : 109.52	91.0 78.16 : 109.52
Acenaphthylene	TM218	90.0 74.19 : 106.17	89.0 74.19 : 106.17
Anthracene	TM218	91.0 72.75 : 113.97	89.5 72.75 : 113.97
Benz(a)anthracene	TM218	92.0 65.56 : 114.18	92.5 65.56 : 114.18
Benzo(a)pyrene	TM218	87.0 62.73 : 115.79	91.5 62.73 : 115.79



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PAH by GCMS

		QC 3039	QC 3042
Benzo(b)fluoranthene	TM218	86.0 61.35 : 114.05	91.0 61.35 : 114.05
Benzo(ghi)perylene	TM218	81.0 65.56 : 111.31	88.5 65.56 : 111.31
Benzo(k)fluoranthene	TM218	88.0 65.56 : 110.20	90.5 65.56 : 110.20
Chrysene	TM218	90.5 66.39 : 109.87	90.0 66.39 : 109.87
Dibenzo(ah)anthracene	TM218	79.5 61.54 : 114.29	87.0 61.54 : 114.29
Fluoranthene	TM218	97.0 65.43 : 120.27	92.5 65.43 : 120.27
Fluorene	TM218	91.0 75.92 : 109.56	89.5 75.92 : 109.56
Indeno(123cd)pyrene	TM218	83.5 59.14 : 115.15	84.0 59.14 : 115.15
Naphthalene	TM218	91.5 76.27 : 103.36	92.0 76.27 : 103.36
Phenanthrene	TM218	95.0 72.67 : 112.62	88.5 72.67 : 112.62
Pyrene	TM218	97.0 68.15 : 117.98	95.0 68.15 : 117.98

PAH in waters by GC-MS (diss.filt)

Component	Method Code	QC 3047
Acenaphthene (diss.filt)	TM178	96.4 94.40 : 118.40
Acenaphthylene (diss.filt)	TM178	96.4 89.20 : 120.40
Anthracene (diss.filt)	TM178	100.8 92.40 : 118.80
Benzo(a)anthracene (diss.filt)	TM178	98.0 85.60 : 116.80
Benzo(a)pyrene (diss.filt)	TM178	95.2 90.40 : 119.20
Benzo(b)fluoranthene (diss.filt)	TM178	96.0 82.00 : 120.40
Benzo(g,h,i)perylene (diss.filt)	TM178	97.2 92.40 : 118.80
Benzo(k)fluoranthene (diss.filt)	TM178	115.2 92.00 : 125.60
Chrysene (diss.filt)	TM178	105.2 90.00 : 118.80
Dibenzo(a,h)anthracene (diss.filt)	TM178	94.0 89.60 : 118.40
Fluoranthene (diss.filt)	TM178	100.4 90.40 : 121.60
Fluorene (diss.filt)	TM178	98.0 91.60 : 120.40
Indeno(1,2,3-cd)pyrene (diss.filt)	TM178	92.8 88.40 : 117.20
Naphthalene (diss.filt)	TM178	101.6 95.60 : 124.40



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PAH in waters by GC-MS (diss.filt)

		QC 3047
Phenanthrene (diss.filt)	TM178	106.0 92.40 : 118.80
Pyrene (diss.filt)	TM178	104.4 88.00 : 124.00

pH

Component	Method Code	QC 3021	QC 3019	QC 3017
pH	TM133	102.14 98.80 : 104.41	102.0 98.80 : 104.41	102.4 98.80 : 104.41

pH Value

Component	Method Code	QC 3050
pH	TM256	99.47 98.26 : 103.07

pH Value of Filtered Water

Component	Method Code	QC 3025
EC QC	TM256	106.29 102.40 : 109.21
pH	TM256	99.6 98.26 : 103.07
TDS QC	TM256	98.56 96.82 : 102.03

Phenols by HPLC (S)

Component	Method Code	QC 3075	QC 3083
2,3,5 Trimethyl-Phenol by HPLC (S)	TM062 (S)	95.81 87.43 : 108.98	91.02 80.24 : 108.98
2-Isopropyl Phenol by HPLC (S)	TM062 (S)	89.82 81.44 : 102.99	91.02 74.25 : 110.18
Cresols by HPLC (S)	TM062 (S)	91.63 81.44 : 100.60	90.44 83.03 : 104.59
Phenol by HPLC (S)	TM062 (S)	89.82 80.24 : 101.80	89.82 81.44 : 102.99
Xylenols by HPLC (S)	TM062 (S)	93.21 83.63 : 103.99	92.22 84.63 : 104.99

Phenols by HPLC (W)



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Phenols by HPLC (W)

Component	Method Code	QC 3005
2,3,5 Trimethyl-Phenol by HPLC (W)	TM259	100.0 77.41 : 127.55
2-Isopropyl Phenol by HPLC (W)	TM259	102.0 82.77 : 126.51
Cresols by HPLC (W)	TM259	100.0 76.60 : 126.28
Naphthol by HPLC (W)	TM259	98.0 76.00 : 112.00
Phenol by HPLC (W)	TM259	102.0 85.77 : 125.91
Xylenols by HPLC (W)	TM259	101.33 79.09 : 131.82

Total Organic Carbon

Component	Method Code	QC 3046	QC 3041	QC 3005
Total Organic Carbon	TM132	96.35 93.61 : 106.00	97.45 93.61 : 106.00	96.72 93.61 : 106.00

VOC MS (S)

Component	Method Code	QC 3034	QC 3043
1,1,1,2-tetrachloroethane	TM116	101.4 89.71 : 113.35	99.8 82.42 : 121.25
1,1,1-Trichloroethane	TM116	94.0 92.23 : 113.96	97.8 87.31 : 120.47
1,1,2,2-Tetrachloroethane	TM116	96.8 74.71 : 116.74	87.0 75.37 : 117.90
1,1,2-Trichloroethane	TM116	95.6 82.01 : 115.46	95.0 79.35 : 115.79
1,1-Dichloroethane	TM116	101.2 94.73 : 123.76	101.0 85.01 : 116.90
1,1-Dichloroethene	TM116	101.6 84.94 : 123.17	102.6 84.60 : 121.62
1,1-Dichloropropene	TM116	99.6 88.10 : 109.60	101.6 89.57 : 110.60
1,2,3-Trichlorobenzene	TM116	137.8 80.18 : 160.82	120.2 70.37 : 131.43
1,2,3-Trichloropropane	TM116	106.8 83.20 : 129.88	96.6 82.52 : 130.69
1,2,4-Trichlorobenzene	TM116	147.4 79.67 : 180.33	139.6 77.21 : 182.79
1,2,4-Trimethylbenzene	TM116	99.8 68.82 : 118.86	101.8 68.01 : 133.05
1,2-Dibromo-3-Chloropropane	TM116	69.2 47.88 : 92.12	63.6 52.42 : 99.96
1,2-Dibromoethane	TM116	101.8 82.71 : 127.60	95.2 83.19 : 123.20
1,2-Dichlorobenzene	TM116	90.4 77.67 : 104.35	85.0 69.69 : 109.59



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VOC MS (S)

		QC 3034	QC 3043
1,2-Dichloroethane	TM116	97.2 85.38 : 121.58	95.6 81.24 : 121.87
1,2-Dichloropropane	TM116	99.0 89.19 : 110.91	99.6 84.57 : 115.28
1,3,5-Trimethylbenzene	TM116	101.2 65.01 : 121.14	102.8 71.10 : 131.75
1,3-Dichlorobenzene	TM116	105.4 86.58 : 116.11	99.0 78.36 : 122.99
1,3-Dichloropropane	TM116	97.6 84.08 : 118.88	98.4 80.44 : 121.21
1,4-Dichlorobenzene	TM116	106.6 87.76 : 118.06	95.0 80.86 : 122.63
2-Chlorotoluene	TM116	93.6 75.87 : 101.44	88.4 72.44 : 111.78
4-Chlorotoluene	TM116	90.0 72.14 : 100.00	85.4 69.42 : 106.40
Benzene	TM116	109.6 99.80 : 118.22	110.4 93.51 : 122.00
Bromobenzene	TM116	98.2 88.03 : 111.60	91.8 83.00 : 116.37
Bromochloromethane	TM116	100.2 82.77 : 123.54	97.0 78.40 : 125.08
Bromodichloromethane	TM116	86.8 82.07 : 108.53	87.8 81.88 : 113.17
Bromoform	TM116	104.0 71.29 : 128.60	92.0 79.44 : 125.23
Bromomethane	TM116	105.6 87.73 : 135.58	100.2 76.38 : 123.20
Carbon Disulphide	TM116	112.8 91.85 : 128.47	110.8 74.35 : 133.03
Carbontetrachloride	TM116	95.0 86.40 : 110.26	97.6 83.14 : 111.51
Chlorobenzene	TM116	110.4 93.35 : 119.43	101.8 86.98 : 120.02
Chloroethane	TM116	105.4 87.72 : 134.34	104.2 78.03 : 127.56
Chloroform	TM116	100.0 90.68 : 119.59	98.4 87.97 : 112.70
Chloromethane	TM116	105.8 64.80 : 145.14	101.0 65.86 : 140.09
Cis-1,2-Dichloroethene	TM116	106.6 91.66 : 116.68	104.6 85.55 : 122.49
Cis-1,3-Dichloropropene	TM116	77.6 52.37 : 102.48	79.0 67.76 : 110.88
Dibromochloromethane	TM116	99.6 81.56 : 124.55	92.8 80.07 : 119.00
Dibromomethane	TM116	93.8 80.06 : 114.10	89.6 73.08 : 115.53
Dichlorodifluoromethane	TM116	101.8 50.43 : 155.04	93.6 40.98 : 156.53
Dichloromethane	TM116	103.2 83.28 : 130.87	101.4 82.85 : 116.54
Ethylbenzene	TM116	96.0 88.22 : 113.27	95.0 82.76 : 112.62



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VOC MS (S)

		QC 3034	QC 3043
Hexachlorobutadiene	TM116	96.4 31.71 : 108.29	98.6 29.43 : 136.03
Isopropylbenzene	TM116	86.0 62.50 : 108.30	90.6 68.49 : 115.93
Naphthalene	TM116	114.4 87.47 : 124.57	107.6 81.17 : 124.69
o-Xylene	TM116	86.8 72.31 : 104.09	86.6 73.40 : 104.62
p/m-Xylene	TM116	92.8 82.78 : 107.35	90.4 69.56 : 111.53
Propylbenzene	TM116	79.8 59.09 : 102.69	83.4 59.05 : 107.61
Sec-Butylbenzene	TM116	75.0 39.33 : 100.67	87.2 41.58 : 128.22
Styrene	TM116	87.0 58.23 : 111.64	84.6 58.68 : 109.56
Tert-amyl methyl ether	TM116	74.2 70.78 : 110.91	90.8 72.28 : 112.01
Tert-butyl methyl ether	TM116	80.8 66.02 : 128.52	94.6 73.84 : 122.52
Tert-Butylbenzene	TM116	87.0 48.39 : 106.82	95.2 55.36 : 134.02
Tetrachloroethene	TM116	106.6 83.85 : 125.62	102.6 78.30 : 120.12
Toluene	TM116	98.8 92.18 : 109.09	100.6 85.49 : 109.77
Trans-1,2-Dichloroethene	TM116	102.0 91.02 : 126.69	101.4 90.27 : 112.30
Trichloroethene	TM116	93.0 90.38 : 106.98	94.0 84.12 : 110.17
Trichlorofluoromethane	TM116	105.0 96.41 : 128.97	104.2 93.37 : 134.79
Vinyl Chloride	TM116	105.2 69.29 : 143.01	102.2 69.81 : 134.36

VOC MS (W)

Component	Method Code	QC 3054
1,1,1,2-Tetrachloroethane	TM208	107.0 84.45 : 114.24
1,1,1-Trichloroethane	TM208	104.0 84.60 : 114.45
1,1,2,2-Tetrachloroethane	TM208	109.5 83.06 : 123.56
1,1,2-Trichloroethane	TM208	104.5 83.80 : 119.17
1,1-Dichloroethane	TM208	104.0 86.24 : 116.66
1,1-Dichloroethene	TM208	100.0 83.27 : 118.43
1,1-Dichloropropene	TM208	102.0 84.10 : 115.18
1,2,3-Trichlorobenzene	TM208	90.0 78.15 : 114.21



CERTIFICATE OF ANALYSIS

Validated

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Location: Rochdale Station SR

Superseded Report: 757231

VOC MS (W)

		QC 3054
1,2,3-Trichloropropane	TM208	109.0 79.47 : 125.70
1,2,4-Trichlorobenzene	TM208	81.0 76.00 : 110.02
1,2,4-Trimethylbenzene	TM208	100.0 81.19 : 109.72
1,2-Dibromoethane	TM208	100.0 84.64 : 119.02
1,2-Dichlorobenzene	TM208	105.5 86.14 : 116.68
1,2-Dichloroethane	TM208	102.5 85.99 : 116.35
1,2-Dichloropropane	TM208	103.5 85.63 : 118.27
1,3,5-Trimethylbenzene	TM208	101.0 81.76 : 109.54
1,3-Dichlorobenzene	TM208	104.0 82.32 : 114.57
1,3-Dichloropropane	TM208	102.0 85.60 : 117.07
1,4-Dichlorobenzene	TM208	105.0 82.73 : 116.45
2-Chlorotoluene	TM208	103.5 83.13 : 112.47
4-Chlorotoluene	TM208	105.0 83.19 : 112.56
4-Isopropyltoluene	TM208	97.5 81.78 : 115.29
Benzene	TM208	104.5 85.41 : 115.56
Bromobenzene	TM208	107.0 85.65 : 116.46
Bromochloromethane	TM208	102.5 80.14 : 123.22
Bromodichloromethane	TM208	106.0 83.78 : 124.25
Bromoform	TM208	109.5 60.69 : 155.10
Bromomethane	TM208	100.0 82.59 : 111.75
Carbon Disulphide	TM208	102.0 83.64 : 117.96
Carbontetrachloride	TM208	108.0 85.14 : 115.20
Chlorobenzene	TM208	108.0 84.32 : 114.08
Chloroethane	TM208	101.5 82.10 : 122.33
Chloroform	TM208	102.0 85.90 : 116.23
Chloromethane	TM208	105.5 81.84 : 110.73
Cis-1,2-Dichloroethene	TM208	100.0 86.19 : 117.21



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VOC MS (W)

		QC 3054
Cis-1,3-Dichloropropene	TM208	92.5 64.89 : 121.92
Dibromochloromethane	TM208	106.0 79.16 : 126.02
Dibromomethane	TM208	103.5 81.40 : 122.41
Dichloromethane	TM208	102.5 86.56 : 117.10
Ethylbenzene	TM208	102.5 82.07 : 111.05
Hexachlorobutadiene	TM208	85.5 76.11 : 107.70
Isopropylbenzene	TM208	99.5 79.97 : 110.18
Naphthalene	TM208	86.0 76.41 : 116.13
n-Butylbenzene	TM208	96.0 80.74 : 108.73
o-Xylene	TM208	102.5 81.09 : 109.71
p/m-Xylene	TM208	205.0 80.88 : 109.43
Propylbenzene	TM208	100.5 80.74 : 108.73
Sec-Butylbenzene	TM208	101.0 81.15 : 116.37
Styrene	TM208	102.0 82.69 : 111.40
Tert-amyl methyl ether	TM208	91.5 73.31 : 118.61
Tert-butyl methyl ether	TM208	91.5 82.45 : 116.41
Tert-Butylbenzene	TM208	100.0 80.77 : 109.63
Tetrachloroethene	TM208	101.0 83.00 : 112.28
Toluene	TM208	101.0 83.93 : 113.57
Trans-1,2-Dichloroethene	TM208	105.5 84.27 : 118.59
Trans-1,3-Dichloropropene	TM208	90.0 64.10 : 125.81
Trichloroethene	TM208	103.0 84.54 : 114.33
Trichlorofluoromethane	TM208	106.0 84.68 : 121.37
Vinyl Chloride	TM208	101.5 80.59 : 120.31

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

The figure detailed is the percentage recovery result for the AQC.

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.



CERTIFICATE OF ANALYSIS

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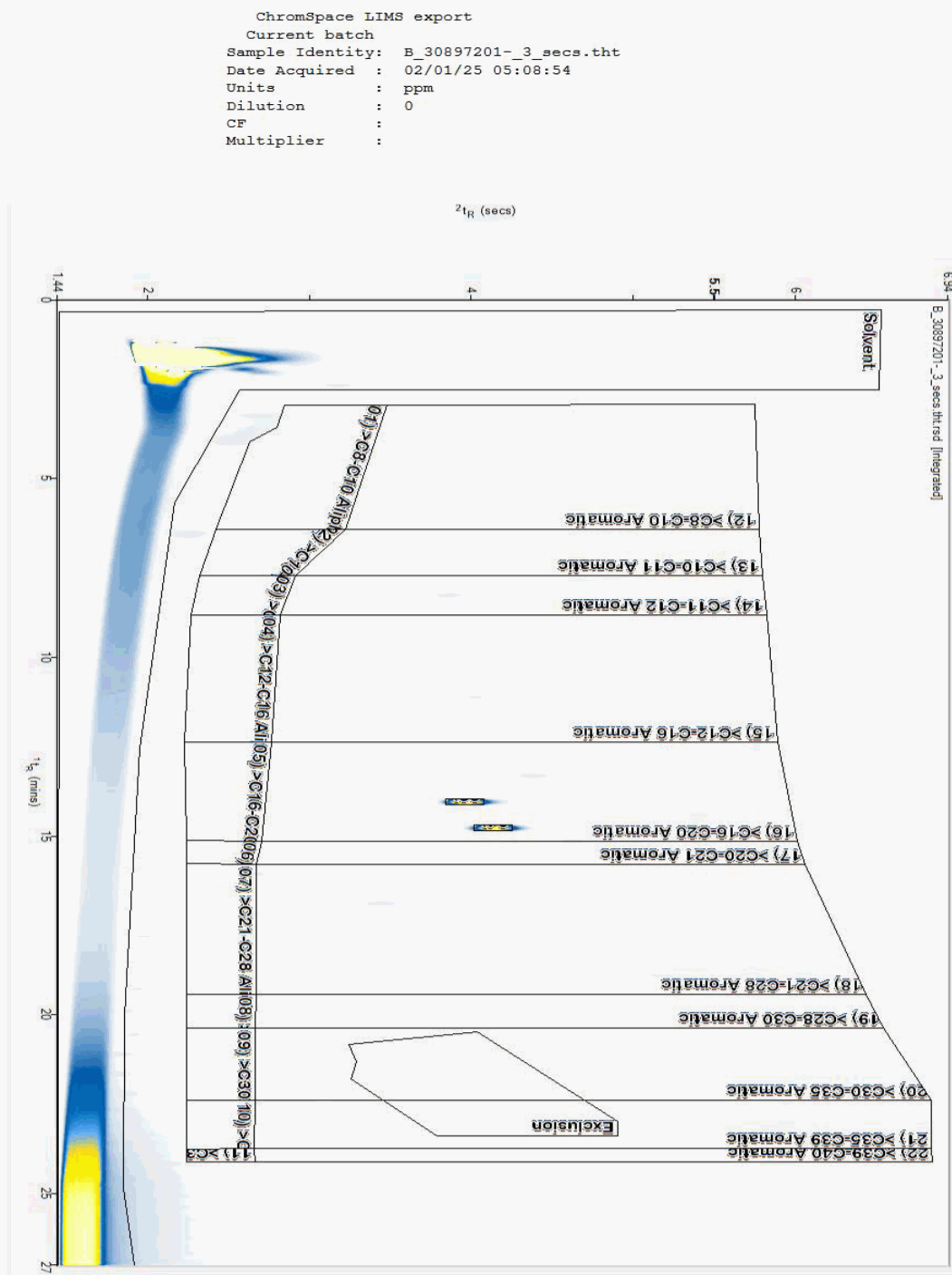
Superseded Report: 757231

Chromatogram

Analysis: EPH and CWG (Filtered) by FID

Sample No : 30897201
Sample ID : C06

Depth : 0.60 - 0.60





CERTIFICATE OF ANALYSIS

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Location: Rochdale Station SR

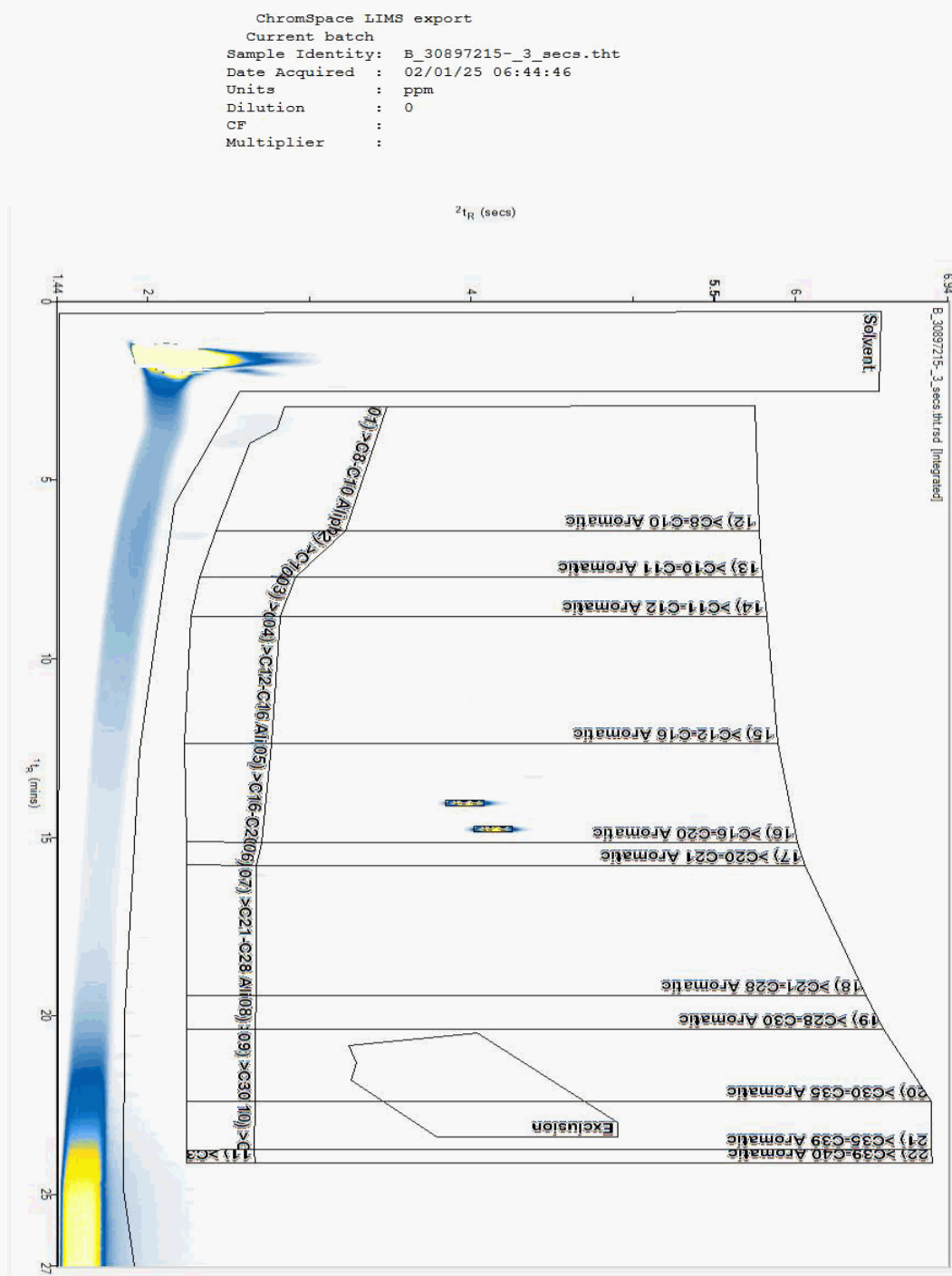
Superseded Report: 757231

Chromatogram

Analysis: EPH and CWG (Filtered) by FID

Sample No : 30897215
Sample ID : C04

Depth : 0.80 - 0.80





CERTIFICATE OF ANALYSIS

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SDG: 241221-65
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Report Number: 757232
Location: Rochdale Station SR

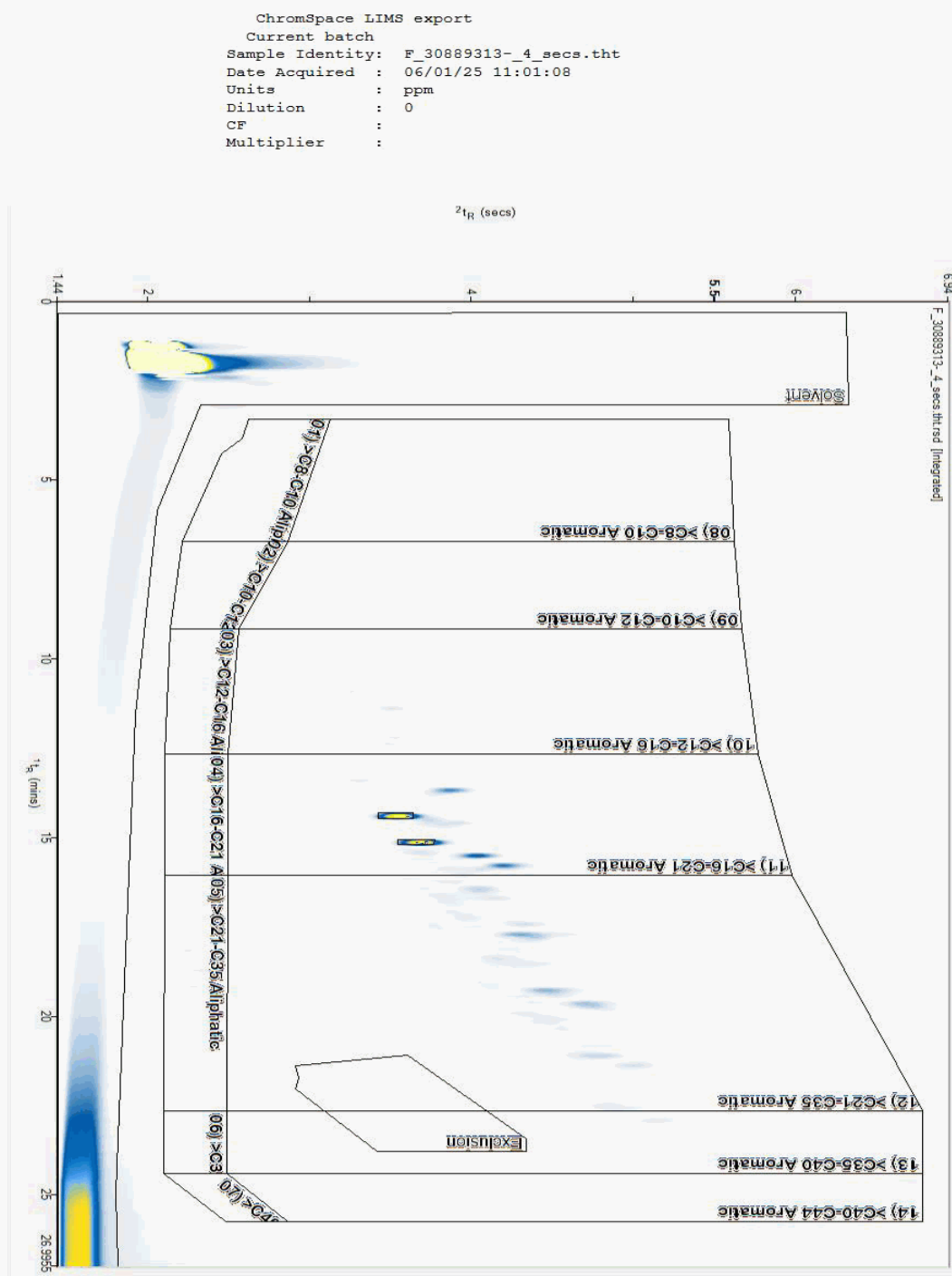
Superseded Report: 757231

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30889313
Sample ID : C04

Depth : 0.30 - 0.30





CERTIFICATE OF ANALYSIS

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Report Number: 757232
Location: Rochdale Station SR

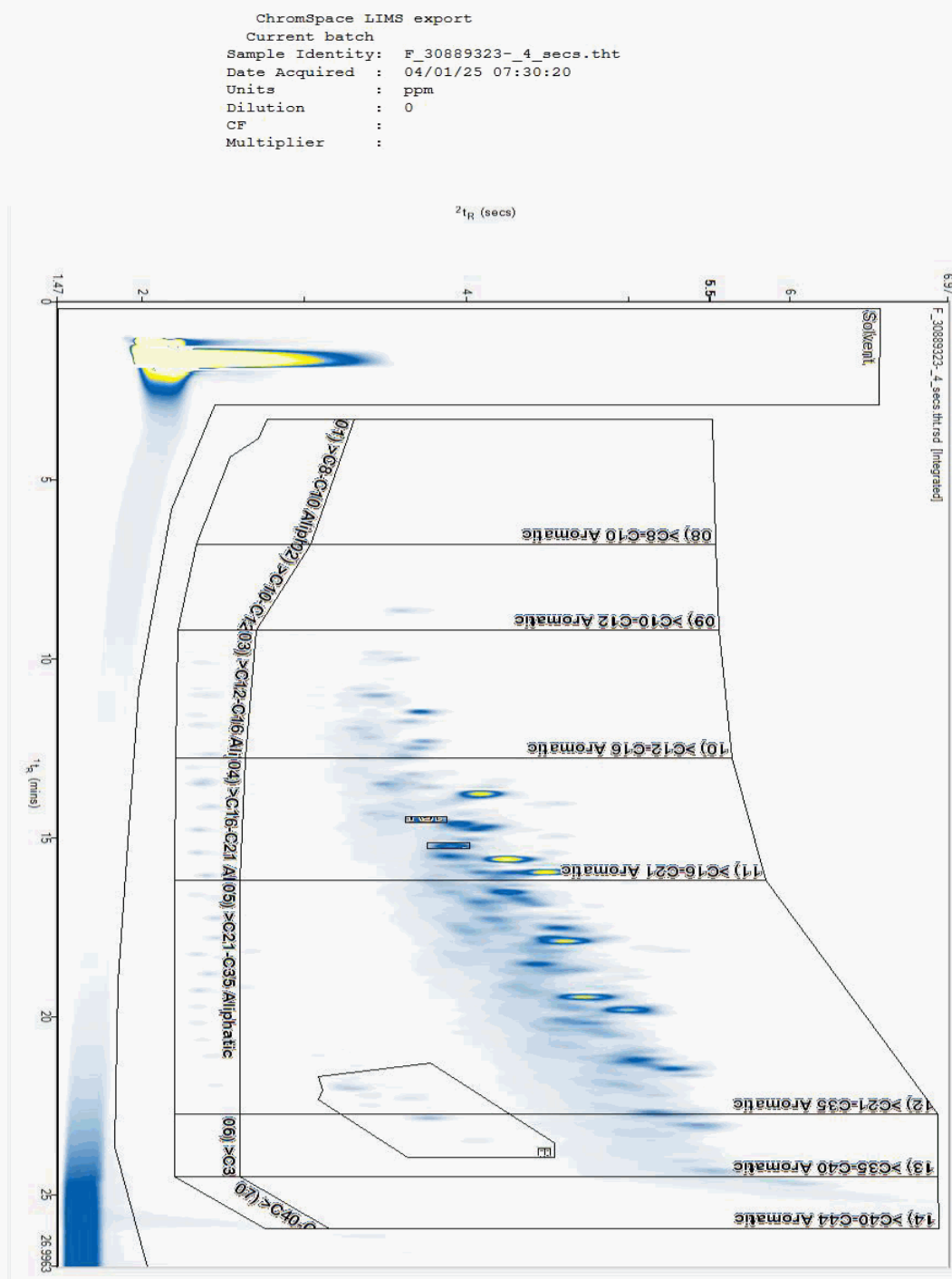
Superseded Report: 757231

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30889323
Sample ID : C06

Depth : 0.60 - 0.60





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

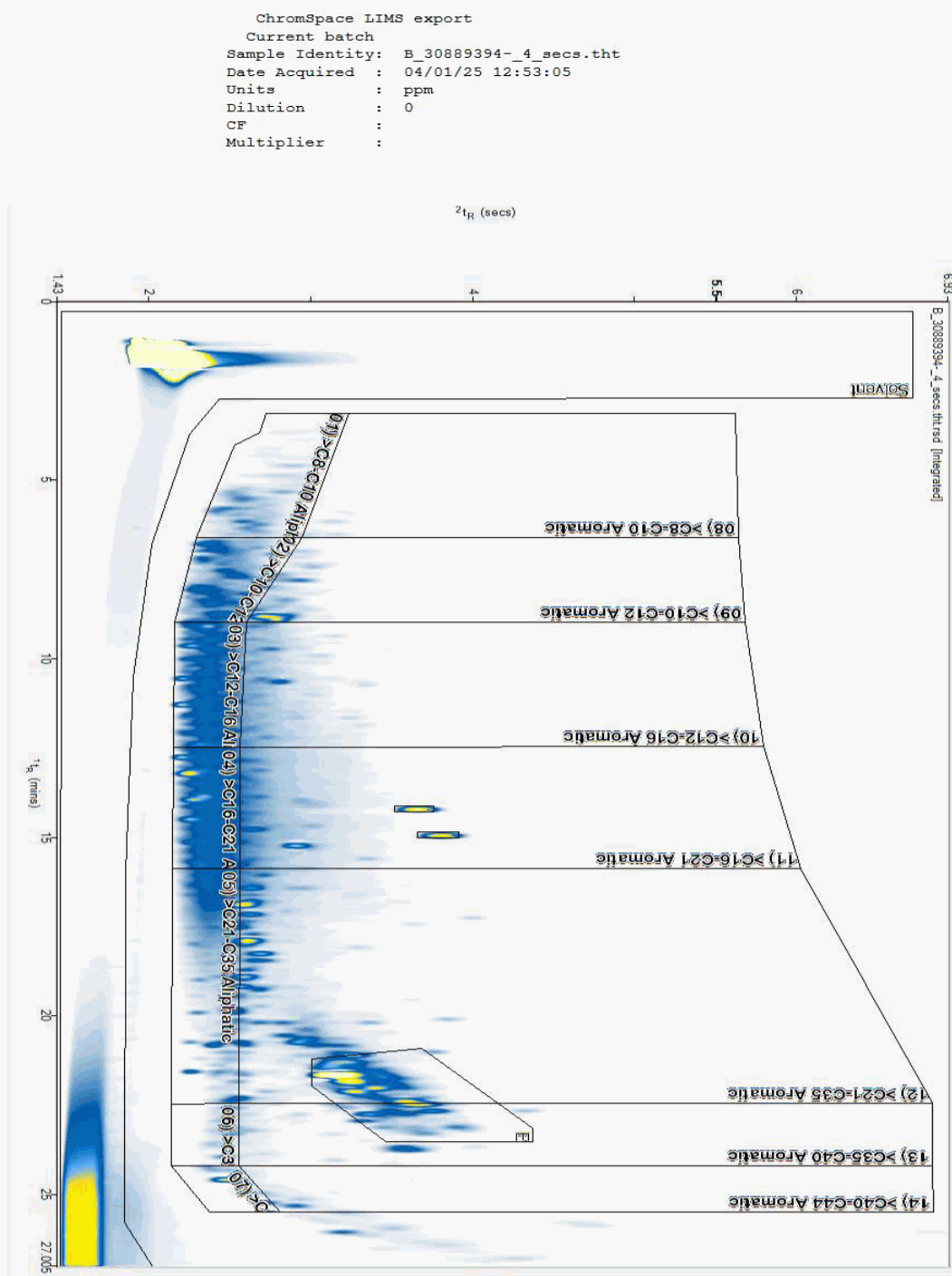
Superseded Report: 757231

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 30889394
Sample ID : C04

Depth : 0.80 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

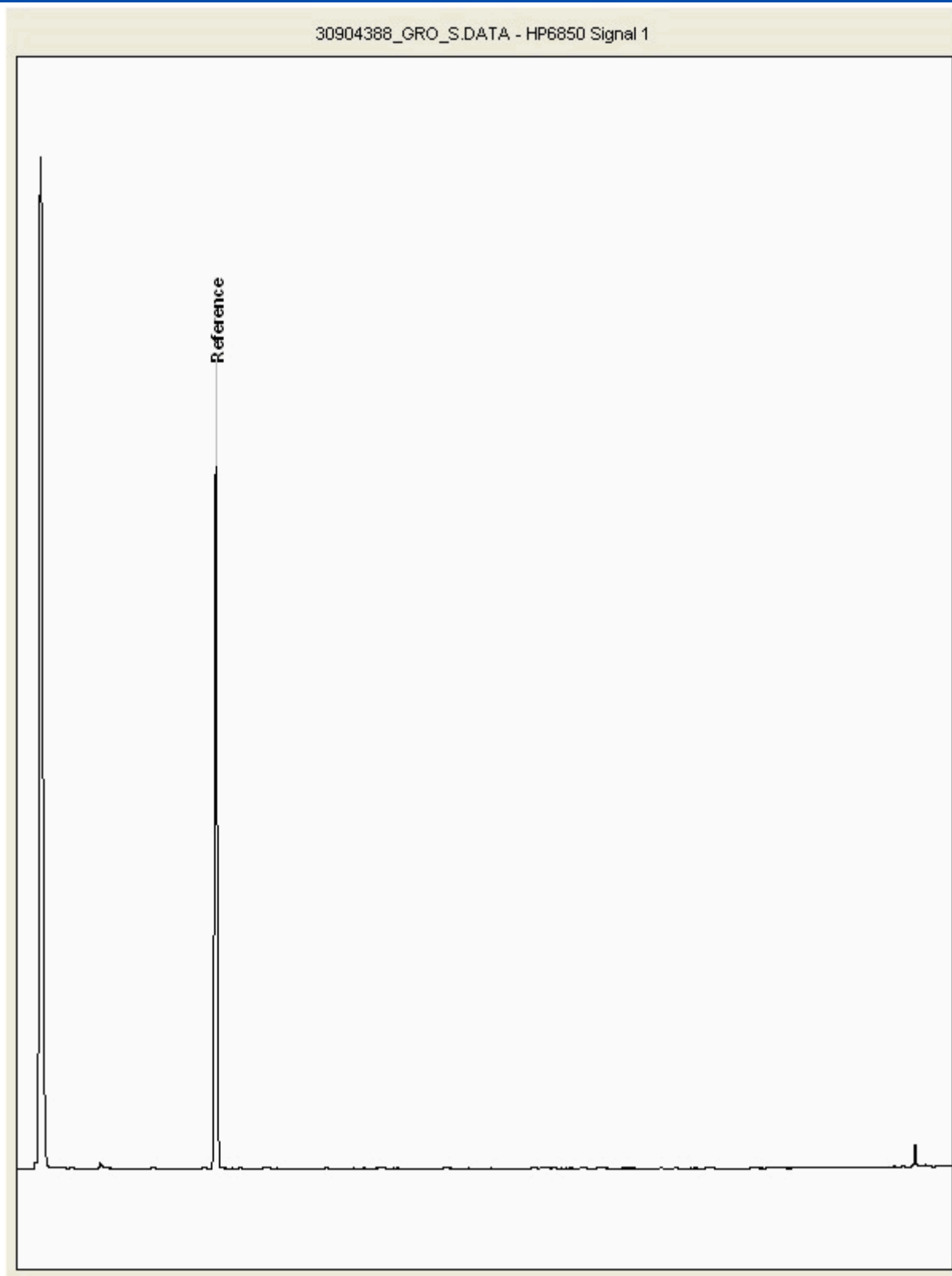
Superseded Report: 757231

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30904388
Sample ID : C04

Depth : 0.30 - 0.30





CERTIFICATE OF ANALYSIS

Validated

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Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

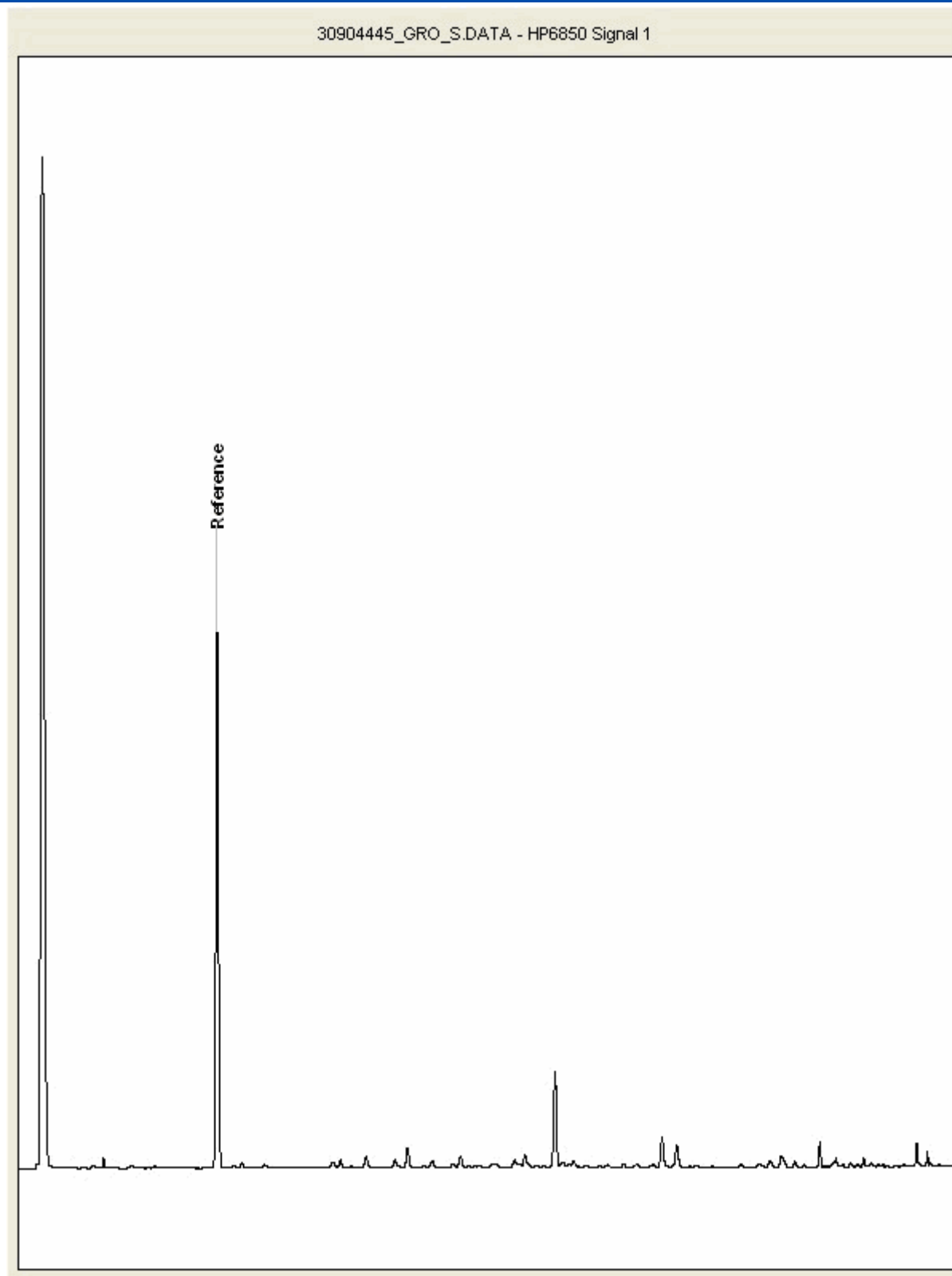
Superseded Report: 757231

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30904445
Sample ID : C06

Depth : 0.60 - 0.60





CERTIFICATE OF ANALYSIS

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Report Number: 757232
Location: Rochdale Station SR

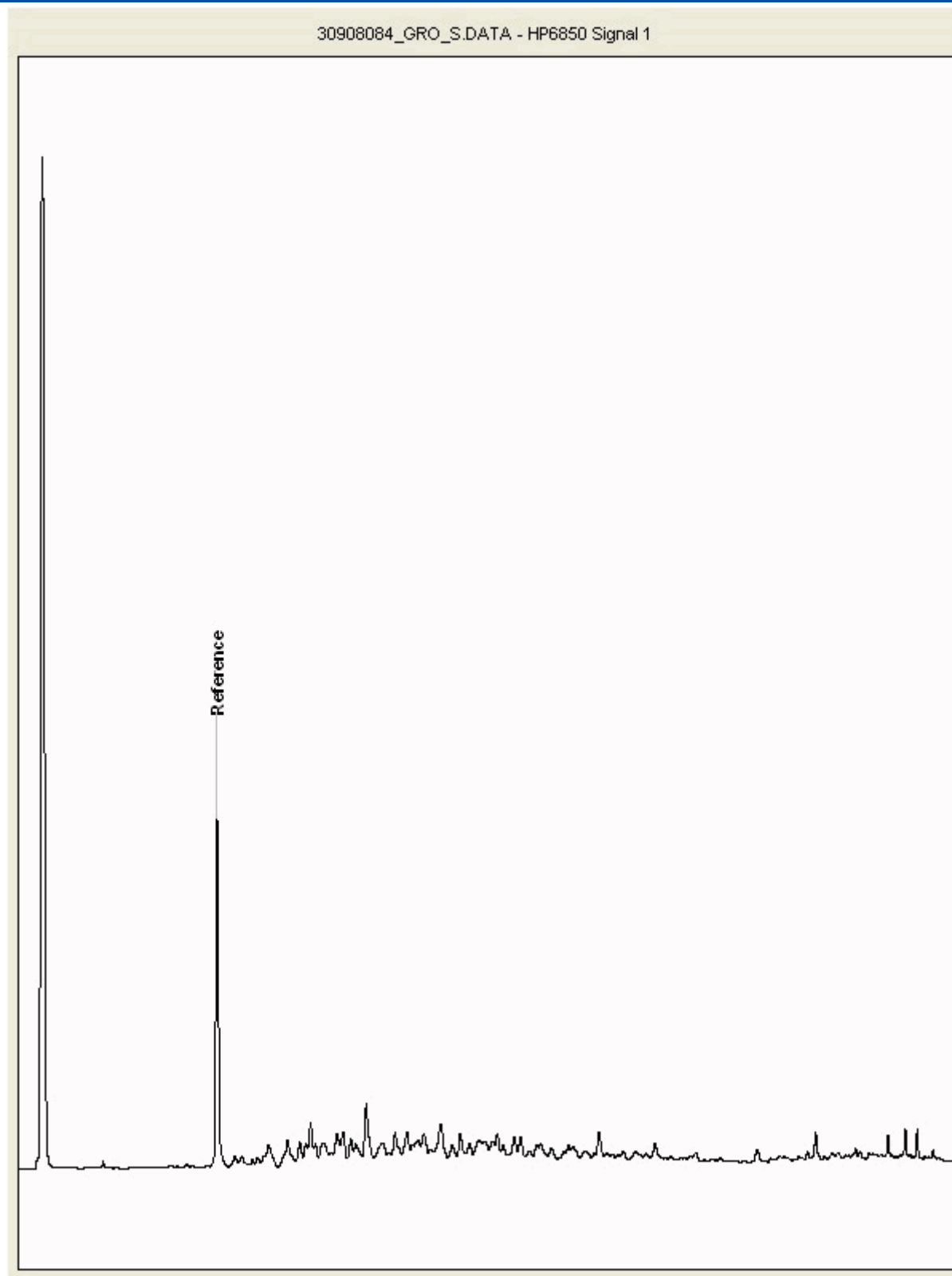
Superseded Report: 757231

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 30908084
Sample ID : C04

Depth : 0.80 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 241221-65
Client Ref.: 30220231-3

Report Number: 757232
Location: Rochdale Station SR

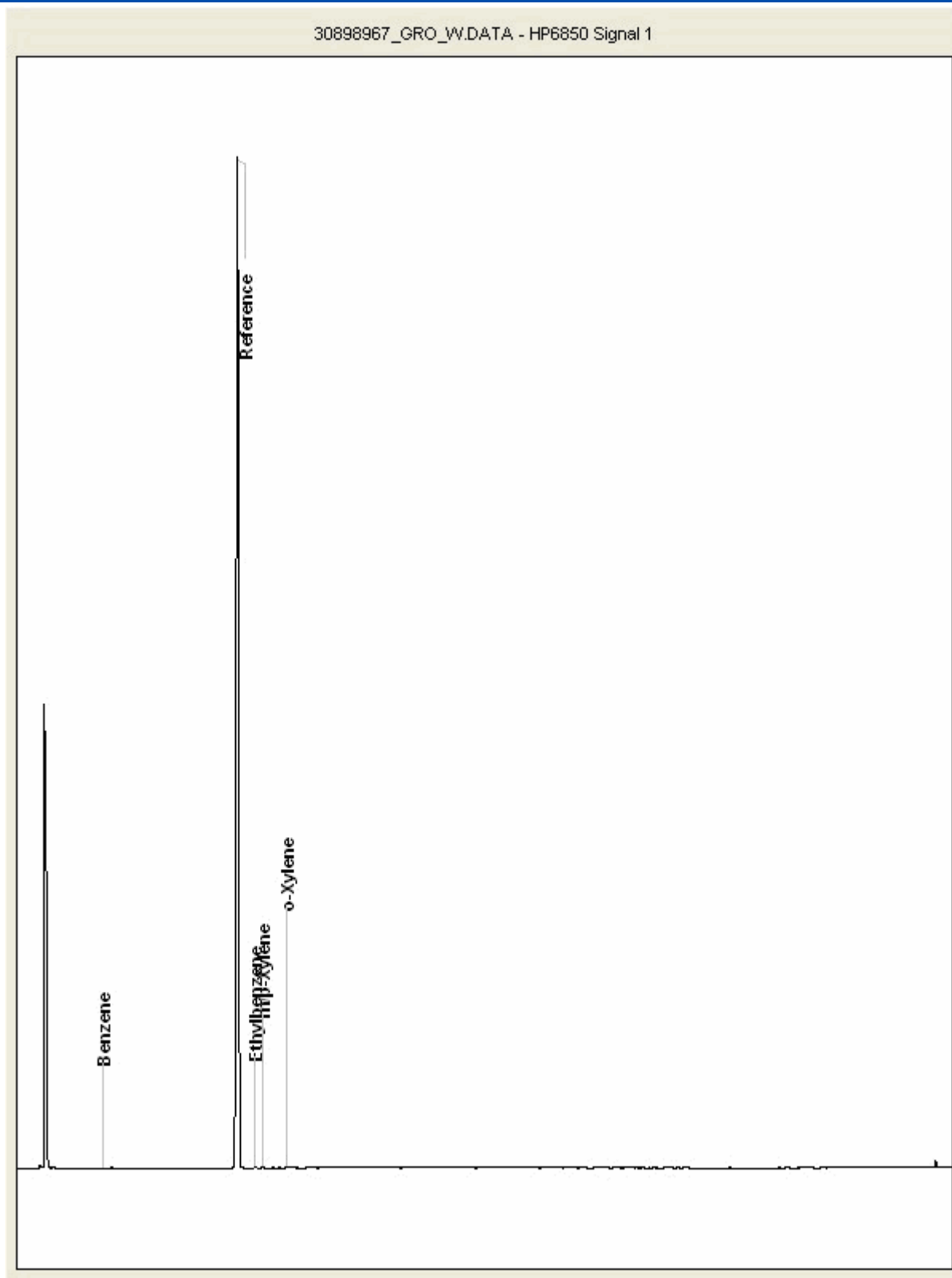
Superseded Report: 757231

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 30898967
Sample ID : C04

Depth : 0.80 - 0.80





CERTIFICATE OF ANALYSIS

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Report Number: 757232
Location: Rochdale Station SR

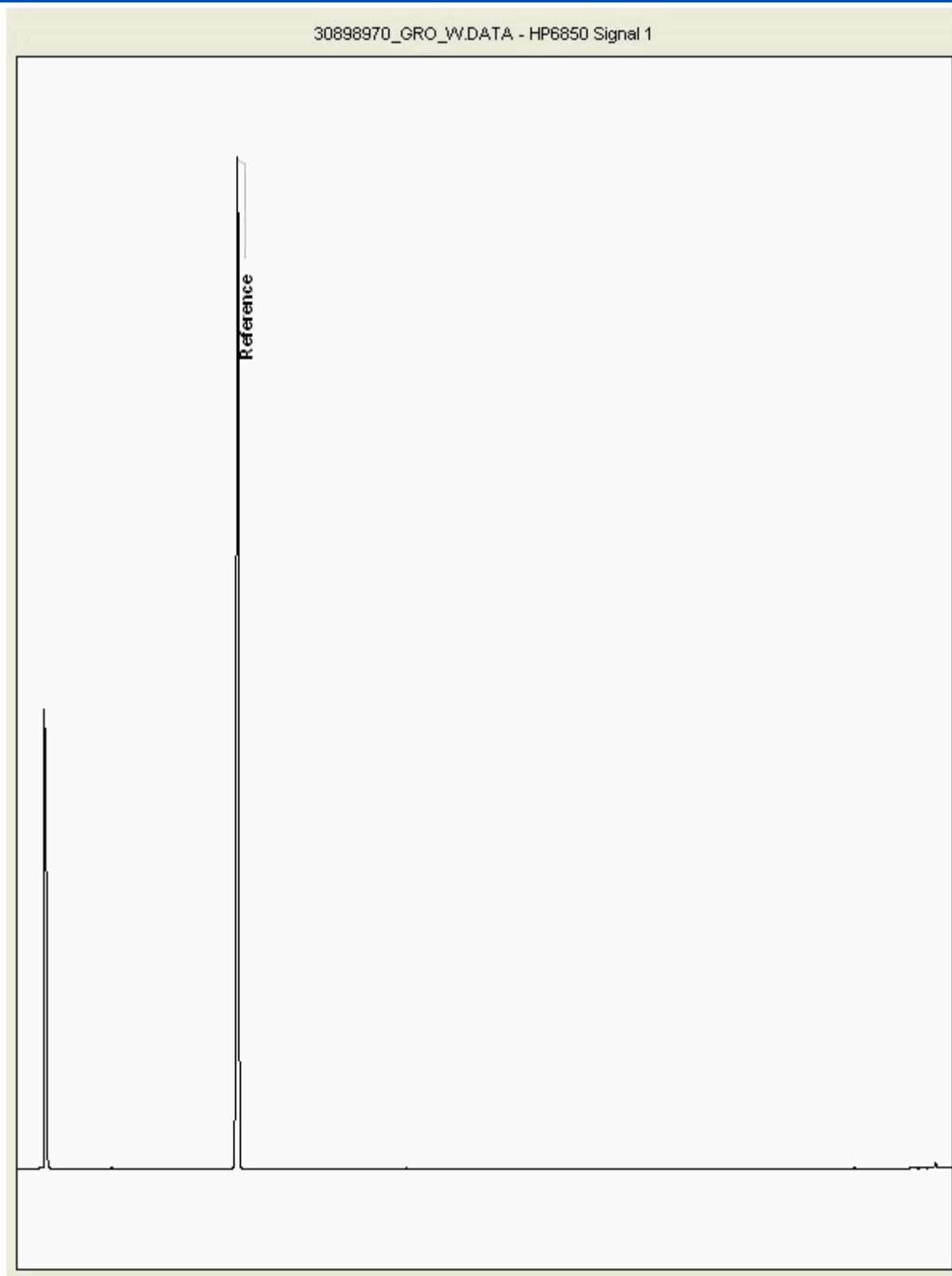
Superseded Report: 757231

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 30898970
Sample ID : C06

Depth : 0.60 - 0.60





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Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur - e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

If during the search of the two 'pinch' samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term 'trace asbestos identified' is reported.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.

Appendix F

Generic Quantitative Risk Assessment (GQRA) Tables

Location Matrix Date Depth (m)				C04	C04	C06	C10	C10	C24
				Soil	Soil	Soil	Soil	Soil	Soil
				20 Dec 2024	20 Dec 2024	20 Dec 2024	20 Dec 2024	20 Dec 2024	20 Dec 2024
				0.3 - 0.3	0.8 - 0.8	0.6 - 0.6	0.4 - 0.4	0.6 - 0.6	0.5 - 0.5
	Unit	MDL	LQM S4UL Commercial/Industrial - 1% SOM						
Metals									
Arsenic	mg/kg	0.6	640	3.05	5.71	39.3	41.7	20.5	2.68
Boron	mg/kg	0.7	240,000	1.76	10.4	4.61	8.77	7.85	1.82
Cadmium	mg/kg	0.02	190	1.06	0.0865	0.0487	0.449	0.0223	0.832
Chromium (hexavalent) (filtered)	mg/kg	0.6	33	<0.6	<6	<0.6	<0.6	<0.6	<0.6
Chromium	mg/kg	0.9	#1	3.59	3.34	7.85	7.87	6.16	4.58
Copper	mg/kg	1.4	68,000	8.73	17	62.7	217	107	9.85
Lead	mg/kg	0.7	2,300#2	56.2	44.3	170	79.3	33.9	139
Mercury	mg/kg	0.1	#3	<0.1	<0.1	0.33	<0.1	<0.1	<0.1
Nickel	mg/kg	0.2	980#4	5.01	11	18.1	69.3	52.4	6.34
Selenium	mg/kg	1	12,000	<1	<1	<1	<1	<1	<1
Zinc	mg/kg	1.9	730,000	43	30.3	47.5	98.6	51.4	45.1
Asbestos									
Asbestos:Anthrophyllite	No units		-	0#12	0#12	0#12	0#12	0#12	0#12
Asbestos: Actinolite	Detect		-	0#12	0#12	0#12	0#12	0#12	0#12
Crocidolite Asbestos	Detect		-	0#12	0#12	0#12	0#12	0#12	0#12
Chrysotile Asbestos	Detect		-	0#12	0#12	0#12	0#12	0#12	0#12
Amosite Asbestos	Detect		-	0#12	0#12	0#12	0#12	0#12	0#12
Tremolite	Detect		-	0#12	0#12	0#12	0#12	0#12	0#12
Non-Asbestos Fibre	Detect		-	0#12	0#12	0#12	1#15	0#12	0#12
PAH									
Naphthalene	mg/kg	0.009	(sol) 190#5	0.0281	0.0278	4.3	148	13.2	0.177
Acenaphthene	mg/kg	0.008	(sol) 84,000#5	0.0818	0.0196	9.74	36.1	1.84	0.71
Acenaphthylene	mg/kg	0.012	(sol) 83,000#5	<0.012	<0.012	<0.12	<0.6	<0.06	<0.12
Fluoranthene	mg/kg	0.017	23,000	0.778	0.135	59.6	334	13.6	8.56
Anthracene	mg/kg	0.016	520,000	0.0834	<0.016	11.3	55.4	2.19	1.22
Phenanthrene	mg/kg	0.015	22,000	0.443	0.118	50.2	282	11.1	4.78
Fluorene	mg/kg	0.01	(sol) 63,000#5	0.047	<0.01	6.15	28.9	1.5	0.514
Chrysene	mg/kg	0.01	350	0.372	0.0625	22.9	111	6.05	3.59
Pyrene	mg/kg	0.015	54,000	0.709	0.142	47.9	268	11.3	7.27
Benzo(a)anthracene	mg/kg	0.014	170	0.368	0.0698	22.5	121	5.33	3.66
Benzo(b)fluoranthene	mg/kg	0.015	44	0.512	0.0807	22.7	123	5.9	3.84
Benzo(k)fluoranthene	mg/kg	0.014	1,200	0.184	0.0231	8.35	44.1	2.03	1.36
Benzo(a)pyrene	mg/kg	0.015	35	0.446	0.0516	17.5	96.1	4.53	3.04
Dibenz(a,h)anthracene	mg/kg	0.023	3.5	0.0486	<0.023	1.78	8.96	0.453	0.338
Benzo(g,h,i)perylene	mg/kg	0.024	3,900	0.339	<0.024	8.74	46.2	2.31	1.71
Indeno(1,2,3-c,d)pyrene	mg/kg	0.018	500	0.301	0.0356	9.78	43.7	2.18	1.92
PAH 16 Total	mg/kg	0.118	-	4.74	0.765	304	1,750	83.5	42.7
TPH CWG									
>C5-C6 Aliphatics	mg/kg	0.01	(sol) 3,200#5	<0.01	0.0502#13	0.0293	0.0176	0.019	<0.01
>C6-C8 Aliphatics	mg/kg	0.01	(sol) 7,800#5	<0.01	0.322#13	0.15	0.231	0.0976	0.021
>C8-C10 Aliphatics	mg/kg	0.01	(sol) 2,000#5	<0.01	4.77#13	0.24	1.12	0.543	0.0252
>C5-C10 Aliphatics	mg/kg	0.05	-	<0.05	5.14#13	0.42	1.37	0.659	<0.05
>C10-C12 Aliphatics	mg/kg	1	(sol) 9,700#5	<1	128	<1	13.6	<1	<1
>C12-C16 Aliphatics	mg/kg	1	(sol) 59,000#5	<1	281	7.5	9.44	2.08	<1
>C16-C21 Aliphatics	mg/kg	1	800,000#6	<1	395	6.28	6.53	1.79	<1
>C21-C35 Aliphatics	mg/kg	1	800,000#6	<1	209	7.91	4.6	2.41	1.19
>C35-C44 Aliphatics	mg/kg	1	1,600,000	<1	36.1	<1	<1	<1	<1
>C10-C44 Aliphatics	mg/kg	5	-	<5	1,050	23.1	34.1	7.29	<5
>EC5-EC10 Aromatics	mg/kg	0.05	-	<0.05	3.18#13	0.161	0.761	0.362	<0.05
>EC6-EC7 Aromatics	mg/kg	0.01	-	<0.01	<0.01#13	<0.01	<0.01	<0.01	<0.01
>EC7-EC8 Aromatics	mg/kg	0.01	(vap) 56,000#7	<0.01	<0.01#13	<0.01	0.0113	<0.01	<0.01
>EC8-EC10 Aromatics	mg/kg	0.01	(vap) 3,500#7	<0.01	3.18#13	0.161	0.75	0.362	0.0168
>EC10-EC12 Aromatics	mg/kg	1	(sol) 16,000#5	<1	40.2	3.9	111	11.2	<1
>EC12-EC16 Aromatics	mg/kg	1	(sol) 36,000#5	1.13	45.2	61.8	336	22.6	3.81
>EC16-EC21 Aromatics	mg/kg	1	28,000	10.1	53.6	329	1,040	96.8	28.6
>EC21-EC35 Aromatics	mg/kg	1	28,000	21.3	190	679	1,610	194	68.3
>EC35-EC44 Aromatics	mg/kg	1	28,000	1.14	25.9	108	211	27	9.9
>EC40-EC44 Aromatics	mg/kg	1	-	<1	7.75	20.6	38.9	5.17	1
>EC10-EC44 Aromatics	mg/kg	5	-	33.7	355	1,180	3,300	351	111
Total Aliphatics & Aromatics >C10-C44	mg/kg	10	-	33.7	1,400	1,200	3,330	359	111
TPH >C5-C44 Aliphatics/Aromatics	mg/kg	10	-	33.7	1,410	1,210	3,340	360	111
BTEX									
Benzene	mg/kg	0.001	27	<0.001	0.051	0.206	<0.02	<0.02	0.00236
Toluene	mg/kg	0.001	(vap) 56,000#7	0.00155	<0.02	<0.02	<0.02	<0.02	0.00249
Ethylbenzene	mg/kg	0.001	(vap) 5,700#7	<0.001	<0.065	<0.065	<0.065	<0.065	<0.005
Xylene (m & p)	mg/kg	0.002	(sol) 5,900#8	<0.01	<0.18	<0.165	<0.165	<0.165	<0.01
Xylene (o)	mg/kg	0.002	(sol) 6,660#5	<0.007	<0.13	<0.12	<0.125	<0.13	<0.007
Xylene Total	mg/kg	0.02	-	<0.02	<0.4	<0.4	<0.4	<0.4	<0.02
Total BTEX	mg/kg	0.007	-	<0.007	<0.14	0.206	<0.14	<0.14	<0.007
VOC									
MTBE	mg/kg	0.0005	-	<0.0005	<0.01	<0.01	<0.01	<0.01	<0.0005
Phenolics									
Xylenols (filtered)	mg/kg	0.015	-	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Cresol Total (filtered)	mg/kg	0.01	-	<0.01	<0.01	<0.01	0.0126	0.0119	<0.01
Phenol (filtered)	mg/kg	0.01	(dir) 760#9	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Phenols (filtered)	mg/kg	0.035	-	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035
Other									
Moisture	%		-	4.7	38	18	21	16	4.8
pH (Lab)	pH units	1	-	9.48	7.69	9.41	8.27	7.78	9.41
Soil Organic Matter	%	0.35	-	0.431	31.2	13.9	10.6	20.3	0.491

Comments

- #1 GAC is only presented as speciated chromium. 33mg/kg is used for hexavalent. If hexavalent chromium (CrVI) data is available, a value of 8,600mg/kg may be appropriate for the remaining trivalent chromium (CrIII).
- #2 C4SL for lead adopted
- #3 GAC only presented as speciated mercury. 58mg/kg is used for elemental mercury. If the CSM indicates that elemental mercury is not a CoC and mercury is present in an inorganic form, a value of 1,110mg/kg for inorganic mercury may be appropriate
- #4 Updated S4UL for nickel
- #5 S4UL exceeds solubility saturation limit
- #6 Criteria derived for Ali>C16-C35 split between Ali>C16-21 & Ali>C21-35. Requires summation of fractions to use Ali>C16-C35 criteria.
- #7 S4UL exceeds vapour saturation limit
- #8 S4UL exceeds solubility saturation limit. Criteria presented is for p-xylene. A separate value is presented for o-xylene.
- #9 S4UL based on a threshold protective of direct skin contact with phenol
- #10 GAC is only presented as speciated chromium. 220mg/kg is used for hexavalent. If hexavalent chromium (CrVI) data is available, a value of 33,000mg/kg may be appropriate for the remaining trivalent chromium (CrIII).
- #11 GAC only presented as speciated mercury. 30mg/kg is used for elemental mercury. If the CSM indicates that elemental mercury is not a CoC and mercury is present in an inorganic form, a value of 240mg/kg for inorganic mercury may be appropriate
- #12 Not Detected
- #13 Matrix interference
- #15 Detected

			TPH drinking water- WHO 2008/CL-AIRE 2017	UK Drinking Water Standards	Location			
					Matrix			
					Date			
					Depth (m)			
	Unit	MDL			C04	C06	C10	C24
					Soil	Soil Leachate	Soil Leachate	Soil Leachate
					20 Dec 2024	20 Dec 2024	20 Dec 2024	20 Dec 2024
					0.8 - 0.8	0.6 - 0.6	0.4 - 0.4	0.5 - 0.5
Metals								
Arsenic (filtered)	µg/l	0.5	-	10 ^{#1}	3.97	29.5	2.33	<0.5
Boron (filtered)	µg/l	10	-	1,000 ^{#1}	385	13.1	<10	<10
Cadmium (filtered)	µg/l	0.08	-	5 ^{#1}	<0.08	<0.08	<0.08	<0.08
Chromium (hexavalent) (filtered)	µg/l	30	-	-	<30	<30	<30	<30
Chromium (filtered)	µg/l	1	-	50 ^{#1}	<1	1.02	<1	<1
Copper (filtered)	µg/l	0.3	-	2,000 ^{#1}	9.51	14	4.51	0.835
Lead (filtered)	µg/l	0.2	-	10 ^{#1}	2.04	21	0.521	<0.2
Mercury (filtered)	µg/l	0.01	-	1 ^{#1}	0.0139	<0.01	<0.01	<0.01
Nickel (filtered)	µg/l	0.4	-	20 ^{#1}	2.11	1.53	1.01	<0.4
Selenium (filtered)	µg/l	1	-	10 ^{#1}	<1	1.66	<1	<1
Zinc (filtered)	µg/l	1	-	3,000 ^{#2}	4.38	3.68	2.25	<1
Inorganics								
Calcium (filtered)	mg/l	0.2	-	-	26.9	6.29	10.2	7.86
Cyanide (Free) (filtered)	µg/l	50	-	50 ^{#1}	<50	<50	<50	<50
PAH								
Naphthalene (filtered)	µg/l	0.01	-	-	0.0171	1.34	0.0633	0.565
Acenaphthene (filtered)	µg/l	0.005	-	-	<0.005	0.758	3.01	0.84
Acenaphthylene (filtered)	µg/l	0.005	-	-	<0.005	0.00593	0.0339	<0.005
Fluoranthene (filtered)	µg/l	0.005	-	-	<0.005	1.23	1.5	0.549
Anthracene (filtered)	µg/l	0.005	-	-	<0.005	0.292	0.45	0.251
Phenanthrene (filtered)	µg/l	0.005	-	-	0.00579	1.72	3.53	1.57
Fluorene (filtered)	µg/l	0.005	-	-	<0.005	0.449	1.13	0.378
Chrysene (filtered)	µg/l	0.005	-	-	<0.005	0.694	0.485	0.0391
Pyrene (filtered)	µg/l	0.005	-	-	<0.005	1.14	1.17	0.385
Benzo(a)anthracene (filtered)	µg/l	0.005	-	-	<0.005	0.536	0.359	0.0211
Benzo(b)fluoranthene (filtered)	µg/l	0.005	-	0.025 ^{#3}	<0.005	1.24	0.434	0.00504
Benzo(k)fluoranthene (filtered)	µg/l	0.005	-	0.025 ^{#3}	<0.005	0.479	0.193	<0.005
Benzo(a)pyrene (filtered)	µg/l	0.002	-	0.01 ^{#1}	<0.002	0.946	0.325	0.00275
Dibenz(a,h)anthracene (filtered)	µg/l	0.005	-	-	<0.005	0.13	0.0365	<0.005
Benzo(g,h,i)perylene (filtered)	µg/l	0.005	-	0.025 ^{#3}	<0.005	0.87	0.255	<0.005
Indeno(1,2,3-c,d)pyrene (filtered)	µg/l	0.005	-	0.025 ^{#3}	<0.005	0.712	0.167	<0.005
PAH 16 Total (filtered)	µg/l	0.082	-	-	<0.082	12.5	13.1	4.61
TPH CWG								
>C5-C6 Aliphatics	µg/l	10	15,000	See TPH	<10	<10	<10	<10
>C6-C8 Aliphatics	µg/l	10	15,000	See TPH	18	<10	<10	<10
>C8-C10 Aliphatics	µg/l	10	300	See TPH	56	<10	<10	<10
>C10-C12 Aliphatics	µg/l	10	300	See TPH	67	<10	<10	<10
>C12-C16 Aliphatics	µg/l	10	300	See TPH	<10	<10	<10	<10
>C16-C21 Aliphatics	µg/l	10	-	See TPH	<10	<10	<10	115
>C21-C35 Aliphatics	µg/l	10	-	See TPH	<10	<10	<10	99
>EC6-EC7 Aromatics	µg/l	10	1 as b ^{#22}	See TPH	<10	<10	<10	<10
>EC7-EC8 Aromatics	µg/l	10	700 as t ^{#23}	See TPH	<10	<10	<10	<10
>EC8-EC10 Aromatics	µg/l	10	300 as e ^{#24}	See TPH	39	<10	<10	<10
>EC10-EC12 Aromatics	µg/l	10	90	See TPH	45	<10	<10	<10
>EC12-EC16 Aromatics	µg/l	10	90	See TPH	<10	<10	<10	<10
>EC16-EC21 Aromatics	µg/l	10	90	See TPH	<10	<10	<10	<10
>EC21-EC35 Aromatics	µg/l	10	90	See TPH	<10	<10	<10	<10
Total Aromatics >EC12-EC35	µg/l	10	-	See TPH	<10	<10	<10	<10
TPH >C5-C35 Aliphatics/Aromatics	µg/l	10	-	See TPH	228	<10	<10	214
Total Aliphatics & Aromatics >C12-C35	µg/l	10	-	See TPH	<10	<10	<10	214
BTEX								
Benzene	µg/l	1	-	1 ^{#1}	<1	<1	<1	<1
Toluene	µg/l	1	-	700 ^{#5}	<1	<1	<1	<1
Ethylbenzene	µg/l	1	-	300 ^{#5}	<1	<1	<1	<1
Xylene (m & p)	µg/l	1	-	250 ^{#6}	<1	<1	<1	<1
Xylene (o)	µg/l	1	-	250 ^{#6}	<1	<1	<1	<1
Xylene Total	µg/l	2	-	500 ^{#5}	<2	<2	<2	<2
Total BTEX	µg/l	5	-	-	<5	<5	<5	<5
VOC								
MTBE	µg/l	1	-	15 ^{#7}	<1	<1	<1	<1
Phenolics								
Xylenols (filtered)	µg/l	8	-	-	<8	<8	<8	<8
Cresol Total (filtered)	µg/l	6	-	-	<6	<6	<6	<6
Phenol (filtered)	µg/l	2	-	5,800 ^{#8}	<2	<2	<2	<2
Total Phenols (filtered)	µg/l	16	-	-	<16	<16	<16	<16
Other								
Carbon (filtered)	µg/l	3,000	-	-	33,900	9,050	4,360	<3,000
Electrical conductivity *(lab)	µS/cm		-	-	322	163	103	54.9
pH (Lab) (filtered)	pH units	1	-	6.5-9.5 ^{#1}	8.06	9.51	8.17	9.45

Comments

#1 Water Supply (Water Quality) Regulations 2016.

#2 Guidelines for Drinking-water Quality, 4th Edition. WHO, 2011. Based on taste rather than a formal guideline.

#3 Water Supply (Water Quality) Regulations 2016. Value of 0.1µg/l for PAH split between four individual PAH. Requires summation of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene and indeno(123cd)pyrene to use 0.1µg/l value.

#4 No UK DWS for total petroleum hydrocarbons (TPH), or speciated TPH fractions. A value of 10 µg/l is adopted for sum TPH based on the rescinded Private Water Supply Regulations, 1991.

#5 Guidelines for Drinking-water Quality, 4th Edition. WHO, 2011

#6 Guidelines for Drinking-water Quality, 4th Edition. WHO, 2011. Value of 500µg/l for sum xylenes split between isomers. Requires summation of m,p & o isomers to use 500µg/l value.

#7 The taste and odour threshold of 15µg/l is commonly adopted as a guide.

#8 US EPA Regional Screening Levels, May 2019. <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables>

#9 Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015.

#10 Operational Targets and EQS. EA, April 2018

#11 Water Framework Directive (Standards & Classification) Directions (England & Wales) 2015. Dissolved fraction. Lowest criteria presented (<40mg/l of CaCO3). See 'further assessment' if criteria exceeded and hardness (CaCO3) data available.

#12 Water Framework Directive (Standards & Classification) Directions (England & Wales) 2015. Dissolved fraction.

#13 Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015. Dissolved Fraction. If hexavalent chromium (CrVI) data is available, a value of 4.7µg/l may be appropriate for the remaining trivalent chromium (CrIII).

#14 Water Framework Directive (Standards & Classification) Directions (England & Wales) 2015. Dissolved & bioavailable (bio) fraction plus background. M-BAT tool to assess: <http://wfd.uk.org/resources/rivers-lakes-metal-bioavailability-assessment-tool-m-bat>

#15 Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015. Dissolved Fraction. MAC adopted in absence of AA value.

#16 Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015. Benzo(a)pyrene can be considered as a marker for other PAH for comparison with the corresponding AA-EQS in water.

#17 No UK EQS for total petroleum hydrocarbons (TPH), or speciated TPH fractions. A value of 50 µg/l is adopted for sum TPH protection of surface water based on 50µg/l-1000µg/l (Surface Waters (Abstraction for Drinking Water) Regulations 1989).

#18 Proposed Environmental Quality Standard, in absence of legislative standard (Ayscough et al., 2002). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/291223/sp2-115-tr4-e-e.pdf

#19 Operational Targets and EQS. EA, April 2018. Value of 30µg/l for sum xylenes split between isomers. Requires summation of m,p & o isomers to use 30µg/l value.

#20 The taste and odour threshold of 15µg/l is commonly adopted as a guide. In situations where there is no risk to a drinking water supply or aquifer, a PNEC value of 5,100µg/l may be used.

#21 Operational Targets and EQS. EA, April 2018. Maximum Allowable Concentration (MAC) adopted in absence of Annual Average (AA) value.

Appendix G

Hazwaste Online Datasheets

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



KJMA4-QSRC3-CMR7W

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

Report is invalid if pages are removed.

Job name

Rochdale Station Square

Description/Comments

This assessment has been completed using HWOL files for the following laboratory reports:

- ALS - 241221-63 - 13/01/25
- ALS - 241221-65 - 25/02/25

All samples were tested for asbestos, no asbestos was detected in the samples.

This is not a standalone assessment and should be read in conjunction with any associated Arcadis reporting.

Project

30220231

Site

Rochdale Station Square

Classified by

Name: **Elizabeth Yeatman**
Date: **20 Mar 2025 10:14 GMT**
Telephone:
Company: **Arcadis Consulting (UK) Ltd**
10th Floor, 3 Piccadilly Place
Manchester
M1 3BN

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification
Most recent 3 year Refresher

Date

06 Dec 2018
11 Dec 2024

Next 3 year Refresher due by Dec 2027

Purpose of classification

2 - Material Characterisation

Address of the waste

Station Square, Rochdale

Post Code **OL11 1DR**

SIC for the process giving rise to the waste

43130 Test drilling and boring

Description of industry/producer giving rise to the waste

Public realm redevelopment

Description of the specific process, sub-process and/or activity that created the waste

Waste soils generated during redevelopment works

Description of the waste

Made Ground and natural soils

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	C10-201224-0.40-0.40		Hazardous	HP 3(i), HP 7, HP 11	3
2	C10-201224-0.60-0.60		Non Hazardous		6
3	C24-201224-0.50-0.50		Non Hazardous		9
4	C04-201224-0.30-0.30		Non Hazardous		12
5	C04-201224-0.80-0.80		Non Hazardous		15
6	C06-201224-0.60-0.60		Non Hazardous		18

Related documents

#	Name	Description
1	241221-63.hwol	ALS Hawarden .hwol file used to populate the Job
2	241221-65.hwol	ALS Hawarden .hwol file used to populate the Job

Report

Created by: Elizabeth Yeatman

Created date: 20 Mar 2025 10:14 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	21
Appendix B: Rationale for selection of metal species	22
Appendix C: Version	22

Classification of sample: C10-201224-0.40-0.40

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
C10-201224-0.40-0.40	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
21% (wet weight correction)	Entry:
	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.264%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.264%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.264%)

Determinands

Moisture content: 21% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	acenaphthene	201-469-6	83-32-9		36.1	mg/kg		28.519	mg/kg	0.00285 %	✓	
2	acenaphthylene	205-917-1	208-96-8		<0.6	mg/kg		<0.6	mg/kg	<0.00006 %		<LOD
3	anthracene	204-371-1	120-12-7		55.4	mg/kg		43.766	mg/kg	0.00438 %	✓	
4	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1			41.7	mg/kg	1.895	62.411	mg/kg	0.00624 %	✓	
5	benzo[a]anthracene	601-033-00-9	56-55-3		121	mg/kg		95.59	mg/kg	0.00956 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
6	benzene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
7	benzo[a]pyrene; benzo[def]chrysene				96.1 mg/kg		75.919 mg/kg	0.00759 %		✓	
	601-032-00-3	200-028-5	50-32-8								
8	benzo[b]fluoranthene				123 mg/kg		97.17 mg/kg	0.00972 %		✓	
	601-034-00-4	205-911-9	205-99-2								
9	benzo[ghi]perylene				46.2 mg/kg		36.498 mg/kg	0.00365 %		✓	
		205-883-8	191-24-2								
10	benzo[k]fluoranthene				44.1 mg/kg		34.839 mg/kg	0.00348 %		✓	
	601-036-00-5	205-916-6	207-08-9								
11	boron { boric acid; [1] boric acid; [2] }				8.77 mg/kg	5.719	39.624 mg/kg	0.00396 %		✓	
	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]								
12	cadmium { cadmium sulfate }				0.449 mg/kg	1.855	0.658 mg/kg	0.0000658 %		✓	
	048-009-00-9	233-331-6	10124-36-4								
13	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.6 mg/kg	2.27	<1.362 mg/kg	<0.000136 %			<LOD
	024-017-00-8										
14	chrysene				111 mg/kg		87.69 mg/kg	0.00877 %		✓	
	601-048-00-0	205-923-4	218-01-9								
15	copper { copper sulphate pentahydrate }				217 mg/kg	3.929	673.558 mg/kg	0.0674 %		✓	
	029-023-00-4	231-847-6	7758-99-8								
16	dibenz[a,h]anthracene				8.96 mg/kg		7.078 mg/kg	0.000708 %		✓	
	601-041-00-2	200-181-8	53-70-3								
17	ethylbenzene				<0.065 mg/kg		<0.065 mg/kg	<0.0000065 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	fluoranthene				334 mg/kg		263.86 mg/kg	0.0264 %		✓	
		205-912-4	206-44-0								
19	fluorene				28.9 mg/kg		22.831 mg/kg	0.00228 %		✓	
		201-695-5	86-73-7								
20	indeno[123-cd]pyrene				43.7 mg/kg		34.523 mg/kg	0.00345 %		✓	
		205-893-2	193-39-5								
21	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	79.3 mg/kg		62.647 mg/kg	0.00626 %		✓	
	082-001-00-6										
22	mercury { mercury }				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	080-001-00-0	231-106-7	7439-97-6								
23	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
24	naphthalene				148 mg/kg		116.92 mg/kg	0.0117 %		✓	
	601-052-00-2	202-049-5	91-20-3								
25	nickel { nickel dibromate }				69.3 mg/kg	5.358	293.352 mg/kg	0.0293 %		✓	
	028-053-00-5	238-596-1	14550-87-9								
26	pH		PH		8.27 pH		8.27 pH	8.27 pH			
27	phenanthrene				282 mg/kg		222.78 mg/kg	0.0223 %		✓	
		201-581-5	85-01-8								
28	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
29	pyrene				268 mg/kg		211.72 mg/kg	0.0212 %		✓	
		204-927-3	129-00-0								
30	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
31	toluene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
32	TPH (C6 to C40) petroleum group				3340 mg/kg		2638.6 mg/kg	0.264 %		✓	
			TPH								

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
33		zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }				98.6	mg/kg	4.398	342.572	mg/kg	0.0343 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
34		xylene				<0.29	mg/kg		<0.29	mg/kg	<0.000029 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
35		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				7.87	mg/kg	1.462	9.087	mg/kg	0.000909 %	✓	
		215-160-9	1308-38-9										
Total:									0.551 %				

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%) because: No free phase hydrocarbon identified during the investigation. Low levels of TPH in soils are extremely unlikely to present flammable properties.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.264%)

Classification of sample: C10-201224-0.60-0.60

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
C10-201224-0.60-0.60	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
16%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	83-32-9		1.84 mg/kg		1.546	mg/kg	0.000155 %	✓	
2	acenaphthylene	205-917-1	208-96-8		<0.06 mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
3	anthracene	204-371-1	120-12-7		2.19 mg/kg		1.84	mg/kg	0.000184 %	✓	
4	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1			20.5 mg/kg	1.895	32.624	mg/kg	0.00326 %	✓	
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	5.33 mg/kg		4.477	mg/kg	0.000448 %	✓	
6	benzene	601-020-00-8	200-753-7	71-43-2	<0.02 mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	4.53 mg/kg		3.805	mg/kg	0.000381 %	✓	
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	5.9 mg/kg		4.956	mg/kg	0.000496 %	✓	
9	benzo[ghi]perylene	205-883-8	191-24-2		2.31 mg/kg		1.94	mg/kg	0.000194 %	✓	
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	2.03 mg/kg		1.705	mg/kg	0.000171 %	✓	
11	boron { boric acid; [1] boric acid; [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]	7.85 mg/kg	5.719	37.712	mg/kg	0.00377 %	✓	
12	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4	0.0223 mg/kg	1.855	0.0347	mg/kg	0.00000347 %	✓	
13	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8			<0.6 mg/kg	2.27	<1.362	mg/kg	<0.000136 %		<LOD
14	chrysene	601-048-00-0	205-923-4	218-01-9	6.05 mg/kg		5.082	mg/kg	0.000508 %	✓	
15	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8	107 mg/kg	3.929	353.143	mg/kg	0.0353 %	✓	
16	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.453 mg/kg		0.381	mg/kg	0.0000381 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.065 mg/kg		<0.065 mg/kg	<0.0000065 %		<LOD
18	fluoranthene 205-912-4	206-44-0			13.6 mg/kg		11.424 mg/kg	0.00114 %	✓	
19	fluorene 201-695-5	86-73-7			1.5 mg/kg		1.26 mg/kg	0.000126 %	✓	
20	indeno[123-cd]pyrene 205-893-2	193-39-5			2.18 mg/kg		1.831 mg/kg	0.000183 %	✓	
21	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) } 082-001-00-6			1	33.9 mg/kg		28.476 mg/kg	0.00285 %	✓	
22	mercury { mercury } 080-001-00-0	231-106-7	7439-97-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X	216-653-1	1634-04-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
24	naphthalene 601-052-00-2	202-049-5	91-20-3		13.2 mg/kg		11.088 mg/kg	0.00111 %	✓	
25	nickel { nickel dibromate } 028-053-00-5	238-596-1	14550-87-9		52.4 mg/kg	5.358	235.852 mg/kg	0.0236 %	✓	
26	pH PH				7.78 pH		7.78 pH	7.78 pH		
27	phenanthrene 201-581-5	85-01-8			11.1 mg/kg		9.324 mg/kg	0.000932 %	✓	
28	phenol 604-001-00-2	203-632-7	108-95-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
29	pyrene 204-927-3	129-00-0			11.3 mg/kg		9.492 mg/kg	0.000949 %	✓	
30	selenium { nickel selenate } 028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
31	toluene 601-021-00-3	203-625-9	108-88-3		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
32	TPH (C6 to C40) petroleum group TPH				360 mg/kg		302.4 mg/kg	0.0302 %	✓	
33	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] } 030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		51.4 mg/kg	4.398	189.885 mg/kg	0.019 %	✓	
34	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.295 mg/kg		<0.295 mg/kg	<0.0000295 %		<LOD
35	chromium in chromium(III) compounds { chromium(III) oxide (worst case) } 215-160-9		1308-38-9		6.16 mg/kg	1.462	7.563 mg/kg	0.000756 %	✓	
Total:								0.126 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)
because: No free phase hydrocarbon identified during the investigation. Low levels of TPH in soils are extremely unlikely to present flammable properties.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0302%)

Classification of sample: C24-201224-0.50-0.50

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
C24-201224-0.50-0.50	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
4.8%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	Entry:

Hazard properties

None identified

Determinands

Moisture content: 4.8% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	acenaphthene	201-469-6	83-32-9		0.71	mg/kg		0.676	mg/kg	0.0000676 %	✓	
2	acenaphthylene	205-917-1	208-96-8		<0.12	mg/kg		<0.12	mg/kg	<0.000012 %		<LOD
3	anthracene	204-371-1	120-12-7		1.22	mg/kg		1.161	mg/kg	0.000116 %	✓	
4	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1			2.68	mg/kg	1.895	4.834	mg/kg	0.000483 %	✓	
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	3.66	mg/kg		3.484	mg/kg	0.000348 %	✓	
6	benzene	601-020-00-8	200-753-7	71-43-2	0.0023	mg/kg		0.0022	mg/kg	0.00000225 %	✓	
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	3.04	mg/kg		2.894	mg/kg	0.000289 %	✓	
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	3.84	mg/kg		3.656	mg/kg	0.000366 %	✓	
9	benzo[ghi]perylene	205-883-8	191-24-2		1.71	mg/kg		1.628	mg/kg	0.000163 %	✓	
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.36	mg/kg		1.295	mg/kg	0.000129 %	✓	
11	boron { boric acid; [1] boric acid; [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]	1.82	mg/kg	5.719	9.909	mg/kg	0.000991 %	✓	
12	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4	0.832	mg/kg	1.855	1.469	mg/kg	0.000147 %	✓	
13	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8			<0.6	mg/kg	2.27	<1.362	mg/kg	<0.000136 %		<LOD
14	chrysene	601-048-00-0	205-923-4	218-01-9	3.59	mg/kg		3.418	mg/kg	0.000342 %	✓	
15	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8	9.85	mg/kg	3.929	36.844	mg/kg	0.00368 %	✓	
16	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.338	mg/kg		0.322	mg/kg	0.000322 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
17	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
18	fluoranthene 205-912-4	206-44-0			8.56 mg/kg		8.149 mg/kg	0.000815 %	✓		
19	fluorene 201-695-5	86-73-7			0.514 mg/kg		0.489 mg/kg	0.0000489 %	✓		
20	indeno[123-cd]pyrene 205-893-2	193-39-5			1.92 mg/kg		1.828 mg/kg	0.000183 %	✓		
21	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) } 082-001-00-6			1	139 mg/kg		132.328 mg/kg	0.0132 %	✓		
22	mercury { mercury } 080-001-00-0	231-106-7	7439-97-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
23	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X	216-653-1	1634-04-4		<0.0005 mg/kg		<0.0005 mg/kg	<0.00000005 %			<LOD
24	naphthalene 601-052-00-2	202-049-5	91-20-3		0.177 mg/kg		0.169 mg/kg	0.0000169 %	✓		
25	nickel { nickel dibromate } 028-053-00-5	238-596-1	14550-87-9		6.34 mg/kg	5.358	32.341 mg/kg	0.00323 %	✓		
26	pH PH				9.41 pH		9.41 pH	9.41 pH			
27	phenanthrene 201-581-5	85-01-8			4.78 mg/kg		4.551 mg/kg	0.000455 %	✓		
28	phenol 604-001-00-2	203-632-7	108-95-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
29	pyrene 204-927-3	129-00-0			7.27 mg/kg		6.921 mg/kg	0.000692 %	✓		
30	selenium { nickel selenate } 028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
31	toluene 601-021-00-3	203-625-9	108-88-3		0.0024 mg/kg		0.0023 mg/kg	0.000000237 %	✓		
32	TPH (C6 to C40) petroleum group TPH				111 mg/kg		105.672 mg/kg	0.0106 %	✓		
33	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] } 030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		45.1 mg/kg	4.398	188.826 mg/kg	0.0189 %	✓		
34	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %			<LOD
35	chromium in chromium(III) compounds { chromium(III) oxide (worst case) } 215-160-9		1308-38-9		4.58 mg/kg	1.462	6.373 mg/kg	0.000637 %	✓		
Total:									0.0563 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)
because: No free phase hydrocarbon identified during the investigation. Low levels of TPH in soils are extremely unlikely to present flammable properties.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

benzene (conc.: 2.25e-07%)

toluene (conc.: 2.37e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0106%)

Classification of sample: C04-201224-0.30-0.30

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
C04-201224-0.30-0.30	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
4.7%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 4.7% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	83-32-9		0.0818 mg/kg		0.078	mg/kg	0.0000078 %	✓	
2	acenaphthylene	205-917-1	208-96-8		<0.012 mg/kg		<0.012	mg/kg	<0.0000012 %		<LOD
3	anthracene	204-371-1	120-12-7		0.0834 mg/kg		0.0795	mg/kg	0.00000795 %	✓	
4	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1			3.05 mg/kg	1.895	5.507	mg/kg	0.000551 %	✓	
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.368 mg/kg		0.351	mg/kg	0.0000351 %	✓	
6	benzene	601-020-00-8	200-753-7	71-43-2	<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.446 mg/kg		0.425	mg/kg	0.0000425 %	✓	
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.512 mg/kg		0.488	mg/kg	0.0000488 %	✓	
9	benzo[ghi]perylene	205-883-8	191-24-2		0.339 mg/kg		0.323	mg/kg	0.0000323 %	✓	
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.184 mg/kg		0.175	mg/kg	0.0000175 %	✓	
11	boron { boric acid; [1] boric acid; [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]	1.76 mg/kg	5.719	9.593	mg/kg	0.000959 %	✓	
12	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4	1.06 mg/kg	1.855	1.873	mg/kg	0.000187 %	✓	
13	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8			<0.6 mg/kg	2.27	<1.362	mg/kg	<0.000136 %		<LOD
14	chrysene	601-048-00-0	205-923-4	218-01-9	0.372 mg/kg		0.355	mg/kg	0.0000355 %	✓	
15	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8	8.73 mg/kg	3.929	32.689	mg/kg	0.00327 %	✓	
16	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.0486 mg/kg		0.0463	mg/kg	0.00000463 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
18	fluoranthene 205-912-4	206-44-0			0.778 mg/kg		0.741 mg/kg	0.0000741 %	✓	
19	fluorene 201-695-5	86-73-7			0.047 mg/kg		0.0448 mg/kg	0.00000448 %	✓	
20	indeno[123-cd]pyrene 205-893-2	193-39-5			0.301 mg/kg		0.287 mg/kg	0.0000287 %	✓	
21	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) } 082-001-00-6			1	56.2 mg/kg		53.559 mg/kg	0.00536 %	✓	
22	mercury { mercury } 080-001-00-0	231-106-7	7439-97-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X	216-653-1	1634-04-4		<0.0005 mg/kg		<0.0005 mg/kg	<0.00000005 %		<LOD
24	naphthalene 601-052-00-2	202-049-5	91-20-3		0.0281 mg/kg		0.0268 mg/kg	0.00000268 %	✓	
25	nickel { nickel dibromate } 028-053-00-5	238-596-1	14550-87-9		5.01 mg/kg	5.358	25.583 mg/kg	0.00256 %	✓	
26	pH PH				9.48 pH		9.48 pH	9.48 pH		
27	phenanthrene 201-581-5	85-01-8			0.443 mg/kg		0.422 mg/kg	0.0000422 %	✓	
28	phenol 604-001-00-2	203-632-7	108-95-2		<0.01 mg/kg		<0.01 mg/kg	<0.0000001 %		<LOD
29	pyrene 204-927-3	129-00-0			0.709 mg/kg		0.676 mg/kg	0.0000676 %	✓	
30	selenium { nickel selenate } 028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
31	toluene 601-021-00-3	203-625-9	108-88-3		0.0015 mg/kg		0.0014 mg/kg	0.000000148 %	✓	
32	TPH (C6 to C40) petroleum group TPH				33.7 mg/kg		32.116 mg/kg	0.00321 %	✓	
33	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] } 030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		43 mg/kg	4.398	180.223 mg/kg	0.018 %	✓	
34	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.017 mg/kg		<0.017 mg/kg	<0.00000017 %		<LOD
35	chromium in chromium(III) compounds { chromium(III) oxide (worst case) } 215-160-9		1308-38-9		3.59 mg/kg	1.462	5 mg/kg	0.0005 %	✓	
Total:								0.0355 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)
because: No free phase hydrocarbon identified during the investigation. Low levels of TPH in soils are extremely unlikely to present flammable properties.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene (conc.: 1.48e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00321%)

Classification of sample: C04-201224-0.80-0.80

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
C04-201224-0.80-0.80	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
38%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 38% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	acenaphthene	201-469-6	83-32-9		0.0196 mg/kg		0.0122 mg/kg	0.00000122 %	✓	
2	acenaphthylene	205-917-1	208-96-8		<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<LOD
3	anthracene	204-371-1	120-12-7		<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %		<LOD
4	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1			5.71 mg/kg	1.895	6.707 mg/kg	0.000671 %	✓	
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.0698 mg/kg		0.0433 mg/kg	0.00000433 %	✓	
6	benzene	601-020-00-8	200-753-7	71-43-2	0.051 mg/kg		0.0316 mg/kg	0.00000316 %	✓	
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.0516 mg/kg		0.032 mg/kg	0.0000032 %	✓	
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.0807 mg/kg		0.05 mg/kg	0.000005 %	✓	
9	benzo[ghi]perylene	205-883-8	191-24-2		<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.0231 mg/kg		0.0143 mg/kg	0.00000143 %	✓	
11	boron { boric acid; [1] boric acid; [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]	10.4 mg/kg	5.719	36.877 mg/kg	0.00369 %	✓	
12	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4	0.0865 mg/kg	1.855	0.0995 mg/kg	0.00000995 %	✓	
13	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8			<6 mg/kg	2.27	<13.62 mg/kg	<0.00136 %		<LOD
14	chrysene	601-048-00-0	205-923-4	218-01-9	0.0625 mg/kg		0.0387 mg/kg	0.00000388 %	✓	
15	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8	17 mg/kg	3.929	41.412 mg/kg	0.00414 %	✓	
16	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
17	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.065 mg/kg		<0.065 mg/kg	<0.0000065 %			<LOD
18	fluoranthene 205-912-4	206-44-0			0.135 mg/kg		0.0837 mg/kg	0.00000837 %	✓		
19	fluorene 201-695-5	86-73-7			<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
20	indeno[123-cd]pyrene 205-893-2	193-39-5			0.0356 mg/kg		0.0221 mg/kg	0.00000221 %	✓		
21	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) } 082-001-00-6			1	44.3 mg/kg		27.466 mg/kg	0.00275 %	✓		
22	mercury { mercury } 080-001-00-0	231-106-7	7439-97-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
23	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X	216-653-1	1634-04-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
24	naphthalene 601-052-00-2	202-049-5	91-20-3		0.0278 mg/kg		0.0172 mg/kg	0.00000172 %	✓		
25	nickel { nickel dibromate } 028-053-00-5	238-596-1	14550-87-9		11 mg/kg	5.358	36.544 mg/kg	0.00365 %	✓		
26	pH PH				7.69 pH		7.69 pH	7.69 pH			
27	phenanthrene 201-581-5	85-01-8			0.118 mg/kg		0.0732 mg/kg	0.00000732 %	✓		
28	phenol 604-001-00-2	203-632-7	108-95-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
29	pyrene 204-927-3	129-00-0			0.142 mg/kg		0.088 mg/kg	0.0000088 %	✓		
30	selenium { nickel selenate } 028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
31	toluene 601-021-00-3	203-625-9	108-88-3		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
32	TPH (C6 to C40) petroleum group TPH				1410 mg/kg		874.2 mg/kg	0.0874 %	✓		
33	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] } 030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		30.3 mg/kg	4.398	82.619 mg/kg	0.00826 %	✓		
34	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.31 mg/kg		<0.31 mg/kg	<0.000031 %			<LOD
35	chromium in chromium(III) compounds { chromium(III) oxide (worst case) } 215-160-9		1308-38-9		3.34 mg/kg	1.462	3.027 mg/kg	0.000303 %	✓		
Total:									0.113 %		

Key	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)
because: No free phase hydrocarbon identified during the investigation. Low levels of TPH in soils are extremely unlikely to present flammable properties.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

benzene (conc.: 3.16e-06%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0874%)

Classification of sample: C06-201224-0.60-0.60

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
C06-201224-0.60-0.60	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
18%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	83-32-9		9.74 mg/kg		7.987	mg/kg	0.000799 %	✓	
2	acenaphthylene	205-917-1	208-96-8		<0.12 mg/kg		<0.12	mg/kg	<0.000012 %		<LOD
3	anthracene	204-371-1	120-12-7		11.3 mg/kg		9.266	mg/kg	0.000927 %	✓	
4	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1			39.3 mg/kg	1.895	61.053	mg/kg	0.00611 %	✓	
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	22.5 mg/kg		18.45	mg/kg	0.00184 %	✓	
6	benzene	601-020-00-8	200-753-7	71-43-2	0.206 mg/kg		0.169	mg/kg	0.0000169 %	✓	
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	17.5 mg/kg		14.35	mg/kg	0.00144 %	✓	
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	22.7 mg/kg		18.614	mg/kg	0.00186 %	✓	
9	benzo[ghi]perylene	205-883-8	191-24-2		8.74 mg/kg		7.167	mg/kg	0.000717 %	✓	
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	8.35 mg/kg		6.847	mg/kg	0.000685 %	✓	
11	boron { boric acid; [1] boric acid; [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]	4.61 mg/kg	5.719	21.62	mg/kg	0.00216 %	✓	
12	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4	0.0487 mg/kg	1.855	0.0741	mg/kg	0.00000741 %	✓	
13	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8			<0.6 mg/kg	2.27	<1.362	mg/kg	<0.000136 %		<LOD
14	chrysene	601-048-00-0	205-923-4	218-01-9	22.9 mg/kg		18.778	mg/kg	0.00188 %	✓	
15	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8	62.7 mg/kg	3.929	202.008	mg/kg	0.0202 %	✓	
16	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	1.78 mg/kg		1.46	mg/kg	0.000146 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.065 mg/kg		<0.065 mg/kg	<0.0000065 %		<LOD
18	fluoranthene 205-912-4	206-44-0			59.6 mg/kg		48.872 mg/kg	0.00489 %	✓	
19	fluorene 201-695-5	86-73-7			6.15 mg/kg		5.043 mg/kg	0.000504 %	✓	
20	indeno[123-cd]pyrene 205-893-2	193-39-5			9.78 mg/kg		8.02 mg/kg	0.000802 %	✓	
21	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) } 082-001-00-6			1	170 mg/kg		139.4 mg/kg	0.0139 %	✓	
22	mercury { mercury } 080-001-00-0	231-106-7	7439-97-6		0.33 mg/kg		0.271 mg/kg	0.0000271 %	✓	
23	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X	216-653-1	1634-04-4		<0.01 mg/kg		<0.01 mg/kg	<0.0000001 %		<LOD
24	naphthalene 601-052-00-2	202-049-5	91-20-3		4.3 mg/kg		3.526 mg/kg	0.000353 %	✓	
25	nickel { nickel dibromate } 028-053-00-5	238-596-1	14550-87-9		18.1 mg/kg	5.358	79.528 mg/kg	0.00795 %	✓	
26	pH PH				9.41 pH		9.41 pH	9.41 pH		
27	phenanthrene 201-581-5	85-01-8			50.2 mg/kg		41.164 mg/kg	0.00412 %	✓	
28	phenol 604-001-00-2	203-632-7	108-95-2		<0.01 mg/kg		<0.01 mg/kg	<0.0000001 %		<LOD
29	pyrene 204-927-3	129-00-0			47.9 mg/kg		39.278 mg/kg	0.00393 %	✓	
30	selenium { nickel selenate } 028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
31	toluene 601-021-00-3	203-625-9	108-88-3		<0.02 mg/kg		<0.02 mg/kg	<0.0000002 %		<LOD
32	TPH (C6 to C40) petroleum group TPH				1210 mg/kg		992.2 mg/kg	0.0992 %	✓	
33	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] } 030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		47.5 mg/kg	4.398	171.299 mg/kg	0.0171 %	✓	
34	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.285 mg/kg		<0.285 mg/kg	<0.0000285 %		<LOD
35	chromium in chromium(III) compounds { chromium(III) oxide (worst case) } 215-160-9		1308-38-9		7.85 mg/kg	1.462	9.408 mg/kg	0.000941 %	✓	
Total:								0.193 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)
because: No free phase hydrocarbon identified during the investigation. Low levels of TPH in soils are extremely unlikely to present flammable properties.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

benzene (conc.: 0.00001%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0992%)

Appendix A: Classifier defined and non GB MCL determinands

■ **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Aquatic Chronic 2; H411

■ **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302, Acute Tox. 1; H330, Acute Tox. 1; H310, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315

■ **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

■ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

■ **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

■ **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

■ **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

■ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2; H351

■ **lead compounds with the exception of those specified elsewhere in this Annex (worst case)**

GB MCL index number: 082-001-00-6

Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

■ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

■ **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

■ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

■ **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

arsenic {arsenic acid and its salts with the exception of those specified elsewhere in this Annex}

Worst case species.

boron {boric acid; [1] boric acid; [2]}

Boron tribromide and trichloride react violently with water so are unlikely to be present in the waste. Next worst case selected.

cadmium {cadmium sulfate}

Worst case species.

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species.

copper {copper sulphate pentahydrate}

Worst case species.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

There isn't enough lead and Cr(VI) to make lead chromate. Next worst case selected.

mercury {mercury}

Worst case species.

nickel {nickel dibromate}

Worst case species.

selenium {nickel selenate}

Worst case species.

zinc {zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2]}

There isn't enough zinc and Cr(VI) to make zinc chromate. Next worst case selected.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Worst case species.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021

HazWasteOnline Classification Engine Version: 2025.65.6483.11817 (06 Mar 2025)

HazWasteOnline Database: 2025.65.6483.11817 (06 Mar 2025)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

GB MCL List v2.0 - version 2.0 of 20th October 2023

GB MCL List v3.0 - version 3.0 of 11th January 2024

GB MCL List v4.0 - version 4.0 of 2nd March 2024

GB MCL List v5.0 - version 5.0 of 26th June 2024

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