

PROPOSED MFG EV POWER SITE DEVELOPMENT AT DERBY GARAGE, BURY, BL9 9NS

Preliminary Land Quality Risk Assessment
Prepared for: MFG EV Power Ltd

SLR Ref: 427.12665.00001
Version No: Issue
December 2021



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1.0 Introduction

1.1 Context and Terms of Reference

SLR Consulting Limited (SLR) was commissioned by MFG EV Power Limited (MFG) to undertake a Preliminary Land Quality Risk Assessment (PLQRA) in support of their proposed development of an EV Power service station site on the former Derby Garage Service Station, Manchester Road, Bury BL9 9NS (the 'Site').

This report presents the findings of the PLQRA, collating information with respect to the Site's environmental setting, land use history and previous environmental investigation reports in order to assess the potential for contamination. The report has been prepared to evaluate the suitability of the Site for redevelopment.

This report has been prepared in accordance with the terms and conditions of the SLR-MFG memorandum of agreement dated 1st February 2019.

1.2 Background and Objectives

SLR understands that the MFG is proposing to redevelop the Site to an EV-charging service station. This will include the dismantling and removal of the redundant petrol service station infrastructure and building on-site and its replacement with 8 (no.) 150kW charging bays, beneath a canopy, a shop/sales building and a jet wash. The EV charging units also require a DNO HV/LV substation and associated infrastructure to be built on-site.

The proposed development layout is shown on a drawing presented in Appendix 01.

The objective of this desk-based assessment is to summarise the available relevant information to establish potential risks to human and environmental receptors presented by the former service station site, i.e. the environmental condition of the Site, presence of any historic or recent soil and groundwater contamination, any other notable matters of environmental risk and assess the potential suitability for its redevelopment for EV-charging station.

1.3 Sources of Information

SLR has collected and reviewed various reports and maps to characterise the site and its surrounds including:

- Proposed Site Plan prepared to illustrate the development and layout plan for the Site (Appendix 01)
- A Groundsure "Enviro and Geo Insight" report on Site conditions dated December 2021 (Appendix 02);
- Historical Ordnance Survey Mapping (Appendix 03);
- Environmental Information provided on the MAGIC website;
- Information provided on the British Geological Survey website; and
- Copies of previous environmental investigations and groundwater monitoring reports and quantitative risk assessments associated with the previous operation of the Site.

The information from the above sources is reviewed and summarised within the following sections of this report.

2.0 Site Information

2.1 Site Description

The Site that is the subject of this planning application is outlined in red in Figure 2-1 below and comprises the disused petrol station and forecourt with a former sales building to the western side and a canopy above the forecourt. The dispenser pumps have been removed but the underground pipelines, former fuel storage tanks and drainage infrastructure remain in-situ.

Figure 2-1: Aerial Photograph of the Site



2.2 Site Details

The following tables summarise the details of the Site, its history and setting. The information populating Tables 2-1 to 2-3 has been derived from a desk-based review of existing and published information, an inspection and walkover completed in July 2019 and subsequent groundwater monitoring visits in 2020 and 2021.

2.2.1 Site Details and Use

Table 2-1 – Site Details and Use

Site Address	Former Derby Garage, Manchester Road, Bury, BL9 9NS																																													
National Grid Reference	380470 408777																																													
Site Area	0.09 Hectares (approximately).																																													
Current Site Use	The Site is currently a disused former petrol filling station.																																													
Site Details	Buildings	The Site has one permanent single storey brick built, flat roofed shop building along the western boundary.																																												
	External areas	The forecourt is covered with a canopy and the Site is surfaced with asphalt; the dispenser pumps and islands have been removed. There is a low wall and hedge forming a boundary to Manchester Road and the remaining boundaries are enclosed with Herras fencing.																																												
	Drainage system	It is understood that the Site has separate surface water and foul water drainage to adopted sewer systems. There is an oil water interceptor in the north-east corner of the Site.																																												
	Underground storage tanks	Ten underground fuel storage tanks are understood to be present on the Site. The following details are taken from previous environmental reports and details the Site when last operational in 2017: <table border="1"> <thead> <tr> <th>Tank No.</th><th>Contents</th><th>Capacity (Litres)</th><th>Date Installed</th></tr> </thead> <tbody> <tr><td>1</td><td>Petrol</td><td>34,960</td><td>30/06/1985</td></tr> <tr><td>2</td><td>Petrol</td><td>9,310</td><td>30/06/1985</td></tr> <tr><td>3</td><td>Petrol</td><td>17,860</td><td>30/06/1985</td></tr> <tr><td>4</td><td>Petrol</td><td>9,310</td><td>30/06/1985</td></tr> <tr><td>5</td><td>Petrol</td><td>17,860</td><td>30/06/1985</td></tr> <tr><td>6</td><td>Diesel</td><td>9,310</td><td>30/06/1985</td></tr> <tr><td>7</td><td>Diesel</td><td>9,310</td><td>30/06/1985</td></tr> <tr><td>8</td><td>Diesel (LRP)</td><td>9,310</td><td>30/06/1985</td></tr> <tr><td>9</td><td>Diesel</td><td>9,310</td><td>30/06/1985</td></tr> <tr><td>10</td><td>Diesel (LRP)</td><td>9,310</td><td>30/06/1985</td></tr> </tbody> </table> Tanks 7 & 8 are located immediately north-east of the shop building, the remaining 8 tanks are located to the south and south-east of the shop building. Further historic information indicated that in 2000 Tanks 8 and 10 stored LRP (Lead Replacement Petrol).		Tank No.	Contents	Capacity (Litres)	Date Installed	1	Petrol	34,960	30/06/1985	2	Petrol	9,310	30/06/1985	3	Petrol	17,860	30/06/1985	4	Petrol	9,310	30/06/1985	5	Petrol	17,860	30/06/1985	6	Diesel	9,310	30/06/1985	7	Diesel	9,310	30/06/1985	8	Diesel (LRP)	9,310	30/06/1985	9	Diesel	9,310	30/06/1985	10	Diesel (LRP)	9,310
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Site Address	Former Derby Garage, Manchester Road, Bury, BL9 9NS	
Surrounding Land Use	North	Semi-detached 1920s housing lies across the access road 10m to the north; older, probably Victorian housing and a former school beyond to >100m.
	South	Around 10m south is a commercial building operated as a vets, but historically may have been a retail showroom or similar. Semi-detached 1920s housing lies beyond lining Manchester Road.
	East	Semi-detached 1920s housing lies across Manchester Road 25m to the east; continues for >100m.
	West	Victorian factory premises and open yards to >100m.

2.2.2 Site History

The Site history in Table 2-2 is based on a review of historical maps (Appendix 02), Google internet searches and information included within the previous report (Section 2.3).

Table 2-2 – Site History

Dates	Site History
1851 (1:10,560)	The Site comprised undeveloped land, possibly in agricultural use, to west side of a road; with a small lane adjacent to the north; a small <i>Workhouse</i> was present 20m off-site to west. Surroundings resembled agricultural fields.
1890 & 1910	The Site remains undeveloped, with housing to west, a <i>Timber Yard</i> 10m to the north-west; <i>Derby Works (Building Materials)</i> adjacent to west and 10m south-west; the works include terraced housing 30m west; terraced housing and a school 50m north. There is a tramway in Manchester Road adjacent to the east. Land to the south and east within 100m remains undeveloped.
1930 & 1937 (1:10560 scale)	The Site remains undeveloped, houses are present in present day location to north and east; land to the south remains undeveloped. The factory to the east is now named <i>Redvales Tannery</i> with a number of <i>tanks</i> labelled within the works (south-west of the Site) and a sludge bed and small spoil heap 100m to the west (adjacent the Tannery).
1957 & 1958 & 1969 (1:10560)	The Site is developed with a layout resembling a petrol station with a kiosk and pump island towards the centre of the Site and two small buildings one in each of the north-west and south-west corners. The timber yard to the north-west is now named <i>Derby Garage</i> and the Tannery is now <i>Derby Works (Rubber)</i> with <i>Tanks</i> adjacent its southern boundary. The previous buildings remain in use, but the sludge bed is no longer shown. The plot immediately south remains undeveloped and there are no changes to surrounding land use.
1971, 1975 & 1984	No visible change to the Site; the plot adjacent to the south has been developed to resemble its present day layout. No other notable changes to the surrounding land uses other than the school 50m north is now labelled as a <i>Community Centre</i> .

Dates	Site History
1987, 1992 1995 & 2003.	The petrol station on-site has been rebuilt to resemble its current layout. The housing within <i>Derby Works</i> is no longer shown and is replaced by a new building. Other surrounding land uses remain unchanged.
2005, 2013, & 2017 (aerial photographs)	No visible changes to the Site or its operation. New workshop buildings and hardstanding are visible off-site to the north-west on the Garage site (2003 to 2005).

In summary, the mapping suggests that the Site was first developed as a petrol station in the 1950s and was rebuilt in the 1980s.

The Site is located adjacent to and upgradient from Derby Works which has a long history of industrial activity.

2.2.3 Site Setting

The Sites' setting including geography, geology, hydrogeology and hydrology is summarised in Table 2-3.

Table 2-3 – Site Setting

Site Address	Former Derby Garage, Manchester Road, Bury, BL9 9NS	
Geography and Hydrology	Topography and Gradient	The Site slopes downwards to the south or south-west at a steady gradient of around 2%.
	Elevation	Approx. 79mAOD.
	Surface Water	The Site lies immediately west of a WFD catchment boundary between the River Roch and River Irwell, and is in the catchment of the Irwell that flows southwards, 380m to the south-west of the Site.
	Flood Risk	The Site does not lie within an area at risk of river or coastal flooding; nor is it in an area at risk of surface water flooding.
Geology and Hydrogeology	Geology	The superficial geology is recorded as Till (Diamicton) of Devensian age. Borehole records near Wordsworth Avenue 75m east record >7m of superficial deposits in the area. The solid geology is recorded as the Trencherbone Rock, a sandstone unit within the Lower Coal Measures Formation.
	Aquifer status	The Till is classed as a secondary (undifferentiated) aquifer. The Lower Coal Measures Formation is classed as a secondary A aquifer. The groundwater vulnerability at the Site is classified as low. This means that the geology provides protection from pollution. It is likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability The Site is not recorded as lying within a groundwater Source Protection Zone (SPZ).

Site Address	Former Derby Garage, Manchester Road, Bury, BL9 9NS	
	Abstractions (within 1km)	There are no active groundwater abstraction permits within 1km of the Site. There is an historical permit associated with a well point system for pollution remediation on-site. The nearest active permit is for spray irrigation at Bury Golf Club 1200m south-east.
Other including permits, pollution incidents, landfills, ecological designations etc.	There are no COMAH regulated premises within 500m of the Site. There was an historical Lower Tier COMAH operation 426m south-west of the site. There are no Part A1 industrial activities requiring regulation under the Environmental Permitting Regulations (England and Wales) 2016 within 500m of the Site. There are 3 Part A(2)/B industrial activities requiring regulation under the Environmental Permitting Regulations (England and Wales) 2016 within 500m of the Site. These comprise the Site itself for unloading petrol into storage tanks; Melba Swintex at Derby works for Coating processes (Historical permit) and for Coating Processes 300m south also an Historical permit. Seven current permits for licensed discharges to controlled waters are recorded within 500m of the Site; all are for sewer overflow (for the water undertaker) and one is for the discharge of treated sewage. There are no active or historical landfill sites within 500m of the Site. The only record is of a refuse tip on mapping 450m west of the Site. There is one licensed waste site located 420m south-west that was surrendered in 2007. This was a materials treatment facility operated by Roydon Polythene. No sites have been designated as 'Contaminated Land' within 500m of the Site. No sites with ecological or nature conservation designation are located within 500m of the Site. The Site lies within an area where Radon Protection Measures are not required.	

3.0 Previous Assessment Work

3.1 Previous Assessments

The Site, as Derby Garage, has been subject to several phases of previous assessment work and engineered remedial action, which are listed in Table 3-1 and summarised below.

The driver for all the investigations has been to establish baseline soil and groundwater impact arising from historic and current petroleum storage activities across the Site; to delineate and monitor evolution of any impacts from recorded fuel release incidents and to remediate impacts in order to ensure that the Site is returned to a condition suitable for continued petroleum or similar commercial uses.

Table 3-1: Previous Assessment Reports

Date	Document Title and Author
October 2000	Incident Response Report. Project No. 94095. Prepared for TotalFina GB Limited by Arcadis Geraghty and Miller International.
December 2000	Site Assessment Report, prepared for TotalFina Great Britain Limited, Ref. Fi00061 CL 002. by Subadra Limited.
February 2001	Quantitative Risk Assessment Report, prepared for TotalFina Great Britain Limited, Ref. Fi00061 CL 009 by Subadra Limited.
February 2001	Remedial Action Plan Report, prepared for TotalFina Great Britain Limited, Ref. Fi00061 CL 010 by Subadra Limited.
June 2006	Remedial Works – Data Summary prepared for TotalFina Great Britain Limited, Ref. Fi00061 CL 010 by Subadra Limited.
September 2008	Environmental Site Assessment Report, prepared for Total UK Limited, Ref. 22867-1 (02) by RSK Group plc.
March 2009	Detailed Quantitative Risk Assessment Report, prepared for Total UK Limited, Ref. 22867-R02 by RSK Group plc.
November 2009	LNAPL Characterisation Study Report, prepared for Total UK Limited, Ref. 170328 by REMEDX (part of RSK Group plc).
September 2010	Additional Site Investigation Report, prepared for Total UK Limited, Ref. 170410-01 by RSK Group plc.
June 2011	Groundwater Quality Monitoring Report, prepared for Total UK Limited, Ref. 170410-03 by RSK Group plc.
June 2012	Remediation Completion Report, prepared for Rontec Limited, Ref. 170439 by REMEDX (part of RSK Group plc).
July 2012	Vapour Risk Assessment and Validation Report, prepared for Rontec Watford Limited, Ref. 170410-01 by RSK Group plc.
May 2017	Incident Report, Derby Garage, Bury prepared for Spring Petroleum Limited by LCM Environmental
September 2017	Site Investigation & Remediation Summary Report. Derby Garage Service Station. WSP Report Reference 70033843-R01
December 2017	Derby Garage Service Station Update. WSP Letter 70033843-003 EHO L02

Date	Document Title and Author
December 2017	Soil Vapour Extraction Pilot Trial. Derby Garage Service Station. WSP Report Reference 70033843-003 R01
September 2018	Derby Garage Service Station – Operational Update – August 2018. WSP Remediation
February 2018	Human Health and Controlled Waters Assessment. Derby Garage Service Station. WSP Report Reference 70033843-003
December 2018	Phase I Report. Derby Garage Service Station. WSP Report Reference 70033843-004
May 2019	DQRA Addendum. Derby Garage Service Station. WSP Report Reference 70033843-004

The site investigations described above have resulted in the excavation of 41 boreholes across the former petrol station site. Two plans of the borehole locations across the Site; (one dating from 2012 and one from 2017) are included in Appendix 04.

3.2 Previously Reported Containment Failures

3.2.1 Unleaded petrol leak in 2000

Reports by Subadra and Arcadis dated 2000 and 2001 record that the petrol station suffered a containment failure. The information on the product released and volume appear somewhat contradictory; but in their 2006 Data Summary report, Subadra recorded that 2200 litres of unleaded petrol was released from Tank 5 between March and October 2000 and light non-aqueous phase liquid (LNAPL) impact was recorded in monitoring wells installed by Subadra. In October 2000 “petrol fumes” were reported in the drainage system of Swintex who operated the adjacent Derby Works. In their June 2012 report for Rontec, RemedX reported the estimated loss volume that occurred in 2000 to be 2,560 litres due to a leak in an underground storage tank (Tank 5 UL) and a line failure (Line 5 UL).

3.2.2 Unleaded petrol leak in 2017

On 10th April 2017, a total of 11,000 litres of super unleaded petrol was reported to have been lost to ground following a failure from Tank 3 located in the southern part of the Site. Emergency response recovery works were commenced by LCM and WSP following the loss, and further monitoring, investigation, assessment and remediation was subsequently completed by WSP.

Note that Tank 5 and Tank 3 occupy a similar location on-site; therefore, the source area for both releases was likely to have been similar. SLR understands that the Site was closed shortly after the 2017 leak; all products were uplifted from the underground tanks, the tanks were water-filled and the Site has remained non-operational since that time.

3.3 Previously Recorded Geology

Geology encountered on site during the intrusive works completed between 2000 and 2017 comprised:

- Made Ground - Dark brown to orange-brown clayey sandy gravel with occasional ash, concrete and brick. Thickness is quite variable (SLR suspect that in some boreholes a natural superficial deposit of sand was logged as made ground) probably between 0.8m and 3m thick; locally to 4.2m around the tank farm.
- Superficial Strata - Orange brown sandy fine to coarse gravel with occasional cobbles from 1.3 to 3m thick underlain by brown to grey sandy clay with interbedded sand and gravel beds to depths of over 6.45m.

- Bedrock – not encountered.

3.4 Previously Recorded Hydrogeology

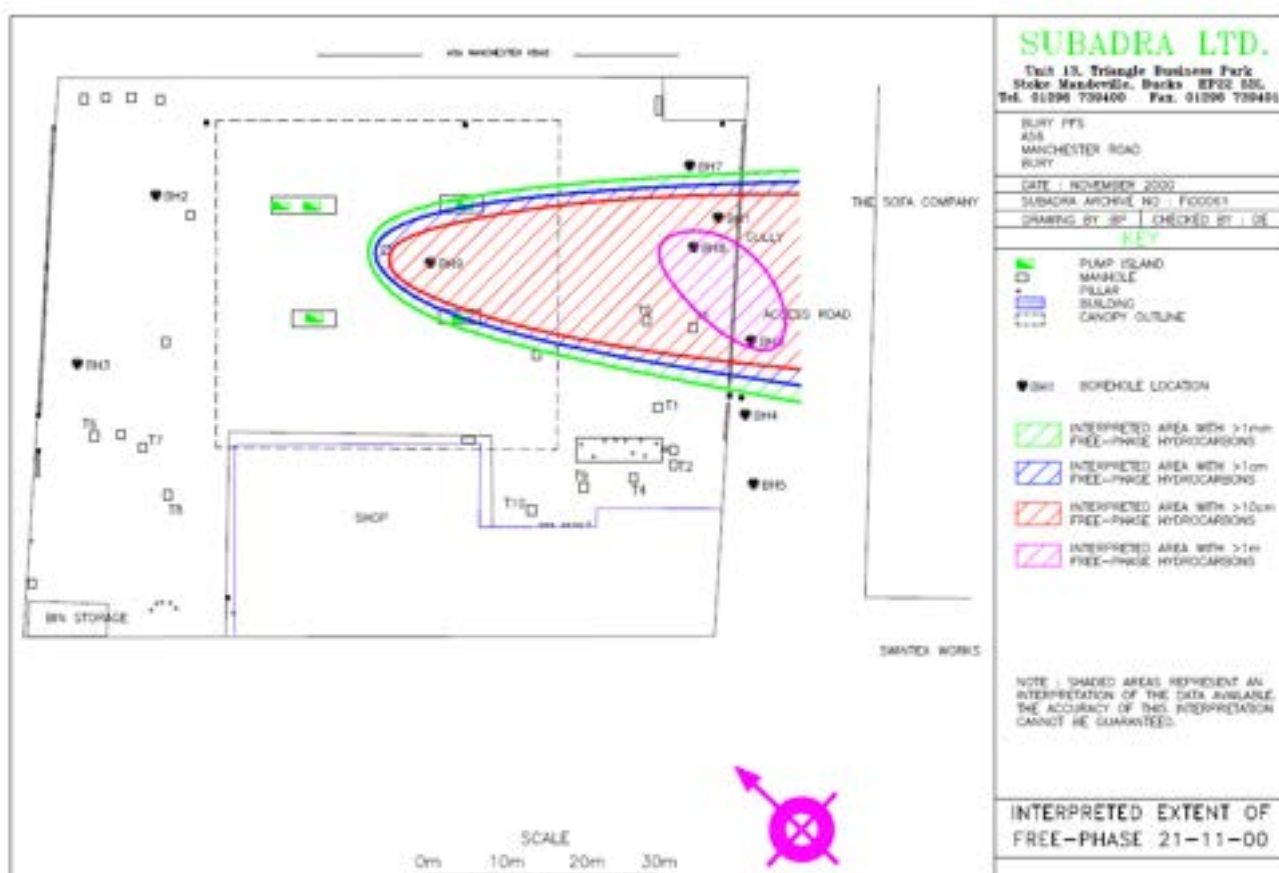
The previous ground investigations have resulted in the installation of a network of groundwater monitoring wells across the Site. The previous monitoring results indicate that groundwater is present within the base of the Made Ground or superficial strata typically between 3m and 4.2m below ground level. The RSK groundwater monitoring data in 2017 indicated that the hydraulic gradient falls to the south-west towards the River Irwell at a gradient of around 0.3%.

3.5 Previously Recorded Hydrocarbon Impact

3.5.1 Spill Response, Investigation and Remediation by Subadra 2000 to 2006.

The Subadra reports do not contain borehole logs or soil analysis so the nature and extent of the hydrocarbon impact to soils cannot be estimated. According to RSK, Subadra described the installation of nine groundwater monitoring wells on-site and six remedial wells (RW1 to RW6) were installed just off-site to the southern side of the access road shared with Melba Swintex. Monitoring in November 2000 recorded LNAPL in three wells: BH9 located to the centre of the forecourt and in BH6 and BH8, located either side of Tank 5 on the southern part of the Site. A snapshot of Drawing 5 from the Subadra report is provided in Figure 3-1 below.

Figure 3-1: Subadra Interpretation of LNAPL impact November 2000



Subadra reported operation of a mobile SVE trailer extracting petrol vapour from BH1 through November 2000; and estimated it recovered approximately 1,000 litres equivalent of petrol over that time period.

During December 2000, Subadra Ltd installed a groundwater 'pump and treat' remedial system at the Site, configured to abstract simultaneously from wells located down gradient of the forecourt (RW1 – RW6). Details of the installation and performance of this activity are limited. During routine monitoring Subadra reported finding a clear viscous 'syrup' like liquid in two of the remedial wells. Laboratory analysis indicated that phthalates were also present in the groundwater; Swintex advised Subadra that they had formerly used phthalates in their manufacturing process.

The phthalates "fouled" the remedial wells/system installed by Subadra and no further remedial works were undertaken.

3.5.2 Investigation, Risk Assessment & Remediation by RSK & RemedX 2008 to 2012

Between 2008 and 2012 RSK and RemedX undertook the following:

- Monitored the existing groundwater wells and completed further assessment of the remedial work completed by Subadra;
- Completed a detailed quantitative risk assessment;
- Completed an LNAPL Characterisation study;
- Undertook delineation investigations and installed additional monitoring wells;
- RemedX (part of RSK) undertook a second phase of remedial work using multiple phase extraction techniques (MPE); effectively total fluids pumping and treatment of entrained petrol vapour, LNAPL and petrol-impacted groundwater and provided a Remediation Completion Report; and,
- RSK undertook installation of 3 (no.) soil vapour monitoring wells and completed a round of groundwater sampling on 18 of the 20 groundwater monitoring wells.

As a result of the multiphase extraction remediation completed by RSK/RemedX between July 2011 and March 2012 the removal of 334kg of hydrocarbon in the vapour phase and treatment of 343m³ of groundwater was completed.

Post remediation groundwater monitoring work completed by RSK recorded that no LNAPL remained in groundwater monitoring wells. Dissolved phase concentrations of all hydrocarbon compounds were observed to be below their respective solubility limit. This lines of evidence confirmed in RSKs opinion that the remediation on site had been successful and RSK considered that no further actions were required and the site was suitable for a continued oil use.

3.5.3 Investigation, Risk Assessment & Remediation by LCM & WSP 2017 to 2019. following a petrol leak in 2017

Following the reported 13,000 litre unleaded petrol leak in 2017, the following works are reported to have been completed:

By LCM:

- LCM performed emergency response for one week following the leak and recovered a reported 2,500 litres of LNAPL from boreholes and local drainage infrastructure and placed impermeable booms at a drainage outfall on the River Irwell.

By WSP:

- WSP provided oversight of LCM works in April 2017 and also performed emergency response works comprising:
 - post-release baseline groundwater and LNAPL monitoring of all existing wells;

- LNAPL baildown tests on most impacted wells;
- installation and operation of an active LNAPL skimming remediation system using existing serviceable wells;
- close circuit television (CCTV) survey of drainage on-site and on the neighbouring Melba Swintex site;
- preliminary indoor air monitoring within the Melba Swintex office building; and
- installation of a temporary air/vapour extraction unit within the Melba Swintex office basement.
- Six additional boreholes were drilled across the Site (WSP101 to WSP106) in May 2017 and the LNAPL skimming system was expanded to encompass these locations.
- The LNAPL skimming system was operated by WSP until October 2017, at which point it was decommissioned due to asymptotic LNAPL recovery rates.
- Six vapour monitoring wells were installed across the Site and sampled in October 2017 and an SVE pilot trial completed between 12th and 14th October 2017.
- A quantitative risk assessment was completed in February 2018.
- A soil vapour extraction (SVE) remediation system was installed on site in March 2018 and operated until December 2018 - vapours were initially treated by catalytic oxidation (CATOX) and then vapour was treated by absorption to granular activated carbon (GAC).
- Post-remediation groundwater monitoring was completed in January and February 2019, and an addendum DQRA report issued in May 2019.

The WSP reports indicate that substantial fuel mass recovery had been achieved by the emergency response and remediation works that were carried out at the Site since the reported 2017 leak.

WSP's September 2018 operational update provided a summary of the quantities of fuel recovered from each stage of the remediation works at the time of the report. It should be noted that the SVE system operated for a further three months after this report was produced. The September 2018 operational update recorded the following quantities:

- LCM Emergency Response Works: 2,500 litres recovered;
- WSP Free Product Recovery: 2,029 litres recovered;
- WSP SVE Trial: 225.5 litres recovered;
- WSP SVE Full Scale Recovery: 2,137 litres recovered.
- **Overall Total Recovery: 6,892 litres recovered.**

This represents a total recovery of **62%** of the original reported leak volume (**11,000 litres**) and indicates that the remediation works were performed successfully¹.

Reported recovery rates of LNAPL for both the LNAPL skimming and SVE systems reduced to asymptotic conditions, indicating limited benefit in further continued operation of each system.

Review of the measured LNAPL thicknesses in monitoring wells also show that these have reduced significantly from thicknesses of between 0.3m to over 1.0m in multiple locations immediately after the release in April 2017; to post remediation levels in February 2019 recording no measurable LNAPL in most locations to a maximum thickness of 0.077m in WSP104.

¹ SLR considers that the reported recovery rates are at the higher end of what was likely to be achievable for the type of remediation systems installed and the specific ground conditions present at the Site.

Vapour monitoring by WSP indicated that potentially significant risks to human health had not been identified; and also, that recorded ground gas conditions provided a good indicator that natural source zone depletion was occurring.

The 2019 addendum DQRA completed by WSP indicated that theoretical dissolved phase risks from benzene, ethylbenzene and xylene may be present for a 50m compliance point, but in reality, given the low sensitivity of the surrounding industrial land use, this risk is unlikely to be significant and presents an overly conservative assessment.

4.0 Groundwater Monitoring Results 2020 to 2021

4.1 Monitoring Well Condition Survey

A full inspection and audit of the 30 wells identified on the borehole location plan prepared by WSP was undertaken by SLR in July 2020. The original WSP borehole location plan is included as Appendix 04.

SLR found that 16 locations remained as viable groundwater monitoring wells; all were installed with 100mm diameter well casing with headworks constructed as summarised in Table 4-1 below.

Table 4-1: Groundwater Monitoring Well Details

Wells beneath 600mm Fibrelite or metal manhole cover within a GRP lined manhole	Wells beneath a 150mm or 200m diameter round bolted flush to grade manhole
RW1	BH2 (2000)
RW2	BH2 (RSK)
RW3	BH7A (RSK)
RW4	WSP101
RW7	WSP102
RW8	
RW13	
WSP103	
WSP104	
WSP105	
WSP106	

Fourteen monitoring wells were not present and field observations indicated that all had been sealed with grout. In summary:

- four wells were not found: BH4 (2000); BH9 (2000); RW6 and RW11;
- two wells – only gas taps were present, indicating these are possibly air sparge points RW5 and RW10, both located beneath 600mm Fibrelite™ manhole covers; and

the remaining eight wells appeared to have been grouted up recently – presumably by WSP.

4.2 Groundwater Monitoring Data 2020 to 2021

All viable groundwater wells were monitored by SLR in July 2020 and again in March and November 2021; the monitoring results are presented in Table 4-2 below.

Table 4-2: Groundwater Monitoring Details

BH Ref.	Well elevation maOD	Date	Well Headspace (ppm)	Depth to Water (m)	Groundwater Elevation maOD	LNAPL (m)
BH2 (2000)	77.14	Jul-20	0.2	3.503	73.637	-
		Mar-21	0	3.650	73.490	-
		Nov-21	0.0	3.656	73.484	-
BH2 (RSK)	76.96	Jul-20	0.2	3.503	73.457	-
		Mar-21	0	3.608	73.352	-
BH7A (RSK)	76.57	Jul-20	3.2	2.819	73.751	-
		Mar-21	10	2.985	73.585	-
		Nov-21	0.0	2.876	73.694	-
RW1	76.82	Jul-20	0.2	3.552	73.268	-
		Mar-21	35	3.801	73.019	-
		Nov-21	0.1	3.655	73.165	-
RW13	76.62	Jul-20	2.7	2.852	73.768	-
RW2	76.82	Jul-20	0.1	3.684	73.136	-
		Mar-21	0	3.902	72.918	-
		Nov-21	0.0	3.860	72.960	-
RW3	76.93	Jul-20	0.1	3.341	73.589	-
		Mar-21	65	3.594	73.336	-
		Nov-21	8.7	3.435	73.495	-
RW4	77.01	Jul-20	0.2	3.592	73.418	-
		Mar-21	15	3.842	73.168	-
		Nov-21	0.0	3.848	73.162	-
RW7	76.84	Jul-20	0.2	3.585	73.255	-
		Mar-21	35	3.820	73.020	-
		Nov-21	0.0	3.748	73.092	-
RW8	77.26	Jul-20	0.1	3.491	73.769	-
		Mar-21	0	3.643	73.617	-
		Nov-21	0.0	3.582	73.678	-
WSP101	77.04	Jul-20	0.2	3.316	73.724	-
WSP102	76.77	Jul-20	0.1	3.028	73.742	-
		Mar-21	5	3.135	73.635	-
		Nov-21	0.0	3.112	73.658	-
WSP103	76.73	Jul-20	0.3	3.356	73.374	-
		Mar-21	35	3.508	73.222	-

BH Ref.	Well elevation maOD	Date	Well Headspace (ppm)	Depth to Water (m)	Groundwater Elevation maOD	LNAPL (m)
		Nov-21	0.0	3.520	73.210	
WSP104	76.70	Jul-20	55.7	3.358	73.342	0.031
		Nov-21	114.0	3.408	73.292	
WSP105	76.65	Jul-20	44.4	3.069	73.581	0.012
		Mar-21	30	3.209	73.441	0.006
		Nov-21	503.0	3.403	73.247	
WSP106	76.62	Jul-20	0.9	2.867	73.753	-
		Mar-21	0	2.939	73.681	-
		Nov-21	0.0	2.939	73.681	

Groundwater was recorded at approximately 2.82 to 3.84m below ground level beneath the Site.

In November 2021, monitoring well vapour concentrations exceeded 10ppm in only WSP104 and WSP105; these are both located close to former Tank 3. In all remaining monitored wells, vapour concentrations were below 10ppm.

LNAPL was detected in monitoring wells WSP104 and WSP105; a small quantity was bailed from the well and was described as dark brown in colour with a petrol-like odour. No LNAPL was detected in any of the wells in November 2021.

On completion of groundwater monitoring, the wells scheduled for groundwater sampling (excluding those containing LNAPL) were developed and purged with a peristaltic pump to reduce sediment and stale groundwater in the water column surrounding the monitoring wells. Purged groundwater volumes ranged from around 30 litres from RW2 to 65 litres from RW3.

4.3 LNAPL Impact

Table 4-3 presents a comparison of SPH thicknesses in the two LNAPL impacted wells.

Table 4-3 – LNAPL Detection 2017 to 2021

Well No.	Date	LNAPL (m)
WSP104	Oct-17	0.170
	Feb-19	0.077
	Jul-20	0.031
	Nov-21	ND
WSP105	Oct-17	0.34
	Feb-19	0.005
	Jul-20	0.012
	Nov-21	ND

This indicates that LNAPL thickness in the impacted wells WSP104 and WSP105 has decreased since the last monitoring event by WSP in February 2019; to the extent that LNAPL is absent from the site in November 2021. Note also that in November 2021 the groundwater table was lower in these wells by around 0.2m compared to previous monitoring visits. LNAPL is more likely to accumulate when groundwater tables fall due to drainage under gravity into the monitoring wells.

The absence of LNAPL in November 2021 is an additional line of evidence that any LNAPL remaining on-site is not mobile; but instead is trapped within the soil matrix or below the groundwater table by capillary forces.

4.4 Analytical Chemistry Results

Groundwater samples were collected from nine representative groundwater monitoring wells on three occasions in July 2020, March 2021 and November 2021. The samples were analysed for TPH-CWG² and speciated PAH³ as these represented the key contaminants of concern.

The results of the chemical analysis completed on the collected samples of groundwater are presented in Appendix 03 and key dissolved phase contaminant concentrations are summarised in Table 4-3 below.

Table 4-4: Analytical Chemistry Results – Groundwater

Well No.	Date	TPH	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE
BH2 (2000)	Jul-20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Mar-21	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Nov-21	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BH7A(RSK)	Jul-20	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
	Nov-21	0.07	<0.01	<0.01	<0.01	<0.01	<0.01
	Mar-21	0.82	<0.01	<0.01	0.022	0.07	<0.01
RW1	Jul-20	1.8	<0.01	<0.01	<0.01	0.11	<0.01
	Mar-21	33	0.01	0.45	0.76	2.7	<0.01
	Nov-21	1.6	0.01	0.02	0.07	0.26	<0.01
RW2	Jul-20	28	0.03	>1.6	0.54	11	<0.01
	Mar-21	30	0.51	1.4	2.3	16	<0.01
	Nov-21	29	0.01	0.6	1.4	21	<0.01
RW3	Jul-20	13	0.26	>4.7	0.45	3.2	<0.01
	Mar-21	12	0.17	3.3	0.17	3.4	<0.01
	Nov-21	8.1	0.08	1.1	<0.01	3.2	<0.01
RW4	Jul-20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Mar-21	2.2	0.01	0.01	<0.01	0.18	<0.01

² Total petroleum hydrocarbons – criteria working group

³ Polynuclear aromatic hydrocarbons – only analysed in July 2020.

Well No.	Date	TPH	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE
	Nov-21	1.4	<0.01	<0.01	0.002	0.05	<0.01
RW7	Jul-20	5.4	0.1	0.04	0.35	0.69	<0.01
	Mar-21	1.8	0.04	0.01	0.01	0.04	<0.01
	Nov-21	0.8	0.01	<0.01	<0.01	0.01	<0.01
RW8	Mar-21	3.6	0.01	0.01	0.07	0.18	<0.01
	Nov-21	1.7	<0.01	0.01	0.07	0.13	<0.01
WSP102	Mar-21	1.1	<0.01	0.01	0.14	0.08	<0.01
WSP103	Jul-20	1	0.09	0.01	<0.01	0.03	0.01
	Nov-21	2.5	0.17	0.08	0.33	0.39	0.02
WSP104	Nov-21	26	0.11	3.1	0.87	9.3	<0.01
WSP105	Nov-21	23	0.07	2.8	0.89	4	<0.01
WSP106	Jul-20	2.9	<0.01	0.08	<0.01	0.65	<0.01
	Mar-21	19	0.02	2.6	1.3	5	<0.01
	Nov-21	11	<0.01	0.91	0.8	3.6	<0.01

Groundwater analysis recorded the following in November 2021:

- concentrations of dissolved hydrocarbons exceeding 10mg/l in monitoring wells WSP104, WSP105 WSP106, and RW2 up to a maximum of 29 mg/l in RW2;
- concentrations of dissolved hydrocarbons between 1mg/l and 10mg/l in monitoring wells RW1, RW3, RW4, RW8, and WSP103;
- maximum concentrations of benzene were recorded at 0.17mg/l in RW3; and
- MTBE detected at 0.02mg/l in WSP103 only.

5.0 Land Quality Risk Assessment

As part of the evaluation of the Site and in accordance with current best practice, SLR has developed a Conceptual Site Model to assess potential pollutant linkages (PPLs) posed by Source – Pathway – Receptor relationships. The results of this assessment are summarised in Table 5-1 below. This lists the potential sources, pathways and receptors identified and the possible pollutant linkages between them in the context of the proposed development of the Site, i.e. a situation where the source(s), pathway(s) and receptor(s) are all present at a site and therefore a real (as opposed to a perceived) risk of potential impact exists.

5.1 Conceptual Site Model

When considering the contaminants, receptors and pathways relevant to this Site, SLR has been mindful of the proposed commercial end use. The current buildings and petroleum storage infrastructure on the Site will be dismantled systematically and any enabling works completed prior to building new retail building and installing EV charging infrastructure.

It is considered that the multiple phases of investigation and groundwater monitoring completed to date provide lines of evidence to indicate that there is evidence for the potential presence of:

- petroleum hydrocarbon contamination in soil;
- petroleum phase hydrocarbons dissolved in groundwater;
- potential for heavy metals and asbestos containing materials in the made ground.

Table 5-1 - Risk Assessment

Sources	Contamination Sources	Contaminant of Concern (CoC)
	Petroleum hydrocarbon contamination bound within soil matrix. LNAPL on groundwater or entrained in soil phase below the groundwater table.	Site history of containment failures and the results of previous site investigations and laboratory analysis confirm presence of soil impact with hydrocarbons and residual LNAPL derived from petrol in particularly around: 1) the pump islands, 2) associated with the former below ground tanks, particularly those close to the southern side of the Site; and, 3) drainage infrastructure. In particular, fugitive contaminant sources may include drainage lines and underground pipelines to the pump islands.
	Petrol vapour or ground gas	Remedial action appears to have removed mobile LNAPL; but there is the potential for residual petrol vapour and ground gas from hydrocarbon degradation that merits further assessment.
	Solid-phase metals	Heavy metals may also be present in the made ground, along with asbestos although no previous analysis for this contaminant has been undertaken.

Pathways	Pathway	Description	
	Ground to controlled waters	Vertical migration to groundwater	Drainage of LNAPL under gravity to the groundwater table has previously occurred. Leaching through shallow soils beneath the Site is limited in current and former operational areas of the Site due to the presence of impermeable hardstanding.
		Surface Water	Via groundwater migration through superficial strata to relatively distant watercourses.
	Underground services/ preferential pathways	On and off site	Potential for migration of groundwater impacts into drainage and utility corridors where they may intercept any perched groundwater and/or extend below the groundwater table.
	Vapour / gas migration	On-Site	Migration of vapour via preferential pathways such as utility corridors or via coarse grained Made Ground.
		Off-Site	Migration of vapour via preferential pathways such as utility corridors or via coarse grained Made Ground and subsequent vapour migration through any shallow relatively permeable soils or pathways through otherwise impermeable hardstanding.
	Dermal contact, ingestion or inhalation	On-site	In future, most of the Site will continue to be surfaced with hard standing, which limits the potential pathway; and is unlikely to provide a pathway for direct contact.
		Off-Site	Potential for offsite migration of dissolved phase and LNAPL impacts via shallow groundwater onto adjacent properties is unlikely due to the depth to groundwater.
Receptors	Receptor	Location	
	Groundwater	A secondary (undifferentiated) aquifer is present in the superficial deposits beneath the Site. The underlying bedrock is classified as a secondary A aquifer.	
	Surface waters	The River Irwell flows southwards 380m from the western boundary.	
	Buildings	A new retail sales building plus EV infrastructure are due to be constructed on the Site.	
	Human Health – on site	Continued commercial use – site workers and visitors.	
	Human Health – off site	Properties in commercial use are present downgradient to the west and south of the Site.	
	Ecological (fauna / flora)	No designated ecological receptors are present.	
Potential Pollutant Linkages (PPLs)	Linkage	Presence	
	Harm to Human Health – on site	Potentially present. Based on the investigation data, petroleum contaminant impact is present along with a potential pathway linkage to future commercial occupiers for indoor inhalation. Depth and location of contaminant impact; combined with previous effective remediation is likely to mitigate risk. Direct ingestion & contact exposure will not exist in the built development. <u>Nevertheless, further gas risk assessment, as part of the remedial strategy and possibly the validation/verification plan is required.</u>	

	Harm to Human Health – off site	Potentially present, although unlikely. Identified hydrocarbon impacts are present but depth and location of contaminant impact combined with previous effective remediation will mitigate risks to on-site receptors. The only uncertainty remains potential linkages via utility corridors (e.g. vapours). Further work during development to mitigate on-site sources and assess risks via these pathways will further reduce risks to off-site receptors. Further assessment, remedial strategy and validation/verification plan is required.
	Harm to Groundwater	Potentially present. Recorded hydrocarbon impacts to groundwater on-site; LNAPL has been effectively remediated but may remain trapped by capillary forces localized to sources. Further detailed assessment of these sources, evaluation of migration risk and some remedial work will likely be required for development and this will effectively remove the source and/or block the pathway. <u>Further assessment, remedial strategy and validation/verification plan is required.</u>
	Harm to Surface waters	Unlikely to be present. Recorded hydrocarbon impacts to groundwater on-site would not appear to extend to the River Irwell. Whilst further detailed assessment of risk via this PPL is not necessary, source reduction during development to protect groundwater and human health will effectively remove risk to this receptor in any case.
	Damage to Buildings/Structures	Present. Potentially active pathways if significant contamination source(s) present. The proposals include concrete foundations which could be damaged by aggressive compounds present within the natural soils, Made Ground and groundwater. <u>Further sampling and verification needed.</u>
	Harm to Property: (fauna / flora)	Not present. SLR considers that no potential pollutant linkages exist as commercial crops will not be grown at the Site or livestock kept. The risks to surrounding land usage (wholly commercial) are not thought to be significant. <u>No further action is required</u>
	Harm to Ecosystems	Not present. The Site is not located within close proximity to a designated ecological site. <u>No further action is required</u>

5.2 Summary of Potential Pollutant Linkages

The following paragraphs provide some commentary on the results of this assessment.

5.2.1 Harm to Ecosystems

SLR considers that there are no PPLs for this receptor. The subject property is not located within close proximity to a designated ecological site. No further action is required.

5.2.2 Damage to Buildings / Structures

Buildings/construction – hazardous gas/vapours can arise from soil and groundwater contamination impact and/or from methane generated by the natural attenuation of this impact, and this can be a potential risk to buildings. However, risks are likely to be straightforward to manage because:

1. As a result of the 2017 remediation works by WSP, the hydrocarbon impacts detected are of reduced volatility and not considered to generate volatile or hazardous vapour or persistent ground gas flows.
2. The proposed buildings are located close to the western boundary and are not sited directly above the main suspected source areas of the southern tank farm, pump islands and pipework.

Water supply pipes – impacted soils and groundwater are present on site. Hydrocarbon contamination can impact below ground potable water supply pipes. Hydrocarbon impacts potentially intersect the depth of

incoming utilities. Further action will be required for development via the use of below ground barrier pipework approved by the local water supply company.

5.2.3 Harm to Human Health

The following potential contaminant linkages have been assessed:

- **Contaminated soils and humans** (i.e. direct contact) – In the proposed development, pathways for potential exposure would be blocked by the presence of the new building, car parking and hardstanding areas overlying potentially impacted areas of the former petrol station.
- **Hazardous soil gases and humans on-site** – identified hydrocarbon impacts are present at depth across several areas of the Site. As a result of the 2017 remediation works by WSP, the hydrocarbon impacts are of lower volatility and they are not considered to generate hazardous vapour. Regardless, further assessment of these risks will be required for development and, if found to be necessary, simple proprietary gas protection measures can be used within building structures to manage residual risks.
- **Hazardous soil gases and humans off-site** – identified hydrocarbon impacts are present at depth and as a result of the 2017 remediation works by WSP, the hydrocarbon impacts are of lower volatility and they are not considered to generate hazardous vapour. However, potential pathways to off-site drainage systems and similar that could provide pathways for fugitive impacted groundwater and vapour migration should be assessed.

5.2.4 Pollution of Controlled Waters

The following potential contaminant linkages have been assessed:

Groundwater – The Site overlies groundwater in an undifferentiated secondary aquifer. In the proposed development scenario remedial action in advance of main construction phase, to remove redundant petroleum infrastructure (underground tanks and fuel lines) combined with associated petrol impacted soils around the depth of the groundwater table combined with placement of building structures and impermeable surfacing, would tend to isolate and break pathways for unsaturated zone soil impact leaching.

As groundwater impacts at concentrations indicative of trapped LNAPL have been recorded, a detailed quantitative risk assessment (DQRA), remedial strategy, and validation sampling plan will be required to support development.

Surface waters – The River Irwell lies within 380m from the southwestern boundary of the Site. Risk to surface water is unlikely to exist due to the distance to this receptor.

5.2.5 Potentially Unacceptable Risks

Having considered the above criteria including the uncertainties and gaps in the conceptual model, it is apparent that the Preliminary Risk Assessment provides a reasonable level of confidence that the Site has a recent history of potentially contaminative activities.

It is recognised that the Site is located in a medium to low sensitivity environmental setting with respect to groundwater and has been subject to extensive ground investigation, remediation and monitoring, which has provided reasonably comprehensive characterisation of the Site. Monitoring after recent remedial work completed by WSP has recorded historical hydrocarbon impact comprising residual LNAPL and concentrations of petrol range hydrocarbons in the groundwater, but at concentrations that continue to diminish and in accordance with the results and predictions from a previous DQRA.

Nevertheless, the planned development work will require a remedial strategy and implementation plan associated with the removal of the redundant petroleum infrastructure and a sampling and analysis plan to support this work should be completed.

6.0 SUMMARY AND CONCLUSIONS

6.1 Summary

Based on the review of the available information, Table 6-1 provides a summary of the main environmental issues at the subject property.

Table 6-1 – Summary and Evaluation

Issue	Summary and Evaluation
History	In summary, the mapping suggests that the Site was unused prior to its first development as a petrol station during the 1950s; the current shop and forecourt were built in the 1980s. The petroleum infrastructure at the Site has suffered two containment failures in 2000 and 2017 resulting in the release of petrol to the subsurface. The LNAPL impacts from the releases have been addressed through in-situ engineered remediation.
Geology	Geology consists of a layer of Made Ground of brown to orange-brown clayey sandy gravel with occasional ash, concrete and brick which extends up to 3m depth. This overlies superficial deposits of Till comprising sand and gravel overlying brown to grey sandy clay to over 6.4m depth. Bedrock comprises the Trencherbone Rock; but this has not been encountered in previous site investigation indicating that rockhead is at least 6m below ground level.
Hydrogeology	Groundwater is present within the Made Ground and superficial deposits of Till at depths of between 3m and 3.5m. The superficial deposits of Till are a secondary (undifferentiated) aquifer. The Site is not located within an SPZ, and there are no active groundwater abstraction permits within 2km.
Hydrology	The nearest surface water feature is the River Irwell, which lies over 380m south-west of the Site and flows south. The Site is not within a Flood Zone.
Soil Quality	Site investigations have recorded the presence of soil impact with petrol-range hydrocarbon close to current infrastructure around and below the groundwater table (3m to 5m below ground level). Shallower impact is also likely to exist close to and beneath historical infrastructure.
Groundwater Quality	Groundwater samples collected in 2020 and 2021 recorded moderate concentrations of petrol range hydrocarbons (up to around 30mg/l) above water quality standards and low concentrations of BTEX consistent with an older weathering petrol fuel source. No LNAPL was detected in Autumn 2021 when groundwater was at its seasonal low and LNAPL appearance due to gravity drainage into wells was most likely. Nevertheless residual LNAPL is likely to exist close to sources and possibly trapped by capillary forces around the groundwater table.
Contamination Issues and Risk Assessment	The previous development of the Site as a petrol station has created a network of buried fuel infrastructure and structures with the potential for hydrocarbon impact to soil and groundwater. Multiple previous site investigations have provided a reasonably robust delineation of hydrocarbon impact at the Site, and whilst some localised impact exists, this would be straightforward to deal with during development, using standard remediation practices.

6.2 Conclusions and Recommendations

Previous site investigation results have identified the potential for residual hydrocarbon impacts to pose risk to human health and the wider environment (including controlled waters). Work required to remove and dismantle the petrol station infrastructure, to enable preparation of the Site for new shop and EV charging development, would be combined with a planned programme of contamination sampling, possible remediation and verification work.

Therefore, SLR recommends that a remediation strategy is prepared to support the development and this includes an assessment of ground gas/vapour risk. The remediation strategy document will include a detailed quantitative risk assessment and support the removal of the below ground fuel infrastructure and develop a plan to address known areas of contamination, along with any unexpected contamination which may be encountered during the dismantling work and during development.

The requirement for and scope of the remediation strategy would not be abnormal for a brownfield site and the information summarised in this preliminary assessment has not identified any particular contamination constraints to the beneficial reuse of the Site.

The remediation strategy should include details of validation works to be carried out during dismantling and development to confirm that, post development, no residual unacceptable risks to human health or controlled waters remain.

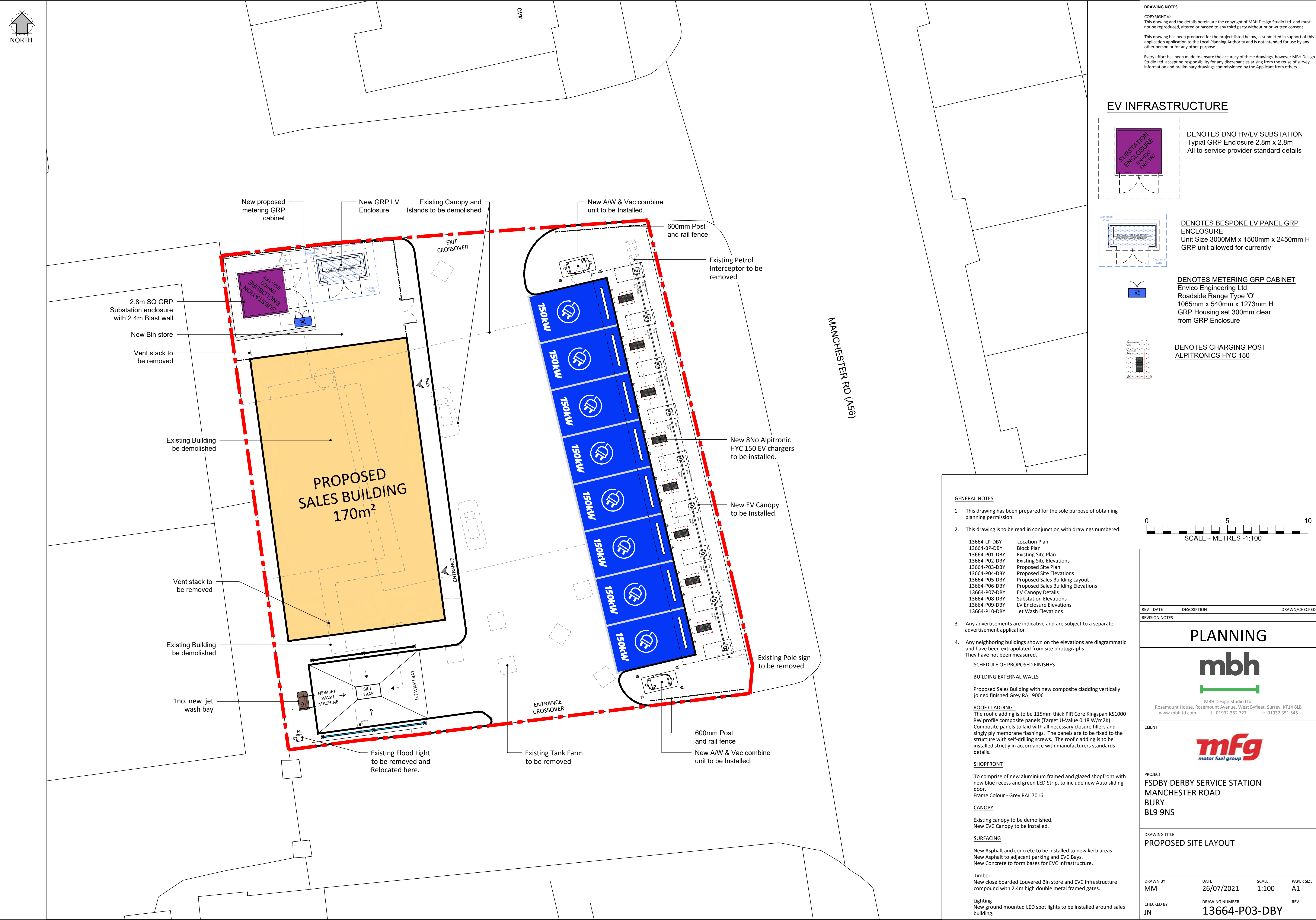
The findings of the validation works should be documented in a separate validation report.

APPENDIX 01

Indicative Proposed Site Development

APPENDIX 01

Indicative Proposed Site Development



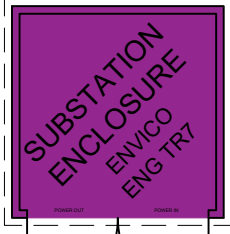
DRAWING NOTES

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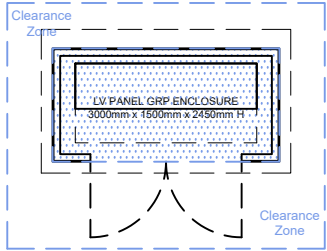
This drawing has been produced for the project listed below, is submitted in support of this application application to the Local Planning Authority and is not intended for use by any other person or for any other purpose.

Every effort has been made to ensure the accuracy of these drawings, however MBH Design Studio Ltd. accept no responsibility for any discrepancies arising from the reuse of survey information and preliminary drawings commissioned by the Applicant from others.

EV INFRASTRUCTURE



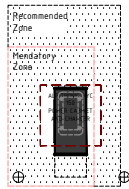
DENOTES DNO HV/LV SUBSTATION
Typical GRP Enclosure 2.8m x 2.8m
All to service provider standard details



DENOTES BESPOKE LV PANEL GRP ENCLOSURE
Unit Size 3000MM x 1500mm x 2450mm H
GRP unit allowed for currently

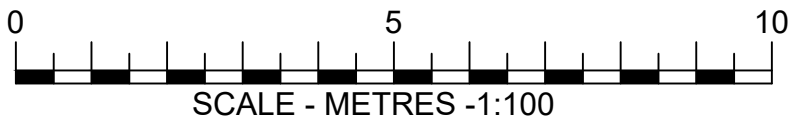


DENOTES METERING GRP CABINET
Envico Engineering Ltd
Roadside Range Type 'O'
1065mm x 540mm x 1273mm H
GRP Housing set 300mm clear from GRP Enclosure



DENOTES CHARGING POST
ALPITRONICS HYC 150

- GENERAL NOTES**
- This drawing has been prepared for the sole purpose of obtaining planning permission.
 - This drawing is to be read in conjunction with drawings numbered:
 - 13664-LP-DBY Location Plan
 - 13664-BP-DBY Block Plan
 - 13664-P01-DBY Existing Site Plan
 - 13664-P02-DBY Existing Site Elevations
 - 13664-P03-DBY Proposed Site Plan
 - 13664-P04-DBY Proposed Site Elevations
 - 13664-P05-DBY Proposed Sales Building Layout
 - 13664-P06-DBY Proposed Sales Building Elevations
 - 13664-P07-DBY EV Canopy Details
 - 13664-P08-DBY Substation Elevations
 - 13664-P09-DBY LV Enclosure Elevations
 - 13664-P10-DBY Jet Wash Elevations
 - Any advertisements are indicative and are subject to a separate advertisement application
 - Any neighboring buildings shown on the elevations are diagrammatic and have been extrapolated from site photographs. They have not been measured.
- SCHEDULE OF PROPOSED FINISHES**
- BUILDING EXTERNAL WALLS**
- Proposed Sales Building with new composite cladding vertically joined finished Grey RAL 9006
- ROOF CLADDING :**
The roof cladding is to be 115mm thick PIR Core Kingspan KS1000 RW profile composite panels (Target U-Value 0.18 W/m2K). Composite panels to laid with all necessary closure fillers and singly ply membrane flashings. The panels are to be fixed to the structure with self-drilling screws. The roof cladding is to be installed strictly in accordance with manufacturers standards details.
- SHOPFRONT**
- To comprise of new aluminium framed and glazed shopfront with new blue recess and green LED Strip, to include new Auto sliding door.
Frame Colour - Grey RAL 7016
- CANOPY**
- Existing canopy to be demolished.
New EVC Canopy to be installed.
- SURFACING**
- New Asphalt and concrete to be installed to new kerb areas.
New Asphalt to adjacent parking and EVC Bays.
New Concrete to form bases for EVC Infrastructure.
- Timber**
New Close boarded Louvered Bin store and EVC Infrastructure compound with 2.4m high double metal framed gates.
- Lighting**
New ground mounted LED spot lights to be installed around sales building.



REV	DATE	DESCRIPTION	DRAWN/CHECKED
REVISION NOTES			
PLANNING			
 MBH Design Studio Ltd. Rosemount House, Rosemount Avenue, West Byfleet, Surrey, KT14 6LB www.mbhtd.com t: 01932 352 727 f: 01932 351 545			
CLIENT 			
PROJECT FSDBY DERBY SERVICE STATION MANCHESTER ROAD BURY BL9 9NS			
DRAWING TITLE PROPOSED SITE LAYOUT			
DRAWN BY MM	DATE 26/07/2021	SCALE 1:100	PAPER SIZE A1
CHECKED BY JN	DRAWING NUMBER 13664-P03-DBY	REV.	

APPENDIX 02

Groundsure EnviroInsight report

Former Derby Garage, Manchester road, Bury, BL9 9NS

Order Details

Date: 07/12/2021
Your ref: EMS_743372_967295
Our Ref: EMS-743372_967295
Client: emapsite

Site Details

Location: 380470 408777
Area: 0.09 ha
Authority: [Bury Metropolitan Borough Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.12

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Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	0	5	9	36	-
15	1.2	Historical tanks	0	1	2	19	-
17	1.3	Historical energy features	0	1	4	12	-
18	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	Historical garages	2	4	0	4	-
19	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
20	2.1	Historical industrial land uses	0	8	11	54	-
23	2.2	Historical tanks	0	2	10	34	-
25	2.3	Historical energy features	0	1	9	22	-
27	2.4	Historical petrol stations	0	0	0	0	-
27	2.5	Historical garages	4	6	0	8	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
29	3.1	Active or recent landfill	0	0	0	0	-
29	3.2	Historical landfill (BGS records)	0	0	0	0	-
30	3.3	Historical landfill (LA/mapping records)	0	0	0	2	-
30	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
30	3.5	Historical waste sites	0	0	0	1	-
31	3.6	Licensed waste sites	0	0	0	3	-
33	3.7	Waste exemptions	0	0	4	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
34	4.1	Recent industrial land uses	0	4	9	-	-
35	4.2	Current or recent petrol stations	1	0	0	0	-
36	4.3	Electricity cables	0	0	0	0	-
36	4.4	Gas pipelines	0	0	0	0	-
36	4.5	Sites determined as Contaminated Land	0	0	0	0	-



36	4.6	<u>Control of Major Accident Hazards (COMAH)</u>	0	0	0	1	-
37	4.7	Regulated explosive sites	0	0	0	0	-
37	4.8	Hazardous substance storage/usage	0	0	0	0	-
37	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
37	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
37	4.11	<u>Licensed pollutant release (Part A(2)/B)</u>	1	0	1	1	-
38	4.12	Radioactive Substance Authorisations	0	0	0	0	-
38	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	0	7	-
40	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
40	4.15	Pollutant release to public sewer	0	0	0	0	-
40	4.16	List 1 Dangerous Substances	0	0	0	0	-
40	4.17	List 2 Dangerous Substances	0	0	0	0	-
40	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
41	4.19	Pollution inventory substances	0	0	0	0	-
41	4.20	Pollution inventory waste transfers	0	0	0	0	-
41	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
42	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
44	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
46	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
47	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
47	5.5	Groundwater vulnerability- local information	None (within 0m)				
48	5.6	<u>Groundwater abstractions</u>	0	0	2	0	10
52	5.7	<u>Surface water abstractions</u>	0	0	0	6	16
57	5.8	<u>Potable abstractions</u>	0	0	0	0	2
58	5.9	Source Protection Zones	0	0	0	0	-
58	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
59	6.1	Water Network (OS MasterMap)	0	0	0	-	-



59	6.2	Surface water features	0	0	0	-	-
60	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
60	6.4	<u>WFD Surface water bodies</u>	0	0	0	-	-
61	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
62	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
63	7.2	<u>Historical Flood Events</u>	0	0	1	-	-
63	7.3	Flood Defences	0	0	0	-	-
63	7.4	<u>Areas Benefiting from Flood Defences</u>	0	0	1	-	-
64	7.5	Flood Storage Areas	0	0	0	-	-
65	7.6	Flood Zone 2	None (within 50m)				
65	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
66	8.1	<u>Surface water flooding</u>	1 in 1000 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
68	9.1	<u>Groundwater flooding</u>	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
69	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
70	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
70	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
70	10.4	Special Protection Areas (SPA)	0	0	0	0	0
70	10.5	National Nature Reserves (NNR)	0	0	0	0	0
71	10.6	<u>Local Nature Reserves (LNR)</u>	0	0	0	0	1
71	10.7	Designated Ancient Woodland	0	0	0	0	0
71	10.8	Biosphere Reserves	0	0	0	0	0
71	10.9	Forest Parks	0	0	0	0	0
72	10.10	Marine Conservation Zones	0	0	0	0	0
72	10.11	<u>Green Belt</u>	0	0	0	0	4
72	10.12	Proposed Ramsar sites	0	0	0	0	0



72	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
73	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
73	10.15	Nitrate Sensitive Areas	0	0	0	0	0
73	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
74	<u>10.17</u>	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
75	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
76	11.1	World Heritage Sites	0	0	0	-	-
77	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
77	11.3	National Parks	0	0	0	-	-
77	<u>11.4</u>	<u>Listed Buildings</u>	0	0	1	-	-
78	11.5	Conservation Areas	0	0	0	-	-
78	11.6	Scheduled Ancient Monuments	0	0	0	-	-
78	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
79	<u>12.1</u>	<u>Agricultural Land Classification</u>	Urban (within 250m)				
80	12.2	Open Access Land	0	0	0	-	-
80	12.3	Tree Felling Licences	0	0	0	-	-
80	12.4	Environmental Stewardship Schemes	0	0	0	-	-
80	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
81	<u>13.1</u>	<u>Priority Habitat Inventory</u>	0	1	9	-	-
82	13.2	Habitat Networks	0	0	0	-	-
82	13.3	Open Mosaic Habitat	0	0	0	-	-
82	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
83	<u>14.1</u>	<u>10k Availability</u>	Identified (within 500m)				
84	<u>14.2</u>	<u>Artificial and made ground (10k)</u>	0	0	0	5	-
86	<u>14.3</u>	<u>Superficial geology (10k)</u>	1	0	3	5	-

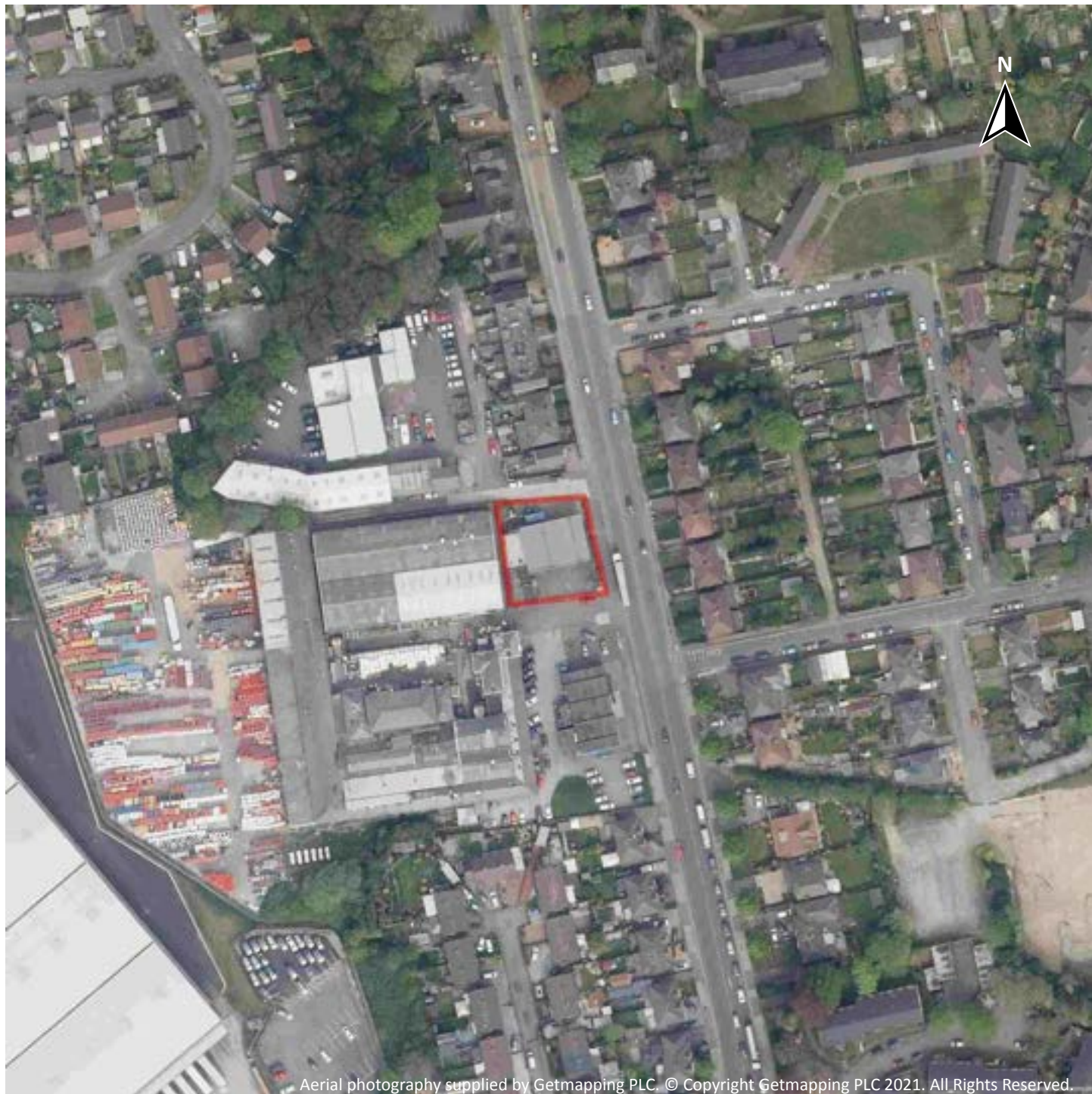


87	14.4	Landslip (10k)	0	0	0	0	-
88	14.5	<u>Bedrock geology (10k)</u>	1	0	8	13	-
90	14.6	<u>Bedrock faults and other linear features (10k)</u>	0	0	5	16	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
91	15.1	<u>50k Availability</u>	Identified (within 500m)				
92	15.2	Artificial and made ground (50k)	0	0	0	0	-
92	15.3	Artificial ground permeability (50k)	0	0	-	-	-
93	15.4	<u>Superficial geology (50k)</u>	1	0	3	2	-
94	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
94	15.6	Landslip (50k)	0	0	0	0	-
94	15.7	Landslip permeability (50k)	None (within 50m)				
95	15.8	<u>Bedrock geology (50k)</u>	1	0	5	8	-
96	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
97	15.10	<u>Bedrock faults and other linear features (50k)</u>	0	0	5	11	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
98	16.1	<u>BGS Boreholes</u>	0	0	4	-	-
Page	Section	Natural ground subsidence					
100	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
101	17.2	<u>Running sands</u>	Very low (within 50m)				
102	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
103	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
104	17.5	<u>Landslides</u>	Very low (within 50m)				
105	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
107	18.1	Natural cavities	0	0	0	0	-
108	18.2	BritPits	0	0	0	0	-
108	18.3	<u>Surface ground workings</u>	0	0	15	-	-
109	18.4	Underground workings	0	0	0	0	0
109	18.5	Historical Mineral Planning Areas	0	0	0	0	-



109	18.6	Non-coal mining	0	0	0	0	0
109	18.7	Mining cavities	0	0	0	0	0
109	18.8	JPB mining areas	None (within 0m)				
110	18.9	<u>Coal mining</u>	Identified (within 0m)				
110	18.10	Brine areas	None (within 0m)				
110	18.11	Gypsum areas	None (within 0m)				
110	18.12	Tin mining	None (within 0m)				
110	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
111	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
112	20.1	<u>BGS Estimated Background Soil Chemistry</u>	1	1	-	-	-
112	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
112	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
113	21.1	Underground railways (London)	0	0	0	-	-
113	21.2	Underground railways (Non-London)	0	0	0	-	-
113	21.3	Railway tunnels	0	0	0	-	-
113	21.4	Historical railway and tunnel features	0	0	0	-	-
113	21.5	Royal Mail tunnels	0	0	0	-	-
114	21.6	Historical railways	0	0	0	-	-
114	21.7	Railways	0	0	0	-	-
114	21.8	Crossrail 1	0	0	0	0	-
114	21.9	Crossrail 2	0	0	0	0	-
114	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 22/05/2019

Site Area: 0.09ha



Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 0.09ha



Recent site history - 2011 aerial photograph



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Capture Date: 02/05/2011

Site Area: 0.09ha



Recent site history - 2000 aerial photograph

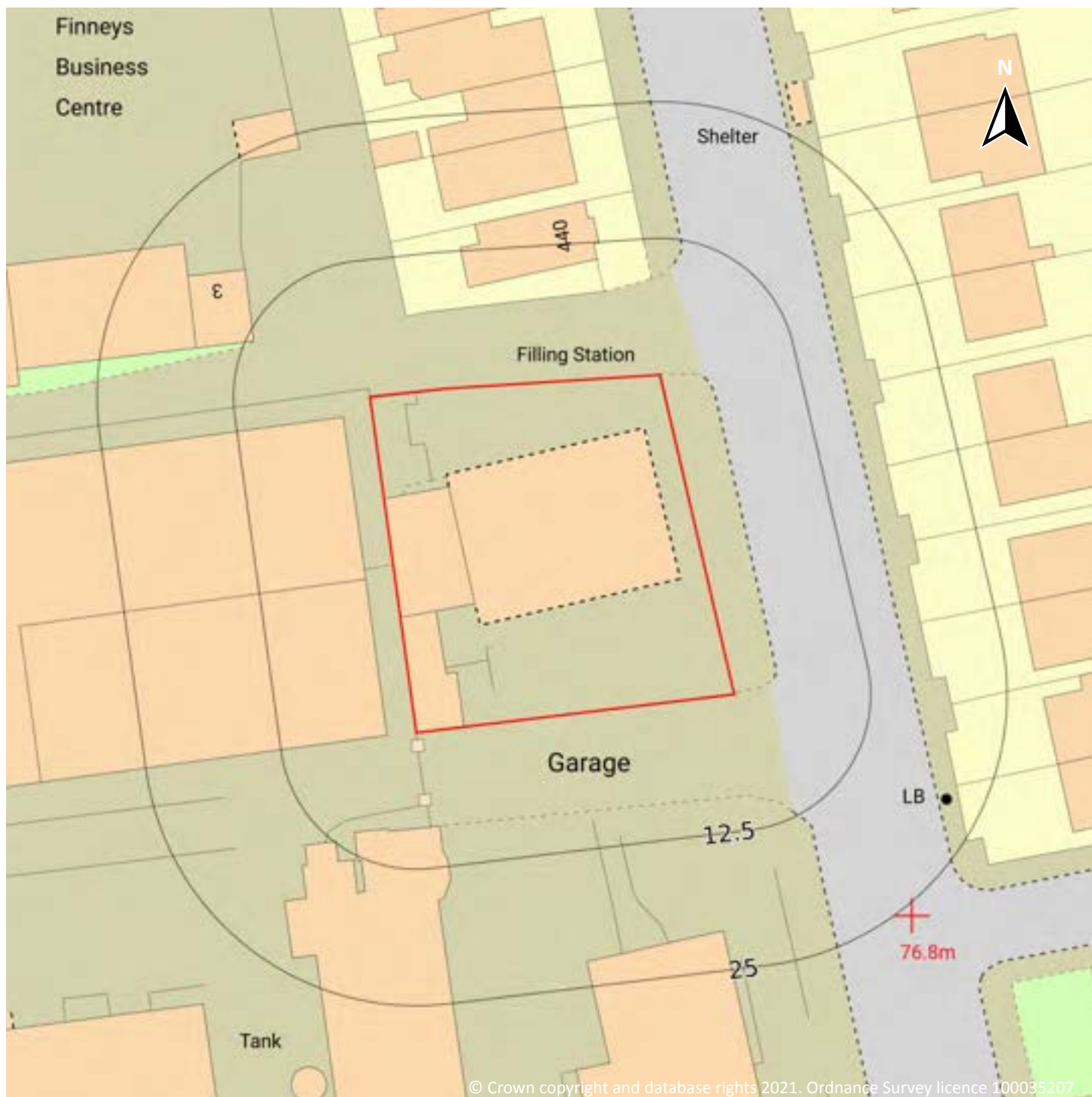


Capture Date: 27/06/2000

Site Area: 0.09ha



OS MasterMap site plan



Site Area: 0.09ha



1 Past land use



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

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1.1 Historical industrial land uses

Records within 500m

50

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 13**

ID	Location	Land use	Dates present	Group ID
A	1m W	Unspecified Works	1965 - 1981	765310



ID	Location	Land use	Dates present	Group ID
A	3m W	Tannery	1928 - 1938	734859
A	3m W	Unspecified Works	1908	779115
A	5m W	Tannery	1955	738446
A	38m W	Workhouse	1851	641717
A	81m W	Refuse Heap	1928	677983
1	92m SW	Nursery	1908	679944
C	113m SW	Paper Mills	1974 - 1981	726908
D	196m S	Unspecified Commercial/Industrial	1974	643334
D	196m S	Paper Mills	1965	656691
D	196m S	Unspecified Mills	1981	711239
D	199m S	Unspecified Mills	1891	758046
2	228m NW	Unspecified Ground Workings	1928 - 1938	776377
3	244m S	Pump	1851	675597
C	250m SW	Paper Mills	1965	762642
F	271m NE	Cemetery	1955	777556
F	271m NE	Cemetery	1965 - 1981	790080
F	276m NE	Cemetery	1891 - 1938	784114
D	282m S	Unspecified Mills	1908 - 1938	712213
4	287m NE	Unspecified Tank	1908	674828
C	308m SW	Refuse Heap	1928	677984
5	330m N	Nursery	1965	679939
6	356m SE	Bleach Works	1851	658157
7	358m NE	Unspecified Pit	1891 - 1938	744132
G	370m SE	Unspecified Mills	1891	725054
H	380m SE	Bleaching and Finishing Mills	1965	693882
H	393m SE	Unspecified Mills	1955	700103
I	412m S	Settling Tanks	1955	774001
I	413m S	Filter Beds	1908	700834



ID	Location	Land use	Dates present	Group ID
I	414m S	Settling Tanks	1928	711911
I	415m S	Filter Beds	1928 - 1955	695395
I	416m S	Filter Beds	1965	711703
H	421m SE	Unspecified Mills	1908 - 1938	731631
K	426m N	Unspecified Pit	1908	691006
M	452m W	Unspecified Warehouse	1977	716907
M	452m W	Unspecified Warehouse	1988	770363
N	455m W	Unspecified Works	1991	782230
N	458m W	Unspecified Heap	1928	650894
P	459m SW	Cabinet Works	1955 - 1965	767569
Q	461m SW	Settling Tanks	1938	681805
K	465m N	Refuse Heap	1928 - 1938	705984
N	474m W	Oil and Tallow Works	1908	652452
Q	478m SW	Settling Tanks	1938	681804
P	484m SW	Unspecified Commercial/Industrial	1974 - 1981	774222
N	488m W	Refuse Heap	1965	677981
P	491m SW	Cotton Weaving Mill	1928 - 1938	720424
G	492m S	Print Works	1851	680239
10	493m SW	Chemical Works	1908	682691
N	499m W	Tallow and Candle Works	1928	670840
N	499m W	Candle Works	1938	691499

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

22

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 13**

ID	Location	Land use	Dates present	Group ID
A	33m SW	Tanks	1930 - 1937	93773
A	64m SW	Unspecified Tank	1930 - 1937	100776
A	64m S	Tanks	1956 - 1995	90548
C	262m SW	Unspecified Tank	1995	84763
C	280m SW	Unspecified Tank	1987 - 1995	93576
C	281m SW	Unspecified Tank	1989	95103
D	342m S	Unspecified Tank	1995	96960
D	343m S	Unspecified Tank	1956 - 1970	90252
D	379m S	Unspecified Tank	1956 - 1995	103228
I	402m S	Settling Tanks	1956	95331
I	402m S	Settling Tanks	1969	92977
I	407m S	Tanks	1910	92807
I	408m S	Tanks	1969 - 1995	90127
I	411m S	Settling Tanks	1956 - 1970	100132
I	412m S	Tanks	1995	103139
I	412m S	Tanks	1969 - 1970	98098
I	418m S	Settling Tanks	1930 - 1937	101645
J	426m S	Unspecified Tank	1969	99896
J	427m S	Unspecified Tank	1970	100970
J	427m S	Unspecified Tank	1995	103120
9	442m W	Unspecified Tank	1987	84761
H	489m SE	Unspecified Tank	1956 - 1967	89714

This data is sourced from Ordnance Survey / Groundsure.



1.3 Historical energy features

Records within 500m

17

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 13**

ID	Location	Land use	Dates present	Group ID
A	48m S	Electricity Substation	1970	45663
A	53m S	Electricity Substation	1956 - 1969	55327
A	53m S	Electricity Substation	1984 - 1987	52677
E	199m NW	Electricity Substation	1995	46880
E	199m NW	Electricity Substation	1984 - 1989	58972
C	328m SW	Electricity Substation	1956 - 1970	52101
D	362m S	Electricity Substation	1969 - 1995	56145
8	406m NW	Electricity Substation	1973 - 1995	52862
L	436m W	Electricity Substation	1989	45668
L	438m W	Electricity Substation	1995	45669
R	468m NE	Electricity Substation	1996	45657
R	474m NE	Electricity Substation	1971	45660
T	496m SW	Electricity Substation	1956 - 1969	52486
T	496m SW	Electricity Substation	1995	50012
T	496m SW	Electricity Substation	1956 - 1970	55428
S	497m S	Electricity Transformer	1969	46544
S	497m S	Electricity Substation	1970 - 1992	55391

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

10

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 13**

ID	Location	Land use	Dates present	Group ID
A	On site	Garage	1989 - 1995	19697
B	On site	Garage	1984 - 1987	19515
B	1m N	Garage	1956 - 1970	18178
B	8m N	Garage	1969	15625
B	11m W	Garage	1989 - 1995	18929
B	12m NW	Garage	1956	16694
O	457m S	Garage	1969	16477
O	470m S	Garage	1967 - 1982	17768
O	472m S	Service Station	1956	17788
S	494m S	Garage	1982 - 1992	19141

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

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2.1 Historical industrial land uses

Records within 500m

73

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 20**

ID	Location	Land Use	Date	Group ID
A	1m W	Unspecified Works	1981	765310
A	1m W	Unspecified Works	1974	765310
A	1m W	Unspecified Works	1965	765310

ID	Location	Land Use	Date	Group ID
A	3m W	Tannery	1938	734859
A	3m W	Tannery	1928	734859
A	3m W	Unspecified Works	1908	779115
A	5m W	Tannery	1955	738446
A	38m W	Workhouse	1851	641717
A	81m W	Refuse Heap	1928	677983
1	92m SW	Nursery	1908	679944
C	113m SW	Paper Mills	1981	726908
C	113m SW	Paper Mills	1974	726908
D	196m S	Unspecified Mills	1981	711239
D	196m S	Unspecified Commercial/Industrial	1974	643334
D	196m S	Paper Mills	1965	656691
D	199m S	Unspecified Mills	1891	758046
F	228m NW	Unspecified Ground Workings	1938	776377
F	228m NW	Unspecified Ground Workings	1928	776377
2	244m S	Pump	1851	675597
C	250m SW	Paper Mills	1965	762642
G	271m NE	Cemetery	1981	790080
G	271m NE	Cemetery	1974	790080
G	271m NE	Cemetery	1965	790080
G	271m NE	Cemetery	1955	777556
G	276m NE	Cemetery	1938	784114
G	276m NE	Cemetery	1891	784114
G	276m NE	Cemetery	1928	784114
G	276m NE	Cemetery	1908	784114
D	282m S	Unspecified Mills	1938	712213
D	282m S	Unspecified Mills	1928	712213
D	282m S	Unspecified Mills	1908	712213



ID	Location	Land Use	Date	Group ID
3	287m NE	Unspecified Tank	1908	674828
C	308m SW	Refuse Heap	1928	677984
4	330m N	Nursery	1965	679939
5	356m SE	Bleach Works	1851	658157
H	358m NE	Unspecified Pit	1938	744132
H	358m NE	Unspecified Pit	1891	744132
H	358m NE	Unspecified Pit	1928	744132
H	358m NE	Unspecified Pit	1908	744132
I	370m SE	Unspecified Mills	1891	725054
J	380m SE	Bleaching and Finishing Mills	1965	693882
J	393m SE	Unspecified Mills	1955	700103
K	412m S	Settling Tanks	1955	774001
K	413m S	Filter Beds	1908	700834
K	414m S	Settling Tanks	1928	711911
K	415m S	Filter Beds	1955	695395
K	416m S	Filter Beds	1965	711703
K	418m S	Filter Beds	1938	695395
K	418m S	Filter Beds	1928	695395
J	421m SE	Unspecified Mills	1938	731631
J	421m SE	Unspecified Mills	1928	731631
J	421m SE	Unspecified Mills	1908	731631
N	426m N	Unspecified Pit	1908	691006
P	452m W	Unspecified Warehouse	1977	716907
P	452m W	Unspecified Warehouse	1988	770363
Q	455m W	Unspecified Works	1991	782230
Q	458m W	Unspecified Heap	1928	650894
S	459m SW	Cabinet Works	1965	767569
S	459m SW	Cabinet Works	1955	767569



ID	Location	Land Use	Date	Group ID
T	461m SW	Settling Tanks	1938	681805
N	465m N	Refuse Heap	1938	705984
N	465m N	Refuse Heap	1928	705984
Q	474m W	Oil and Tallow Works	1908	652452
T	478m SW	Settling Tanks	1938	681804
S	484m SW	Unspecified Commercial/Industrial	1981	774222
S	484m SW	Unspecified Commercial/Industrial	1974	774222
Q	488m W	Refuse Heap	1965	677981
S	491m SW	Cotton Weaving Mill	1938	720424
S	491m SW	Cotton Weaving Mill	1928	720424
I	492m S	Print Works	1851	680239
7	493m SW	Chemical Works	1908	682691
Q	499m W	Candle Works	1938	691499
Q	499m W	Tallow and Candle Works	1928	670840

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

46

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 20**

ID	Location	Land Use	Date	Group ID
A	33m SW	Tanks	1930	93773
A	33m SW	Tanks	1937	93773
A	64m SW	Unspecified Tank	1930	100776
A	64m SW	Unspecified Tank	1937	100776
A	64m S	Tanks	1989	90548
A	64m S	Tanks	1956	90548



ID	Location	Land Use	Date	Group ID
A	64m S	Tanks	1970	90548
A	64m S	Tanks	1984	90548
A	64m S	Tanks	1987	90548
A	65m S	Tanks	1956	90548
A	65m S	Tanks	1969	90548
A	66m S	Tanks	1995	90548
C	262m SW	Unspecified Tank	1995	84763
C	280m SW	Unspecified Tank	1987	93576
C	281m SW	Unspecified Tank	1989	95103
C	282m SW	Unspecified Tank	1995	93576
D	342m S	Unspecified Tank	1995	96960
D	343m S	Unspecified Tank	1956	90252
D	343m S	Unspecified Tank	1969	90252
D	343m S	Unspecified Tank	1956	90252
D	343m S	Unspecified Tank	1970	90252
D	379m S	Unspecified Tank	1969	103228
D	379m S	Unspecified Tank	1995	103228
D	380m S	Unspecified Tank	1956	103228
D	380m S	Unspecified Tank	1956	103228
D	380m S	Unspecified Tank	1970	103228
K	402m S	Settling Tanks	1956	95331
K	402m S	Settling Tanks	1969	92977
K	407m S	Tanks	1910	92807
K	408m S	Tanks	1969	90127
K	408m S	Tanks	1995	90127
K	408m S	Tanks	1970	90127
K	411m S	Settling Tanks	1956	100132
K	411m S	Settling Tanks	1970	100132



ID	Location	Land Use	Date	Group ID
K	412m S	Tanks	1995	103139
K	412m S	Tanks	1969	98098
K	413m S	Tanks	1970	98098
K	418m S	Settling Tanks	1930	101645
K	418m S	Settling Tanks	1937	101645
M	426m S	Unspecified Tank	1969	99896
M	427m S	Unspecified Tank	1995	103120
M	427m S	Unspecified Tank	1970	100970
6	442m W	Unspecified Tank	1987	84761
J	489m SE	Unspecified Tank	1956	89714
J	489m SE	Unspecified Tank	1967	89714
J	489m SE	Unspecified Tank	1956	89714

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

32

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 20**

ID	Location	Land Use	Date	Group ID
A	48m S	Electricity Substation	1970	45663
A	53m S	Electricity Substation	1956	55327
A	53m S	Electricity Substation	1969	55327
A	53m S	Electricity Substation	1956	55327
A	53m S	Electricity Substation	1984	52677
A	53m S	Electricity Substation	1987	52677
E	199m NW	Electricity Substation	1995	46880
E	199m NW	Electricity Substation	1989	58972



ID	Location	Land Use	Date	Group ID
E	200m NW	Electricity Substation	1984	58972
E	200m NW	Electricity Substation	1987	58972
C	328m SW	Electricity Substation	1956	52101
C	328m SW	Electricity Substation	1969	52101
C	329m SW	Electricity Substation	1956	52101
C	329m SW	Electricity Substation	1970	52101
D	362m S	Electricity Substation	1995	56145
D	362m S	Electricity Substation	1969	56145
D	362m S	Electricity Substation	1970	56145
L	406m NW	Electricity Substation	1973	52862
L	406m NW	Electricity Substation	1995	52862
O	436m W	Electricity Substation	1989	45668
O	438m W	Electricity Substation	1995	45669
U	468m NE	Electricity Substation	1996	45657
U	474m NE	Electricity Substation	1971	45660
W	496m SW	Electricity Substation	1969	52486
W	496m SW	Electricity Substation	1956	52486
W	496m SW	Electricity Substation	1995	50012
W	496m SW	Electricity Substation	1956	55428
W	496m SW	Electricity Substation	1970	55428
V	497m S	Electricity Transformer	1969	46544
V	497m S	Electricity Substation	1970	55391
V	497m S	Electricity Substation	1982	55391
V	497m S	Electricity Substation	1992	55391

This data is sourced from Ordnance Survey / Groundsure.



2.4 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. 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

18

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 20**

ID	Location	Land Use	Date	Group ID
A	On site	Garage	1995	19697
A	On site	Garage	1989	19697
B	On site	Garage	1984	19515
B	On site	Garage	1987	19515
B	1m N	Garage	1956	18178
B	1m N	Garage	1970	18178
B	8m N	Garage	1969	15625
B	11m W	Garage	1995	18929
B	12m NW	Garage	1989	18929
B	12m NW	Garage	1956	16694
R	457m S	Garage	1969	16477
R	470m S	Garage	1967	17768
R	470m S	Garage	1970	17768
R	470m S	Garage	1982	17768
R	472m S	Service Station	1956	17788
R	481m S	Service Station	1956	17788

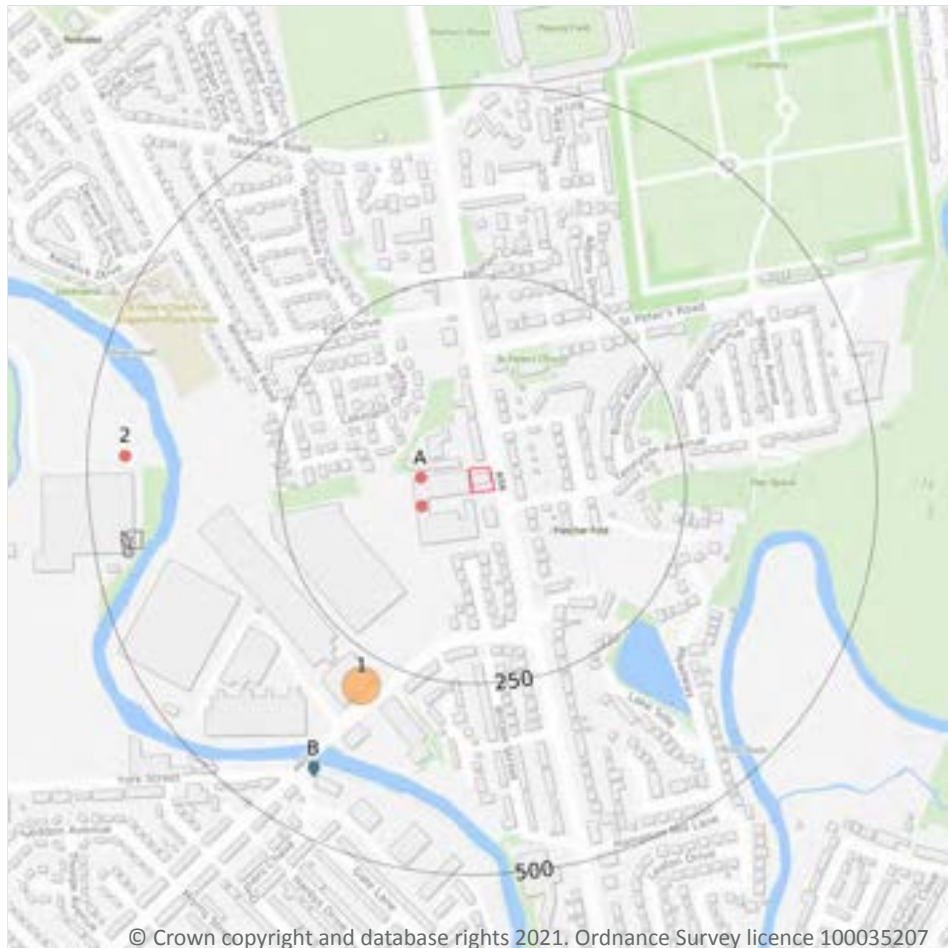


ID	Location	Land Use	Date	Group ID
V	494m S	Garage	1982	19141
V	494m S	Garage	1992	19141

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (LA/OS)
- Historical waste sites
- 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

2

Landfill sites identified from Local Authority records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 29**

ID	Location	Site address	Source	Data type
C	453m W	Refuse Tip	1969 mapping	Polygon
C	453m W	Refuse Tip	1969 mapping	Polygon

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

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.

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

3.5 Historical waste sites

Records within 500m

1

Waste site records derived from Local Authority planning records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 29**

ID	Location	Address	Further Details	Date
1	266m SW	Site Address: Greenfields, Dumers Lane, Thumbs Up (Bury), BURY, Greater Manchester, BL9 9UT	Type of Site: Research/Development & Recycling Unit Planning application reference: 53186 Description: Scheme comprises demolition of warehouse and construction of a research and development and recycling building. The associated works include access roads, enabling, infrastructure, sewer systems and landscaping. Construction - block, brick, concrete, internal partitions, metal cladding walls; linoleum/vinyl, raised access floor; single ply membrane roof; double glazed, rooflight windows; double glazed, fire, metal, timber doors; black top surfacing, drain covers, fencing, kerbing, planting, retaining, Tarmac surfacing, white lining site works; access controls, bathroom, fire alarm system, fire escapes, kitchen fittings. An application (ref: 53186) for detailed planning permission was granted by Bury M.B.C. We have been advised that this scheme is on hold. The project status will be re-checked on a regular basis. We have been advised that this scheme is on hold. The project status will be re-checked on a regular basis. Data source: Historic Planning Application Data Type: Point	-

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

3.6 Licensed waste sites

Records within 500m

3

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

Features are displayed on the Waste and landfill map on **page 29**



ID	Location	Details		
B	417m SW	Site Name: Royden Polythene (exports) Ltd Site Address: Unit B, Dumers Lane, Radcliffe, Bury, Lancashire, M26 2QJ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ROY001 EPR reference: EA/EPR/AP3698CD/S002 Operator: Royden Polythene (Exports) Ltd Waste Management licence No: 50101 Annual Tonnage: 0	Issue Date: 19/11/2002 Effective Date: - Modified: - Surrendered Date: Apr 23 2007 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered
B	417m SW	Site Name: Royden Polythene (exports) Ltd Site Address: Unit B, Dumers Lane, Radcliffe, Bury, Lancashire, M26 2QJ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ROY001 EPR reference: EA/EPR/AP3698CD/S002 Operator: Royden Polythene (exports) Ltd Waste Management licence No: 50101 Annual Tonnage: 0	Issue Date: 19/11/2002 Effective Date: - Modified: - Surrendered Date: Apr 23 2007 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered
B	417m SW	Site Name: Royden Polythene (exports) Ltd Site Address: Unit B, Dumers Lane, Radcliffe, Bury, Lancashire, M26 2QJ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ROY001 EPR reference: EA/EPR/AP3698CD/S002 Operator: Royden Polythene (Exports) Ltd Waste Management licence No: 50101 Annual Tonnage: 0	Issue Date: 19/11/2002 Effective Date: - Modified: - Surrendered Date: Apr 23 2007 12:00AM 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

5

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 29**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	65m W	Derby Works Manchester Road BURY Lancashire BL9 9NX	EPR/TE5385ZU /A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste to manufacture finished goods
A	69m W	DERBY WORKS, MANCHESTER ROAD, BURY, BL9 9NX	WEX217039	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
A	69m W	DERBY WORKS, MANCHESTER ROAD, BURY, BL9 9NX	WEX111567	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
A	69m W	DERBY WORKS, MANCHESTER ROAD, BURY, BL9 9NX	WEX071004	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
2	451m W	-	WEX209174	Using waste exemption	Not on a farm	Use of waste in construction

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)
- ◆ Licensed Discharges to controlled waters

4.1 Recent industrial land uses

Records within 250m

13

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 34**

ID	Location	Company	Address	Activity	Category
A	26m W	Motorpool Services	Unit 4 Finneys Business Centre, Manchester Road, Bury, Greater Manchester, BL9 9NS	Vehicle Repair, Testing and Servicing	Repair and Servicing
A	40m NW	Business Centre	Greater Manchester, BL9	Business Parks and Industrial Estates	Industrial Features



ID	Location	Company	Address	Activity	Category
A	41m NW	Miller Independent	Unit 6 Finneys Business Centre, Manchester Road, Bury, Greater Manchester, BL9 9NS	Vehicle Repair, Testing and Servicing	Repair and Servicing
A	47m NW	P R S (Plastic Repair Services)	Derby Garage, Manchester Road, Bury, Greater Manchester, BL9 9NS	Cutting, Drilling and Welding Services	Construction Services
B	51m S	Electricity Sub Stations	Greater Manchester, BL9	Electrical Features	Infrastructure and Facilities
A	53m NW	Finneys Service & MOT Centre Ltd	Unit 1-2 Finneys Business Centre, Manchester Road, Bury, Greater Manchester, BL9 9NS	Vehicle Repair, Testing and Servicing	Repair and Servicing
A	65m W	Melba Swintex	Derby Works, Manchester Road, Bury, Greater Manchester, BL9	Electronic Equipment	Industrial Products
B	69m S	Tank	Greater Manchester, BL9	Tanks (Generic)	Industrial Features
A	72m W	Satellite Sound & Vision	Unit 8 Finneys Business Centre, Manchester Road, Bury, Greater Manchester, BL9 9NS	Electrical Equipment Repair and Servicing	Repair and Servicing
A	84m W	Electricity Sub Station	Greater Manchester, BL9	Electrical Features	Infrastructure and Facilities
1	93m SE	H Gadian	417, Manchester Road, Bury, Greater Manchester, BL9 9RY	Sports and Leisure Equipment Repair	Repair and Servicing
2	202m NW	Electricity Sub Station	Greater Manchester, BL9	Electrical Features	Infrastructure and Facilities
3	226m SW	Thumbs Up Bury Ltd	Greenfields, Dumers Lane, Bury, Greater Manchester, BL9 9UT	Rubber, Silicones and Plastics	Industrial 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 34**

ID	Location	Company	Address	LPG	Status
A	On site	ESSO	Manchester Road, Bury, Greater Manchester, BL9 9NS	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 34**

ID	Location	Company	Address	Operational status	Tier
5	426m SW	J and W Whewell Limited	J and W Whewell Limited, Newbridge Chemical Works, York Street, Radcliffe, Bury, Greater Manchester, M26 2GL	Historical 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**3**

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 34**

ID	Location	Address	Details	
A	On site	Derby Garage, Manchester Road, Bury, BL9 9NT	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
A	65m W	Melba Swintex Ltd, Derby Works, Manchester Road, Bury, BL9 9NX	Process: Coating Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
4	316m S	Bibby & Baron, Dumers Lane, BL9 7PF	Process: Coating Processes Status: Historical 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

7

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

Features are displayed on the Current industrial land use map on **page 34**

ID	Location	Address	Details	
C	376m SW	REDVALES ROAD CSO, REDVALES ROAD, BURY, ., LANCASHIRE, BL9 9PU	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01BRY0024 Permit Version: 1 Receiving Water: CULVERT RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: - Effective Date: 01/01/1995 Revocation Date: 02/09/2010



ID	Location	Address	Details	
C	376m SW	REDVALES ROAD CSO, REDVALES ROAD, BURY, ., LANCASHIRE, BL9 9PU	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01BRY0024 Permit Version: 2 Receiving Water: CULVERT RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 04/02/2016
D	387m SE	MEADWAY WW NTWK PS, MEADWAY, ., BURY, LANCASHIRE, BL9 9TY	Effluent Type: MISCELLANEOUS DISCHARGES - EMERGENCY DISCHARGES Permit Number: 016982123 Permit Version: 1 Receiving Water: RIVER ROCH	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1900 Revocation Date: 01/01/1900
D	387m SE	MEADWAY WW NTWK PS, MEADWAY, ., BURY, LANCASHIRE, BL9 9TY	Effluent Type: MISCELLANEOUS DISCHARGES - EMERGENCY DISCHARGES Permit Number: 01BRY0059 Permit Version: 1 Receiving Water: RIVER ROCH	Status: VARIED UNDER EPR 2010 Issue date: - Effective Date: 01/01/1995 Revocation Date: 02/09/2010
D	387m SE	MEADWAY WW NTWK PS, MEADWAY, ., BURY, LANCASHIRE, BL9 9TY	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01BRY0059 Permit Version: 2 Receiving Water: RIVER ROCH	Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 18/09/2017
D	388m SE	MEADWAY WW NTWK PS, MEADWAY, ., BURY, LANCASHIRE, BL9 9TY	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01BRY0059 Permit Version: 3 Receiving Water: RIVER ROCH	Status: VARIED UNDER EPR 2010 Issue date: 19/09/2017 Effective Date: 19/09/2017 Revocation Date: -
6	484m NW	REDVALES ROAD CSO, REDVALES ROAD, BURY, ., LANCASHIRE, BL9 9PU	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01BRY0024 Permit Version: 3 Receiving Water: RIVER IRWELL VIA CULVERT	Status: VARIED UNDER EPR 2010 Issue date: 05/02/2016 Effective Date: 05/02/2016 Revocation Date: -

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**0**

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

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.

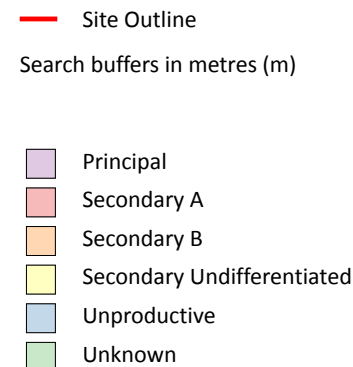
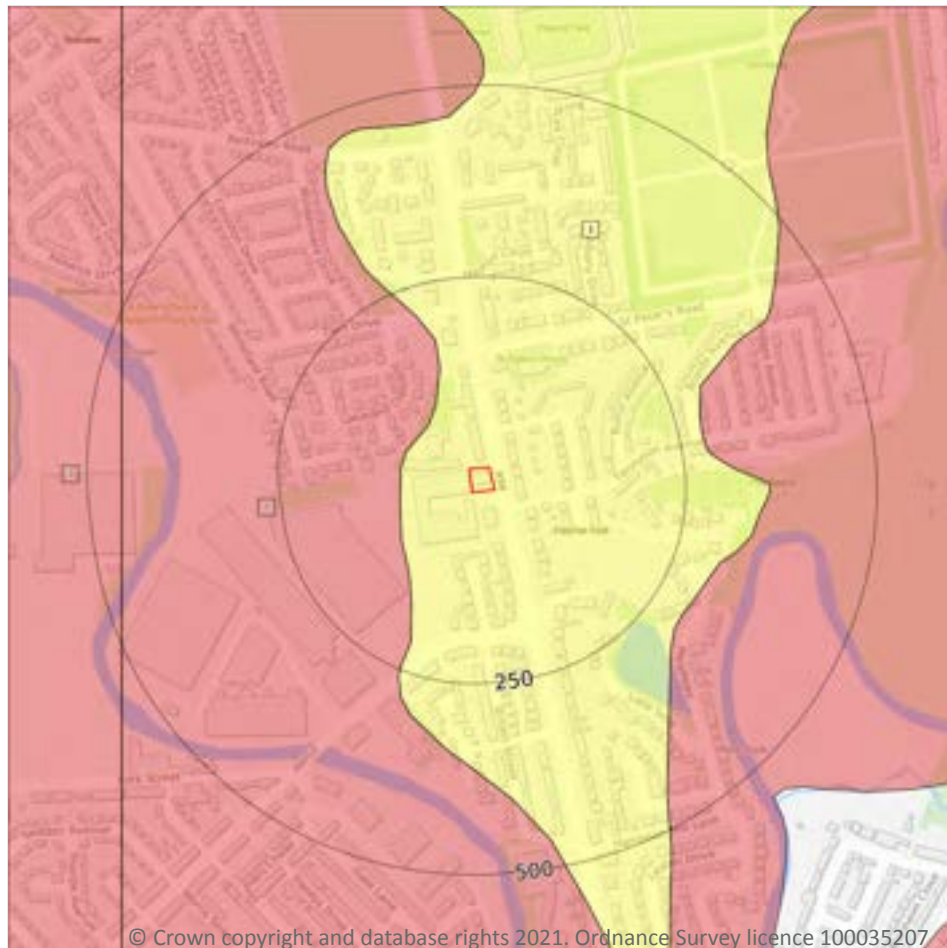
4.21 Pollution inventory radioactive waste

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



5.1 Superficial aquifer

Records within 500m

3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 42**

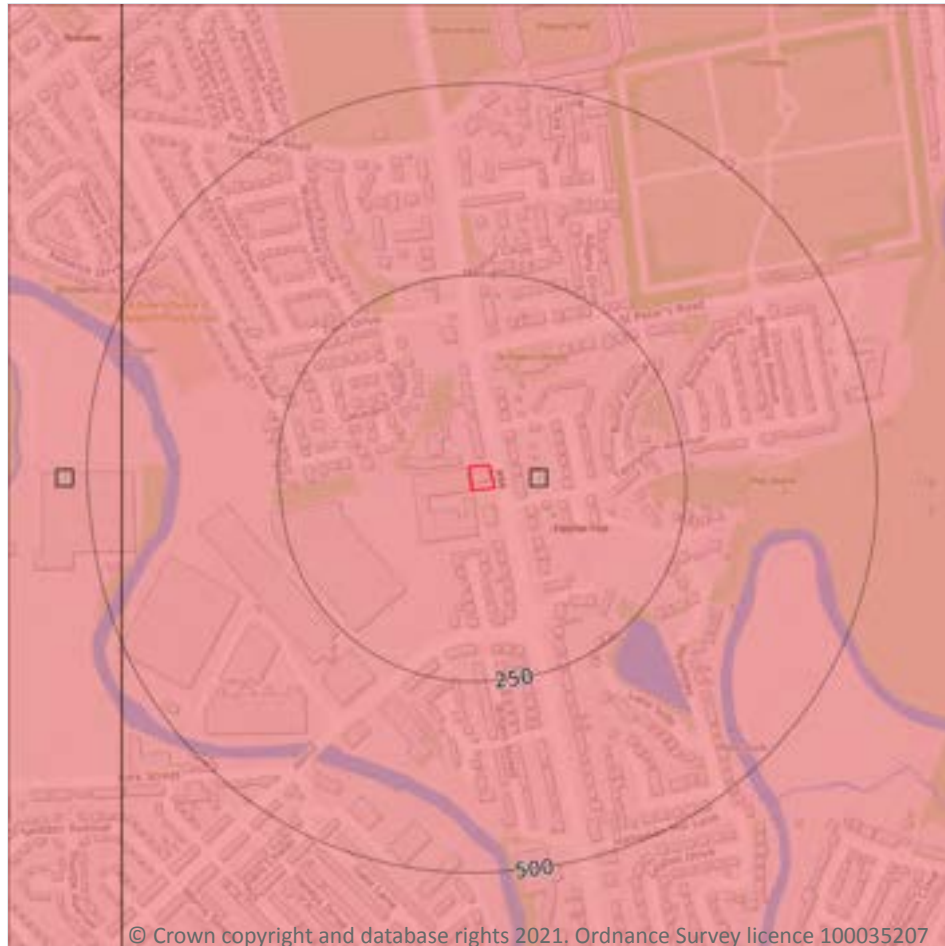
ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	78m NW	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

ID	Location	Designation	Description
3	454m W	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 44**

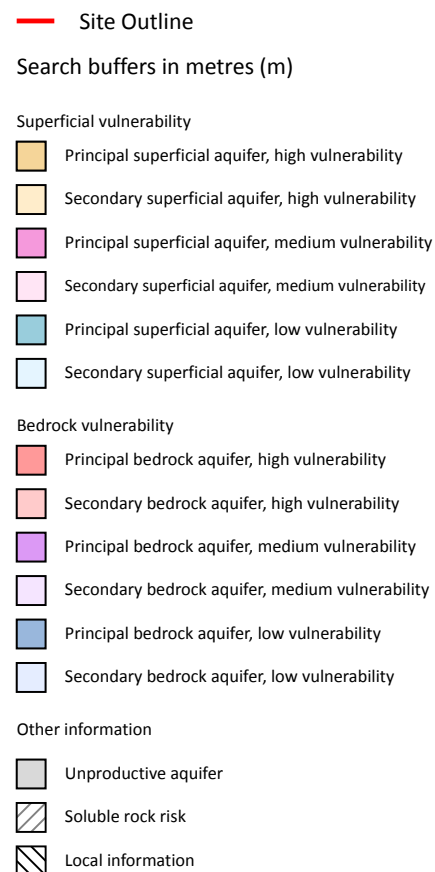
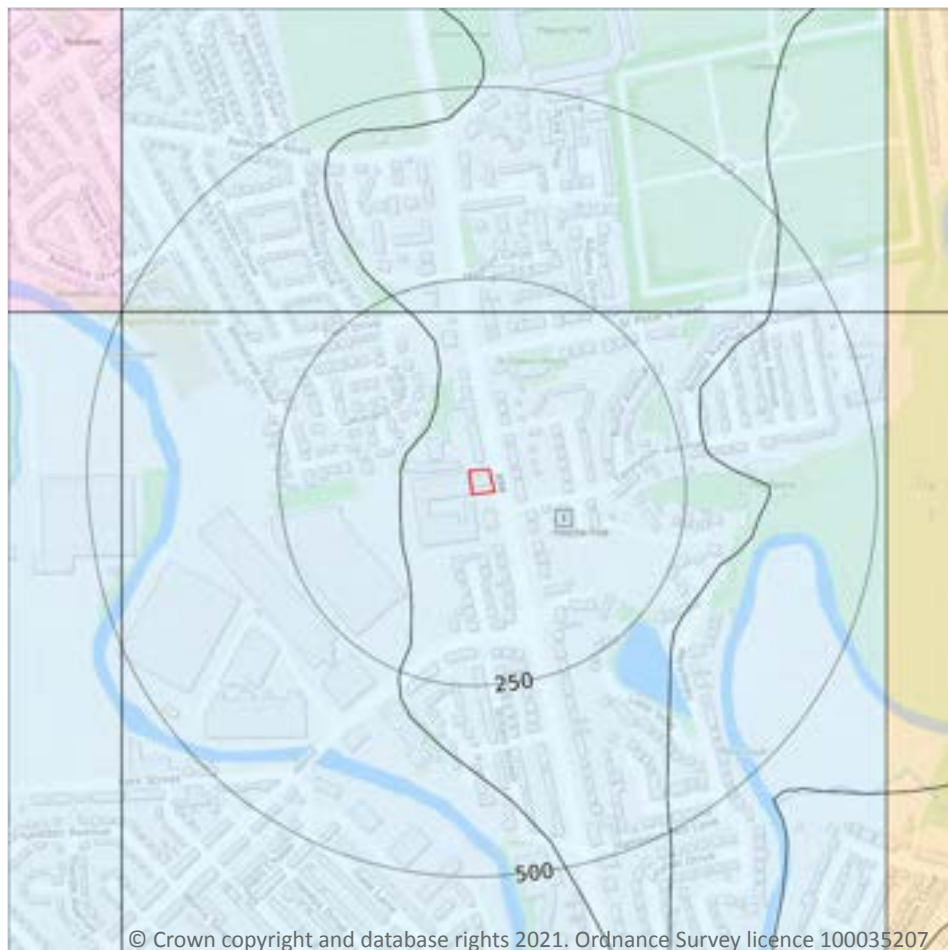
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	454m W	Secondary 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



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 46**



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Medium	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.

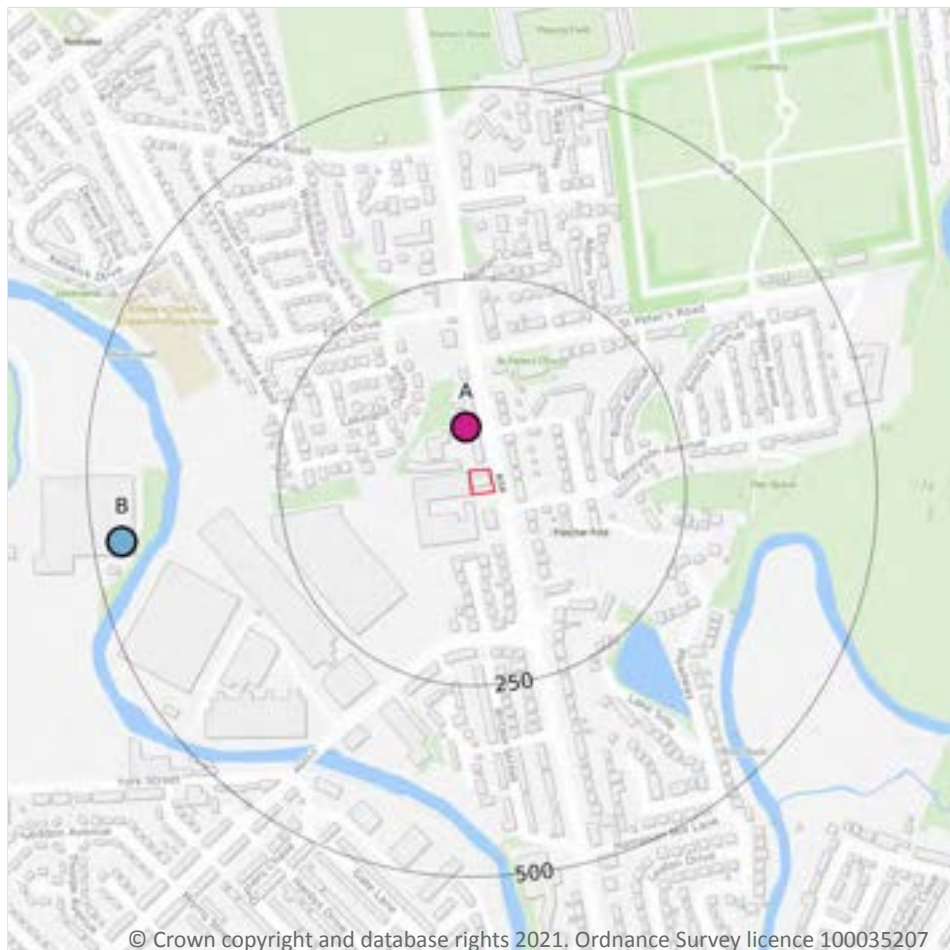
5.5 Groundwater vulnerability- local information

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

12

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 48**

ID	Location	Details	
A	58m N	Status: Historical Licence No: 2569001258 Details: Pollution Remediation Direct Source: Ground Water - North West Region Point: "WELL POINT SYSTEM AT MANCHESTER ROAD, BURY" Data Type: Point Name: TOTALFINAELF UK LTD Easting: 380450 Northing: 408850	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 12/06/2002 Expiry Date: - Issue No: 1 Version Start Date: 12/06/2002 Version End Date: -
A	58m N	Status: Historical Licence No: 2569001258 Details: Pollution Remediation Direct Source: Ground Water - North West Region Point: WELL POINT SYSTEM AT MANCHESTER ROAD, BURY Data Type: Point Name: TOTALFINAELF UK LTD Easting: 380450 Northing: 408850	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 12/06/2002 Expiry Date: - Issue No: 1 Version Start Date: 12/06/2002 Version End Date: -
-	1190m SE	Status: Historical Licence No: 2569002264R1 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: A BOREHOLE AT BURY GOLF CLUB, BLACKFORD BRIDGE, BURY Data Type: Point Name: RAYMOND ADAMS Easting: 380963 Northing: 407673	Annual Volume (m ³): 7000 Max Daily Volume (m ³): 50 Original Application No: - Original Start Date: 01/06/2007 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 01/04/2008 Version End Date: -
-	1190m SE	Status: Active Licence No: 2569002264R02 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: A BOREHOLE AT BURY GOLF CLUB, BLACKFORD BRIDGE, BURY Data Type: Point Name: Bury Golf Club Limited Easting: 380963 Northing: 407673	Annual Volume (m ³): 7,000 Max Daily Volume (m ³): 50 Original Application No: - Original Start Date: 01/04/2015 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/04/2015 Version End Date: -

ID	Location	Details	
-	1194m E	Status: Historical Licence No: 2569002272 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, PILSWORTH, BURY" Data Type: Point Name: CASTLEBROOK WATER CO. LTD Easting: 381680 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/04/2000 Expiry Date: - Issue No: 3 Version Start Date: 10/09/2002 Version End Date: -
-	1194m E	Status: Historical Licence No: 2569002272 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, PILSWORTH, BURY Data Type: Point Name: CASTLEBROOK WATER CO. LTD Easting: 381680 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/04/2000 Expiry Date: - Issue No: 3 Version Start Date: 10/09/2002 Version End Date: -
-	1196m SE	Status: Historical Licence No: 2569002264 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "A BOREHOLE AT BURY GOLF CLUB, BLACKFORD BRIDGE, BURY" Data Type: Point Name: BURY GOLF CLUB Easting: 380970 Northing: 407670	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 17/04/1997 Expiry Date: 16-Apr-07 Issue No: 100 Version Start Date: 17/04/1997 Version End Date: -
-	1196m SE	Status: Historical Licence No: 2569002264 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: A BOREHOLE AT BURY GOLF CLUB, BLACKFORD BRIDGE, BURY Data Type: Point Name: RAYMOND ADAMS Easting: 380970 Northing: 407670	Annual Volume (m ³): 9000 Max Daily Volume (m ³): 55 Original Application No: - Original Start Date: 17/04/1997 Expiry Date: 16/04/2007 Issue No: 101 Version Start Date: 27/01/2004 Version End Date: 16/04/2007

ID	Location	Details	
-	1196m SE	Status: Historical Licence No: 2569002264R1 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: A BOREHOLE AT BURY GOLF CLUB, BLACKFORD BRIDGE, BURY Data Type: Point Name: RAYMOND ADAMS Easting: 380970 Northing: 407670	Annual Volume (m ³): 7000 Max Daily Volume (m ³): 50 Original Application No: - Original Start Date: 01/06/2007 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 01/04/2008 Version End Date: -
-	1600m NE	Status: Historical Licence No: 2569002063 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "WELL AT WATER FARM, HEAP BRIDGE, BURY" Data Type: Point Name: FISH Easting: 381800 Northing: 409700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date: -
-	1600m NE	Status: Historical Licence No: 2569002063 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: WELL AT WATER FARM, HEAP BRIDGE, BURY Data Type: Point Name: FISH Easting: 381800 Northing: 409700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/02/1966 Version End Date: -
-	1856m E	Status: Active Licence No: NW/069/0002/013 Details: Dewatering Direct Source: Ground Water - North West Region Point: SUMP 'A' AT PILSWORTH LANDFILL SITE, PILSWORTH ROAD, BURY Data Type: Point Name: Viridor Waste Management Ltd Easting: 382340 Northing: 408890	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 31/03/2021 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 31/03/2021 Version End Date: -

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



5.7 Surface water abstractions

Records within 2000m

22

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 48**

ID	Location	Details	
B	462m W	Status: Historical Licence No: 2569001245 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "RIVER IRWELL AT RADCLIFFE, MANCHESTER" Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
B	462m W	Status: Historical Licence No: 2569001245 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "RIVER IRWELL AT RADCLIFFE, MANCHESTER" Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
B	462m W	Status: Historical Licence No: 2569001245 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "RIVER IRWELL AT RADCLIFFE, MANCHESTER" Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -



ID	Location	Details	
B	462m W	Status: Historical Licence No: 2569001245 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: RIVER IRWELL AT RADCLIFFE, MANCHESTER Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
B	462m W	Status: Historical Licence No: 2569001245 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: RIVER IRWELL AT RADCLIFFE, MANCHESTER Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
B	462m W	Status: Historical Licence No: 2569001245 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RIVER IRWELL AT RADCLIFFE, MANCHESTER Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
-	876m W	Status: Active Licence No: NW/069/0001/004 Details: Hydroelectric Power Generation Direct Source: Surface, Non-Tidal - North West Region Point: RIVER IRWELL AT BEALEY'S WEIR Data Type: Point Name: Resolution Hydro Limited Easting: 379607 Northing: 409015	Annual Volume (m ³): 80,000,000 Max Daily Volume (m ³): 259,200 Original Application No: - Original Start Date: 20/12/2010 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/04/2019 Version End Date: -
-	1098m W	Status: Historical Licence No: 2569001158 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "R IRWELL AT RADCLIFFE, MANCHESTER" Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 379400 Northing: 409100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 05/05/2001 Version End Date: -



ID	Location	Details	
-	1098m W	Status: Historical Licence No: 2569001158 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "R IRWELL AT RADCLIFFE, MANCHESTER" Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 379400 Northing: 409100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 05/05/2001 Version End Date: -
-	1098m W	Status: Historical Licence No: 2569001158 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: R IRWELL AT RADCLIFFE, MANCHESTER Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 379400 Northing: 409100	Annual Volume (m ³): 3636800 Max Daily Volume (m ³): 14183.52 Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 05/05/2001 Version End Date: -
-	1098m W	Status: Historical Licence No: 2569001158 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: R IRWELL AT RADCLIFFE, MANCHESTER Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 379400 Northing: 409100	Annual Volume (m ³): 3636800 Max Daily Volume (m ³): 14183.52 Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 05/05/2001 Version End Date: -
-	1254m W	Status: Historical Licence No: 2569004054 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "THE MANCHESTER, BOLTON AND BURY CANAL AT BANK TOP, BURY" Data Type: Point Name: BRITISH WATERWAYS Easting: 379200 Northing: 408790	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 04/12/1998 Version End Date: -

ID	Location	Details	
-	1254m W	Status: Historical Licence No: 2569004054 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: THE MANCHESTER, BOLTON AND BURY CANAL AT BANK TOP, BURY Data Type: Point Name: BRITISH WATERWAYS BOARD Easting: 379200 Northing: 408790	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 04/12/1998 Version End Date: -
-	1458m NW	Status: Historical Licence No: 2569001056 Details: Dust suppression Direct Source: "Surface, Non-Tidal - North West Region" Point: "THE RIVER IRWELL AT HINDS LANE, BURY" Data Type: Point Name: J B SKIPS & SERVICES LTD Easting: 379450 Northing: 409850	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: 01/04/1997 Version End Date: -
-	1458m NW	Status: Historical Licence No: 2569001056 Details: Dust suppression Direct Source: Surface, Non-Tidal - North West Region Point: THE RIVER IRWELL AT HINDS LANE, BURY Data Type: Point Name: J B SKIPS & SERVICES LTD Easting: 379450 Northing: 409850	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: 01/04/1997 Version End Date: -
-	1856m W	Status: Historical Licence No: 2569004019 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "WITHINS RESERVOIR, FED BY & O/FLOW TO UNNAMED TRIB OF R IRW" Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -

ID	Location	Details	
-	1856m W	Status: Historical Licence No: 2569004019 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "WITHINS RESERVOIR, FED BY & O/FLOW TO UNNAMED TRIB OF R IRW" Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -
-	1856m W	Status: Historical Licence No: 2569004019 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: WITHINS RESERVOIR, FED BY & O/FLOW TO UNNAMED TRIB OF R IRW Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -
-	1856m W	Status: Historical Licence No: 2569004019 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: WITHINS RESERVOIR, FED BY & O/FLOW TO UNNAMED TRIB OF R IRW Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -
-	1856m W	Status: Historical Licence No: 2569004019 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: WITHINS RESERVOR FED BY UNNAMED TRIBUTARY OF RIVER IRWELL Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m ³): 270000 Max Daily Volume (m ³): 8728.32 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -



ID	Location	Details	
-	1856m W	Status: Historical Licence No: 2569004019 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: WITHINS RESERVOR FED BY UNNAMED TRIBUTARY OF RIVER IRWELL Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m ³): 270000 Max Daily Volume (m ³): 8728.32 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -
-	1917m SW	Status: Historical Licence No: 2569004004 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY SURFACE DRAINAGE ATRADCLIFFE Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378800 Northing: 407800	Annual Volume (m ³): 40004.8 Max Daily Volume (m ³): 109.104 Original Application No: - Original Start Date: 28/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 05/05/2001 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m

2

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.

Features are displayed on the Abstractions and Source Protection Zones map on **page 48**

ID	Location	Details	
-	1194m E	Status: Historical Licence No: 2569002272 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, PILSWORTH, BURY" Data Type: Point Name: CASTLEBROOK WATER CO. LTD Easting: 381680 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/04/2000 Expiry Date: - Issue No: 3 Version Start Date: 10/09/2002 Version End Date: -



ID	Location	Details	
-	1194m E	Status: Historical Licence No: 2569002272 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, PILSWORTH, BURY Data Type: Point Name: CASTLEBROOK WATER CO. LTD Easting: 381680 Northing: 408700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/04/2000 Expiry Date: - Issue No: 3 Version Start Date: 10/09/2002 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	0
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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
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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.

6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

0

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

0

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

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 59**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	On site	River	Irwell (Rossendale STW to Roch)	GB112069064620	Croal Irwell	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 59**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
10	390m S	River	Irwell (Rossendale STW to Roch)	GB112069064620	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 59**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	On site	Northern Manchester Carboniferous Aquifers	<u>GB41202G101800</u>	Poor	Poor	Good	2019

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



7 River and coastal flooding



- Site Outline
- Search buffers in metres (m)
- River and coastal flooding:
 - High
 - Medium
 - Low
 - Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

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

1

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.

Features are displayed on the River and coastal flooding map on **page 62**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
B	237m SW	Radcliffe And Redvales	2015-12-26 2015-12-26	Main river	Channel capacity exceeded (no raised defences)	Fluvial

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

1

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.

Features are displayed on the River and coastal flooding map on **page 62**

ID	Location	
B	232m SW	Area benefiting from flood defences

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

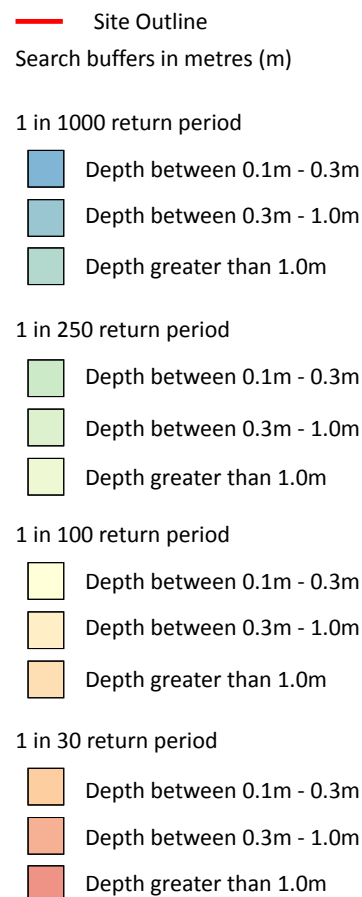
0

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



8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

1 in 1000 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 66**

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.

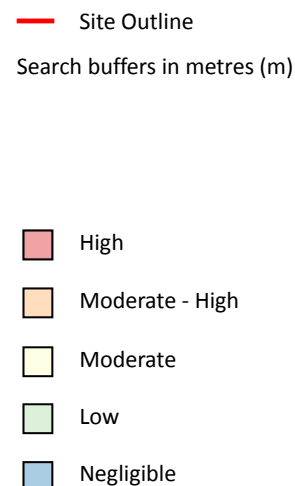
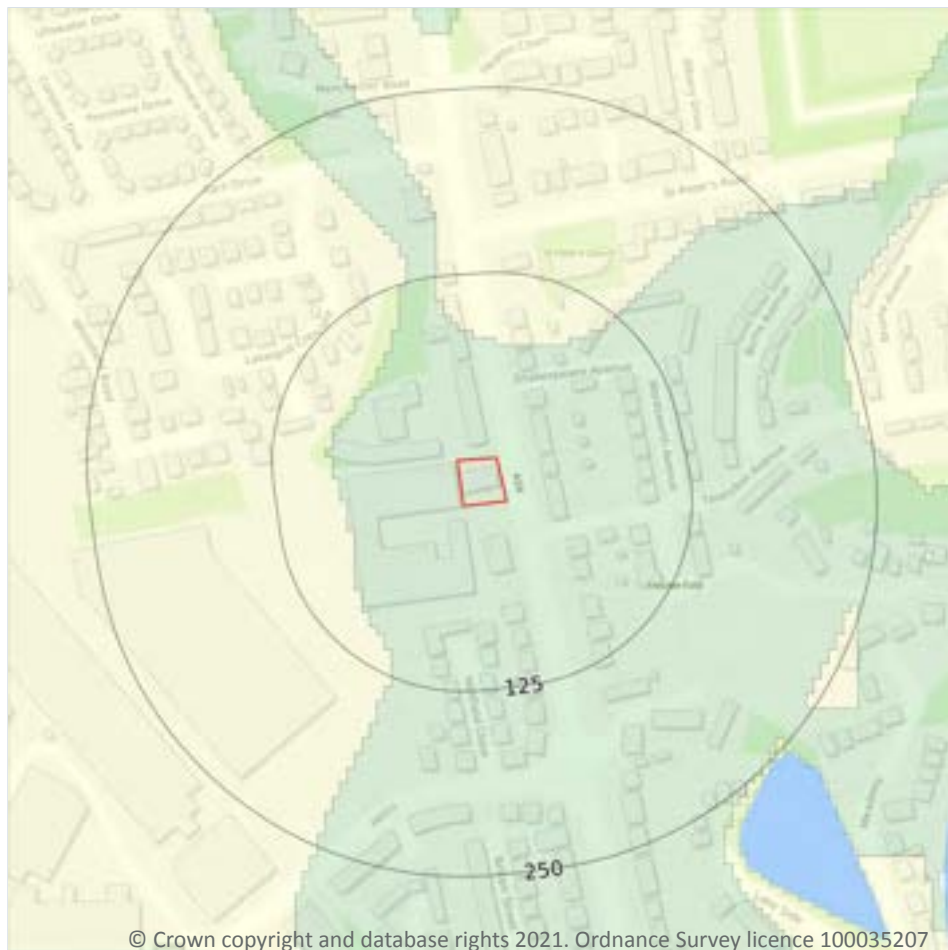
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

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 68**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- + Local Nature Reserves (LNR)
- / Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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.

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**0**

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.

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**1**

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.

Features are displayed on the Environmental designations map on **page 69**

ID	Location	Name	Data source
3	972m E	Hollins Vale	Natural England

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

4

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

Features are displayed on the Environmental designations map on **page 69**

ID	Location	Name	Local Authority name
1	672m S	Merseyside and Greater Manchester	Bury
2	899m SE	Merseyside and Greater Manchester	Bury
4	1089m W	Merseyside and Greater Manchester	Bury
-	1736m E	Merseyside and Greater Manchester	Rochdale

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

0

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.

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

1

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 74**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

0

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.

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



11 Visual and cultural designations



- 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

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

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**1**

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 76**

ID	Location	Name	Grade	Reference Number	Listed date
1	214m E	The Manor House (Including The Crest And The Nook), Redvales, Bury, BL9	II	1067265	29/01/1985

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



11.5 Conservation Areas

Records within 250m**0**

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.

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

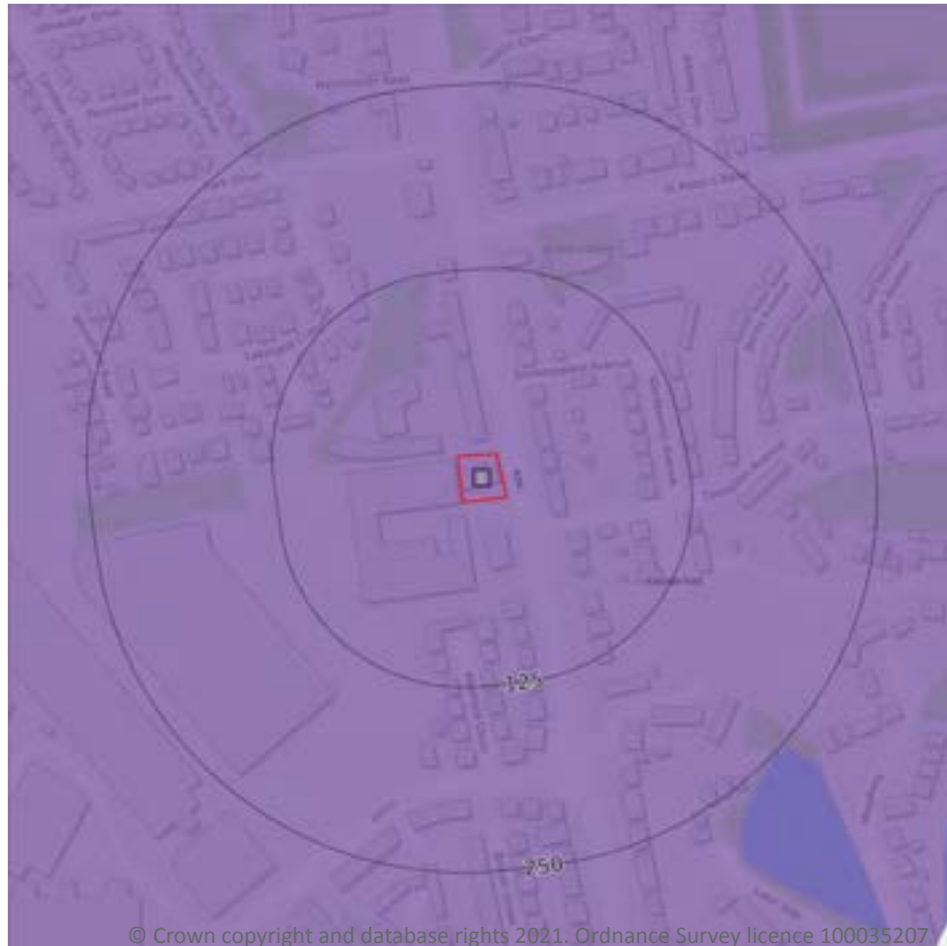
Records within 250m**0**

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 79**

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

10

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 81**

ID	Location	Main Habitat	Other habitats
1	12m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	62m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	175m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	177m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
A	178m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	190m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	213m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	214m N	No main habitat but additional habitats present	Main habitat: DWOOD (INV > 50%)
C	233m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	241m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

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.

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

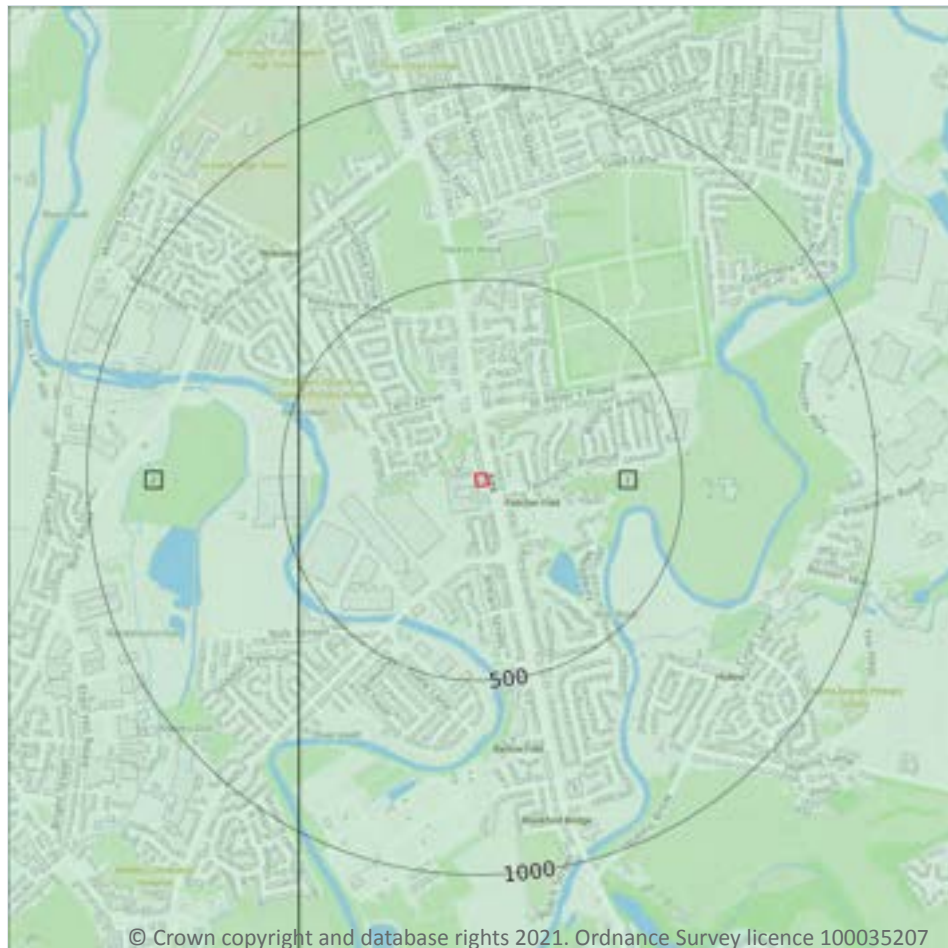
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Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable 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.

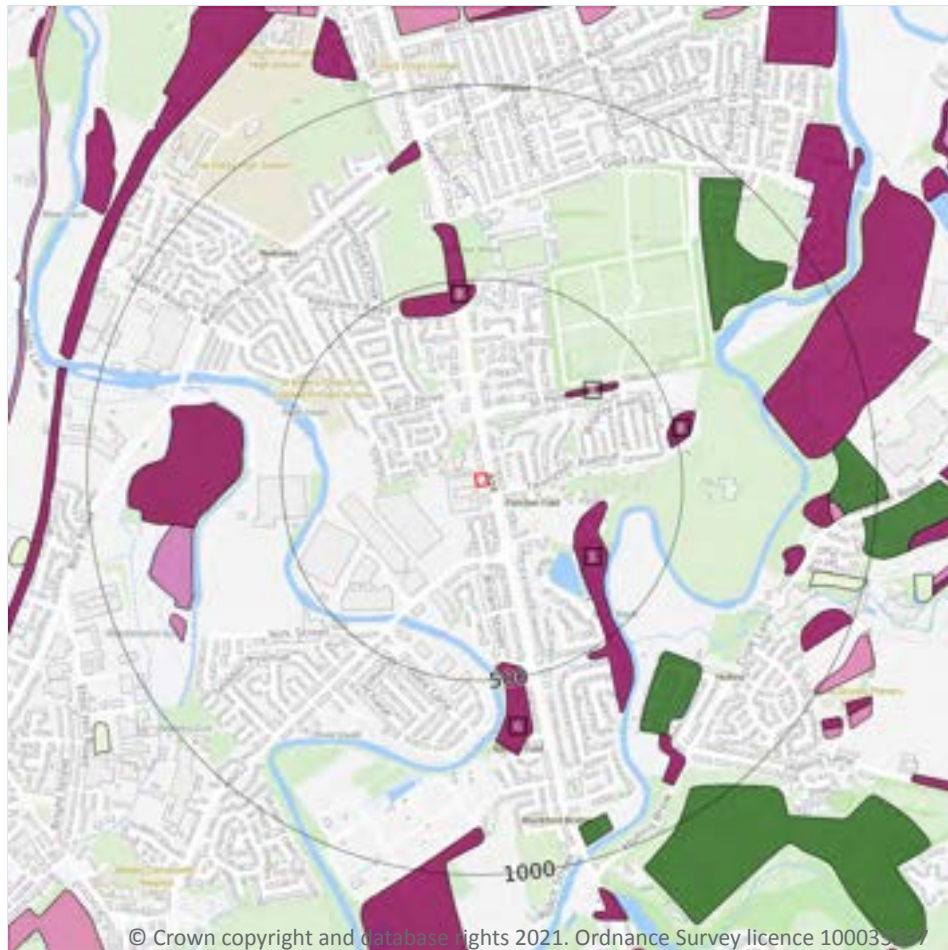
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 83**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SD80NW
2	454m W	Full	Full	Full	Full	SD70NE

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 84**

ID	Location	LEX Code	Description	Rock description
1	252m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	287m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	419m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	458m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

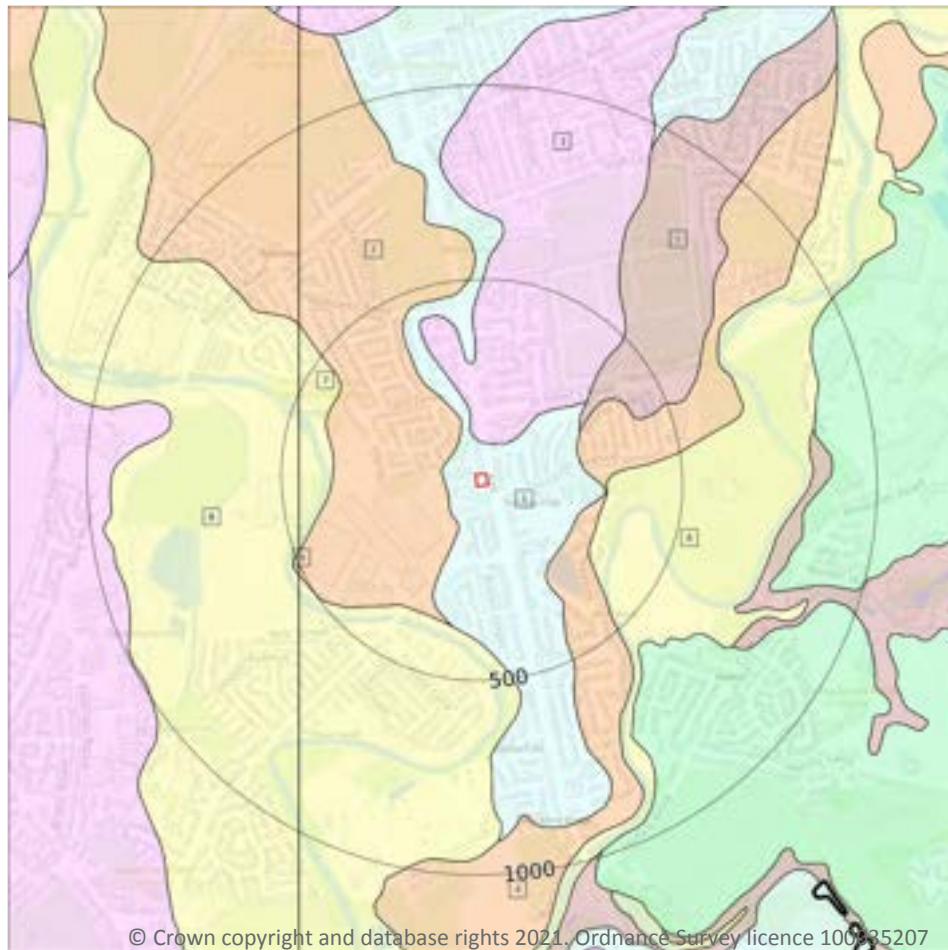


ID	Location	LEX Code	Description	Rock description
5	478m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

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

9

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 86**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	77m W	RTD1-XSV	River Terrace Deposits, 1 - Sand And Gravel	Sand And Gravel
3	78m N	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel



ID	Location	LEX Code	Description	Rock description
4	241m E	RTD1-XSV	River Terrace Deposits, 1 - Sand And Gravel	Sand And Gravel
5	265m NE	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
6	295m E	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
7	367m W	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
8	454m W	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
9	489m W	RTD1-XSV	River Terrace Deposits, 1 - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

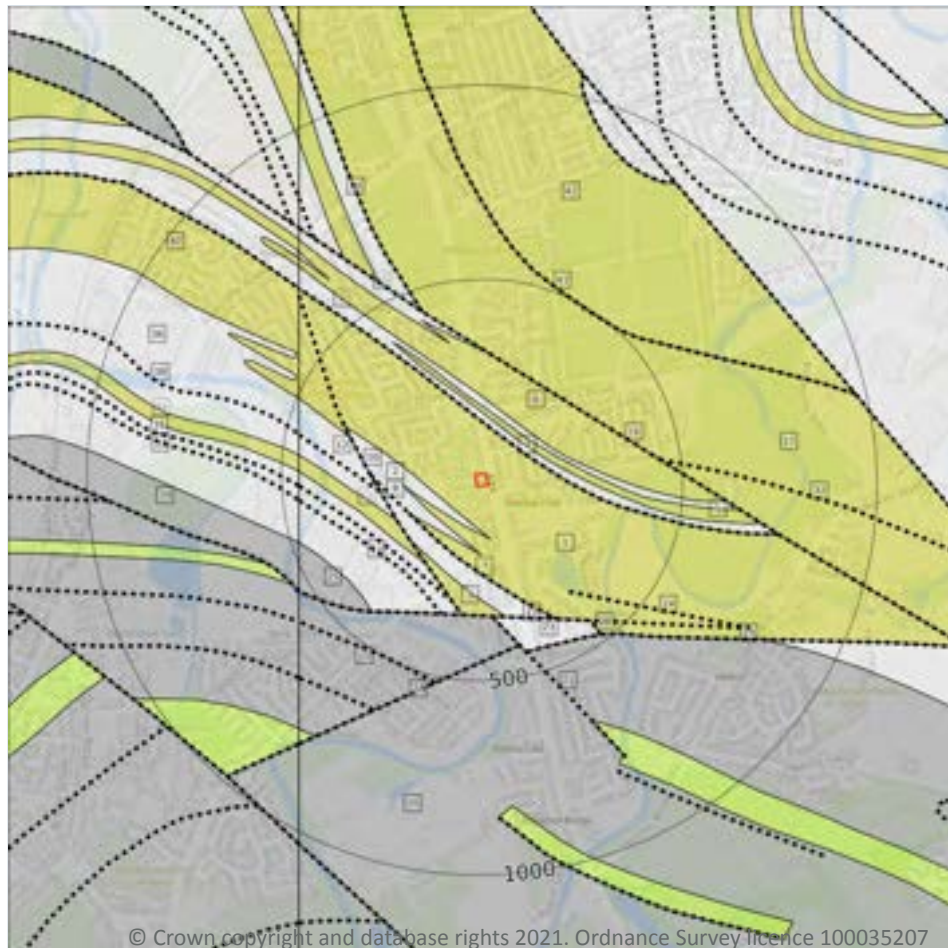
0

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

22

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 88**

ID	Location	LEX Code	Description	Rock age
1	On site	TRBR-SDST	Trencherbone Rock - Sandstone	Langsettian Sub-age
2	84m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
3	101m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

ID	Location	LEX Code	Description	Rock age
5	119m NE	CAR-SDST	Cannel Rock (south Lancashire) - Sandstone	Langsettian Sub-age
6	153m NE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
9	219m SW	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
11	221m SW	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
12	224m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
13	239m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
17	267m NE	TRBR-SDST	Trencherbone Rock - Sandstone	Langsettian Sub-age
19	311m N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
20	332m S	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
23	337m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
25	409m SW	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
26	420m S	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
30	441m N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
33	454m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
34	454m W	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
36	457m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
39	481m W	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
40	495m NW	TRBR-SDST	Trencherbone Rock - Sandstone	Langsettian Sub-age
42	495m NE	CAR-SDST	Cannel Rock (south Lancashire) - 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

21

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 88**

ID	Location	Category	Description
4	101m NE	ROCK	Coal seam, inferred coincident with bedrock geology boundary
7	172m SW	ROCK	Coal seam, inferred coincident with bedrock geology boundary
8	189m W	ROCK	Coal seam, inferred
10	221m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
14	249m W	ROCK	Coal seam, inferred
15	267m SW	ROCK	Coal seam, inferred
16	267m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
18	289m SW	ROCK	Coal seam, inferred
21	332m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
22	337m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
24	344m SE	FAULT	Normal fault, inferred; crossmarks on downthrow side
27	420m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
28	437m SE	ROCK	Coal seam, inferred coincident with bedrock geology boundary
29	440m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
31	441m N	ROCK	Coal seam, inferred coincident with bedrock geology boundary
32	445m E	ROCK	Coal seam, inferred
35	455m W	ROCK	Coal seam, inferred
37	459m W	ROCK	Coal seam, inferred
38	466m W	ROCK	Coal seam, inferred
41	495m NE	ROCK	Coal seam, inferred coincident with bedrock geology boundary
43	499m SW	ROCK	Coal seam, inferred

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

1

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 91**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW085_manchester_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

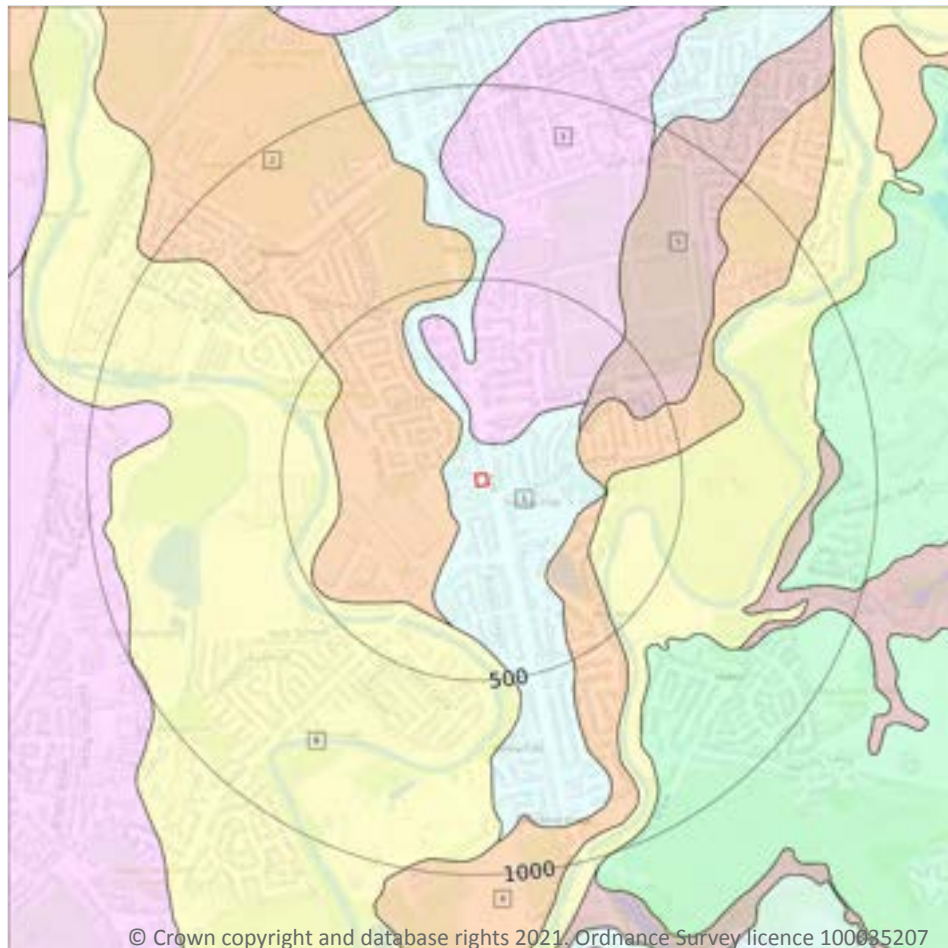
0

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

6

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 93**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	77m W	RTD1-XSV	RIVER TERRACE DEPOSITS, 1	SAND AND GRAVEL
3	78m N	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL



ID	Location	LEX Code	Description	Rock description
4	241m SE	RTD1-XSV	RIVER TERRACE DEPOSITS, 1	SAND AND GRAVEL
5	265m NE	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
6	295m E	ALV-XCZSV	ALLUVIUM	CLAY, SILT, 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	Mixed	High	Low

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

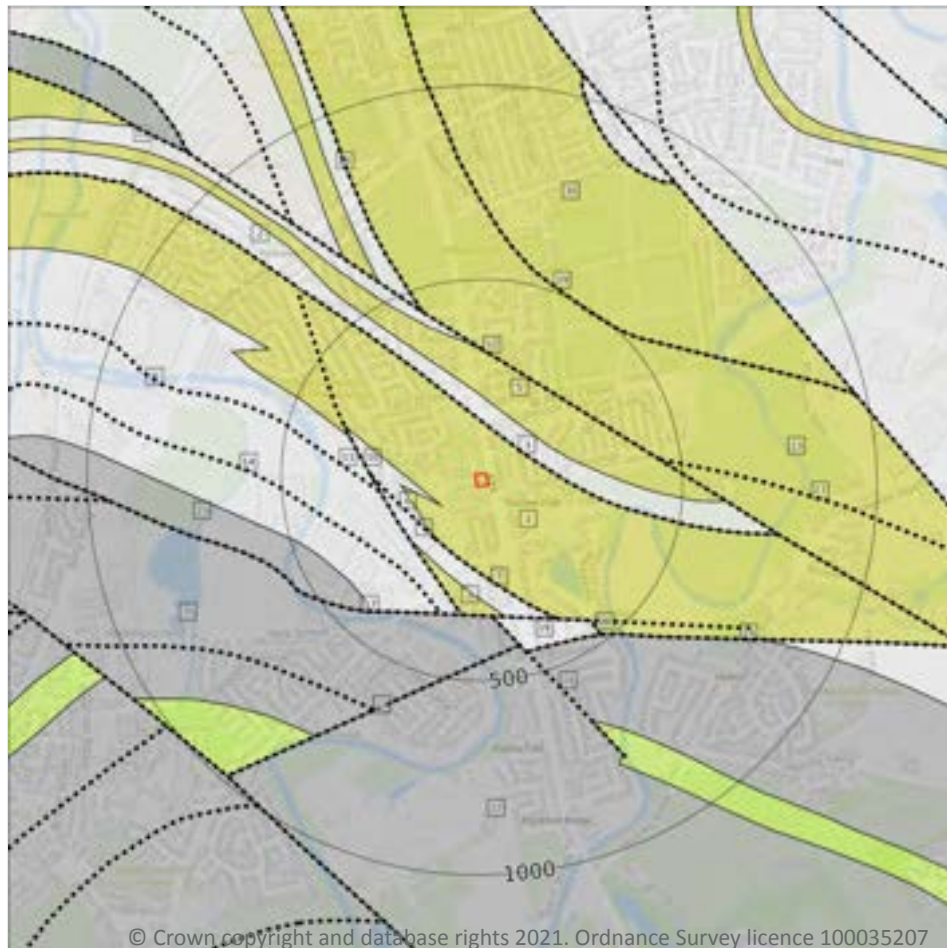
0

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

14

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 95**

ID	Location	LEX Code	Description	Rock age
1	On site	TRBR-SDST	TRENCHBONE ROCK - SANDSTONE	WESTPHALIAN
2	101m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
4	105m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN



ID	Location	LEX Code	Description	Rock age
5	153m NE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
8	219m SW	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
9	221m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
13	267m NE	TRBR-SDST	TRENCHERBONE ROCK - SANDSTONE	WESTPHALIAN
15	311m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
16	332m S	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
19	337m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
20	409m SW	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
22	420m S	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
26	441m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
30	494m NE	CAR-SDST	CANNEL ROCK (SOUTH LANCASHIRE) - SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock 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 bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
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

16

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.

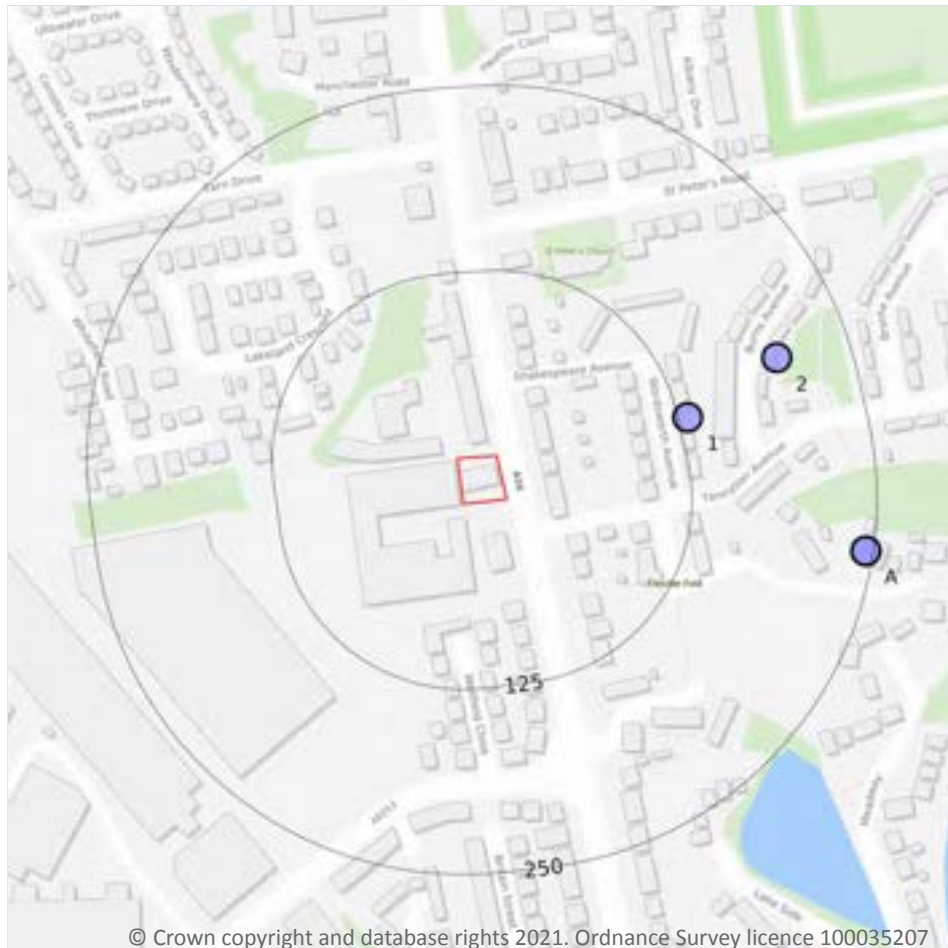
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 95**

ID	Location	Category	Description
3	101m NE	ROCK	Coal seam, inferred
6	172m SW	ROCK	Coal seam, inferred
7	173m SW	ROCK	Coal seam, inferred
10	221m SW	FAULT	Fault, inferred
11	249m W	ROCK	Coal seam, inferred
12	267m NE	FAULT	Fault, inferred
14	289m SW	ROCK	Coal seam, inferred
17	332m S	FAULT	Fault, inferred
18	337m S	FAULT	Fault, inferred
21	420m S	FAULT	Fault, inferred
23	437m SE	ROCK	Coal seam, inferred
24	440m S	FAULT	Fault, inferred
25	441m N	ROCK	Coal seam, inferred
27	445m E	ROCK	Coal seam, inferred
28	466m W	ROCK	Coal seam, inferred
29	494m NE	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

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16.1 BGS Boreholes

Records within 250m

4

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 98**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	132m E	380610 408820	GOSHEN HOUSING. 56	7.32	N	27216
2	200m E	380670 408860	GOSHEN HOUSING. 70	7.29	N	27217
A	245m E	380730 408730	MEADWAY, BURY. 1	8.2	N	27342

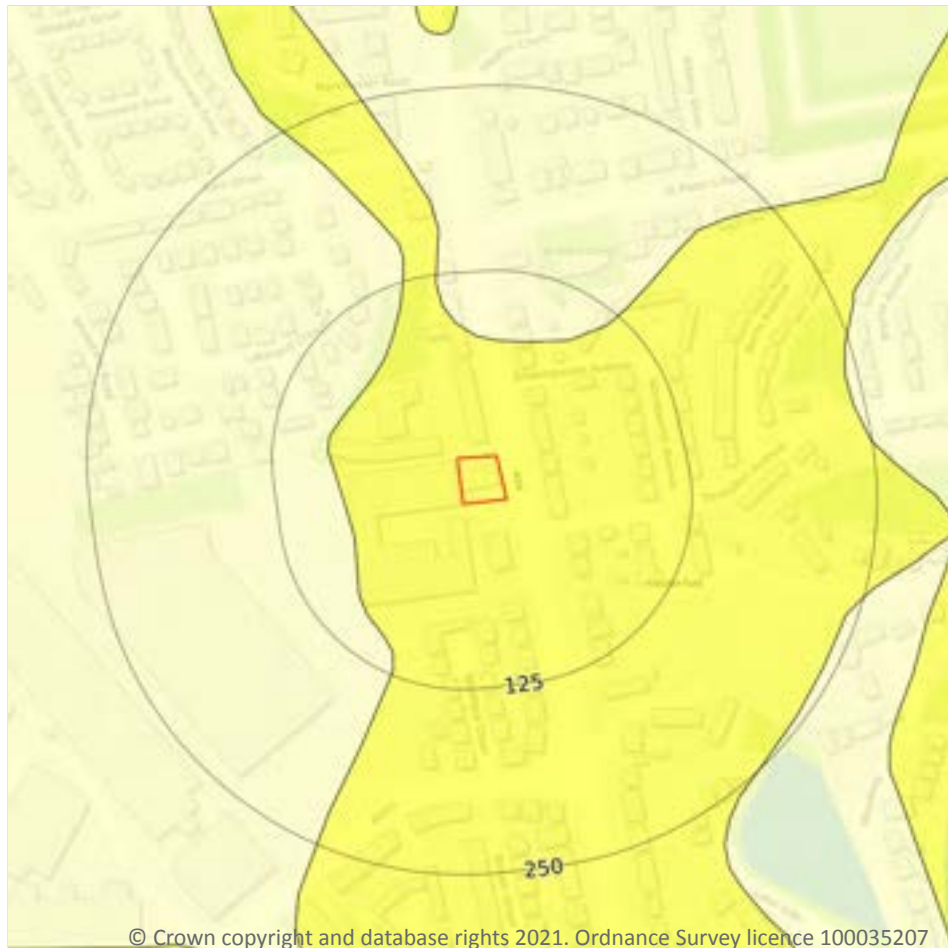


ID	Location	Grid reference	Name	Length	Confidential	Web link
A	245m E	380730 408730	MEADWAY, BURY. 2	6.2	N	27343

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).

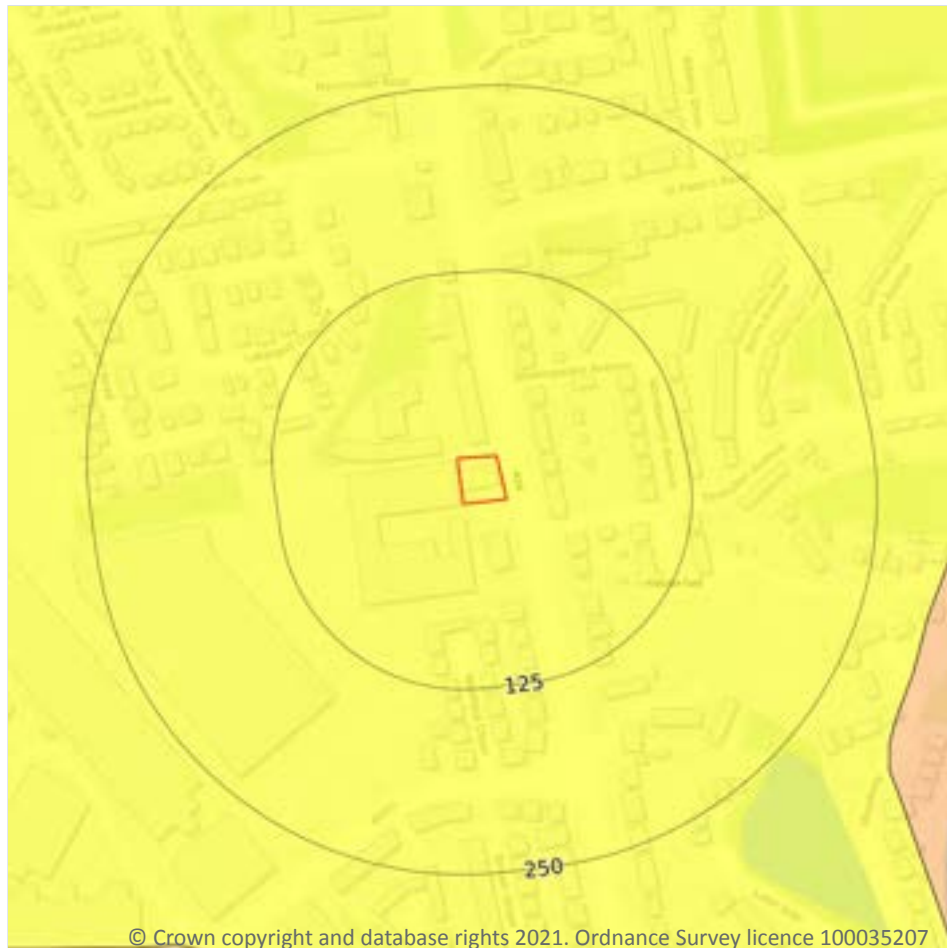
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 100**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

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

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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.

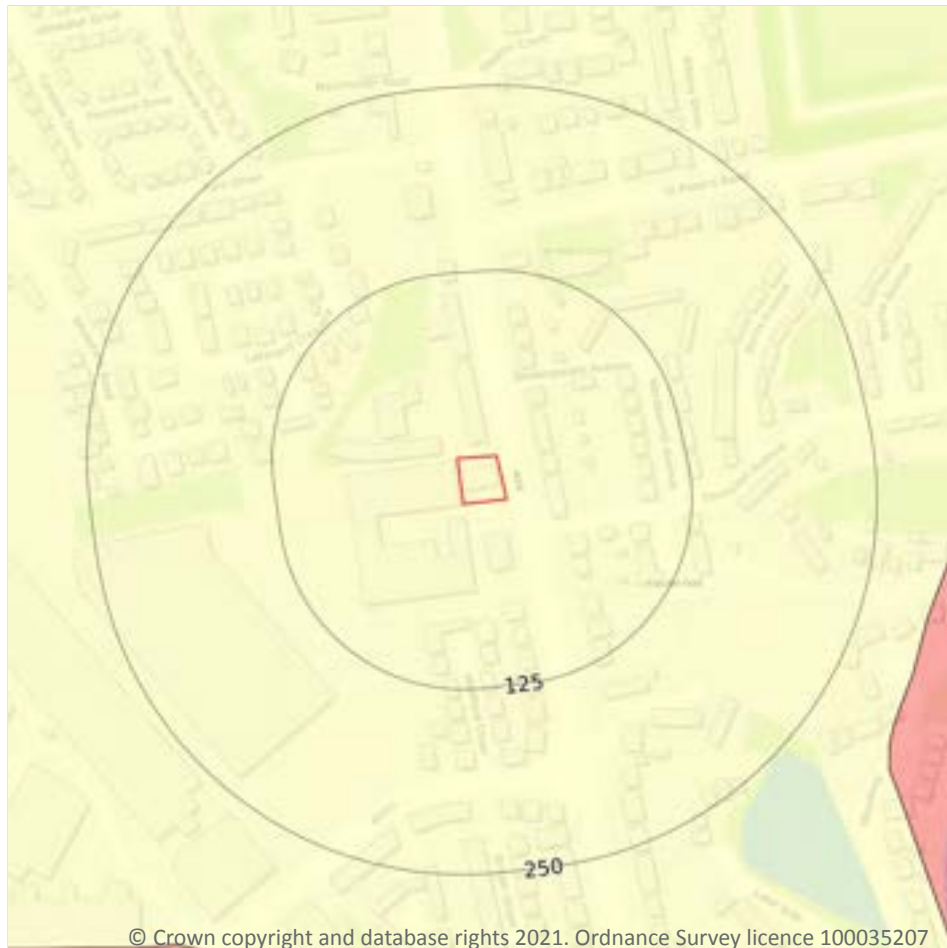
Features are displayed on the Natural ground subsidence - Running sands map on **page 101**

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

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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.

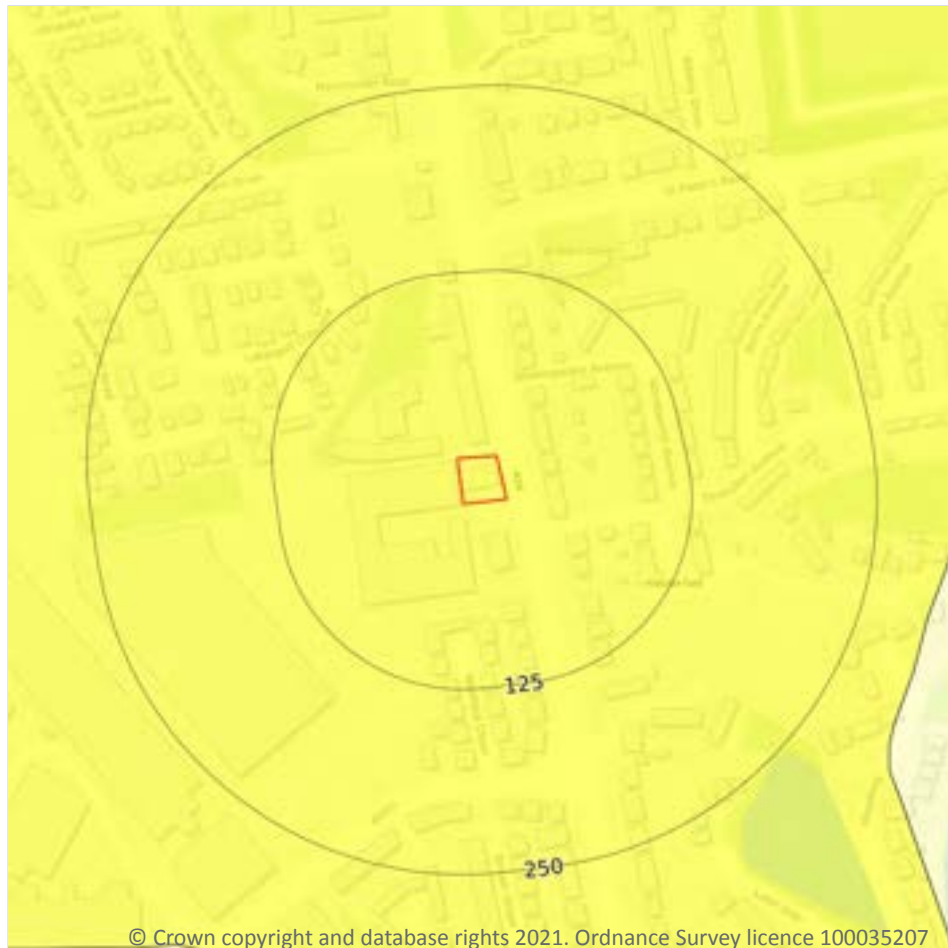
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 102**

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



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- 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.

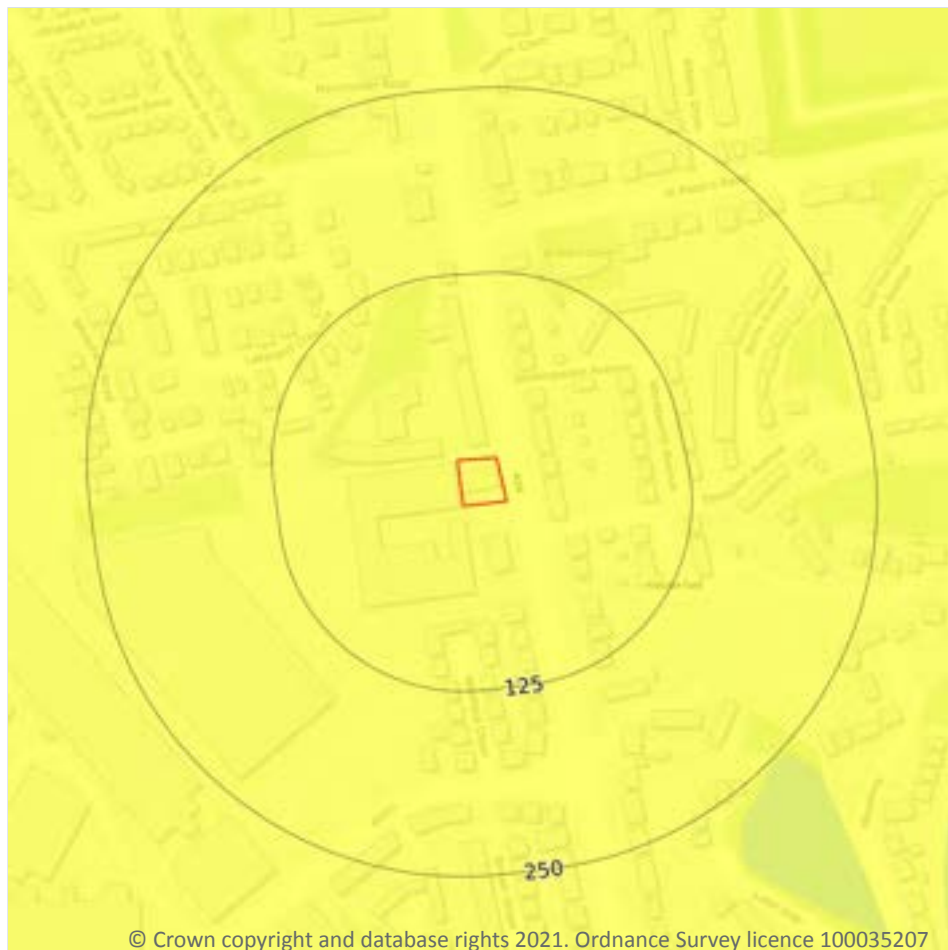
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 103**

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.

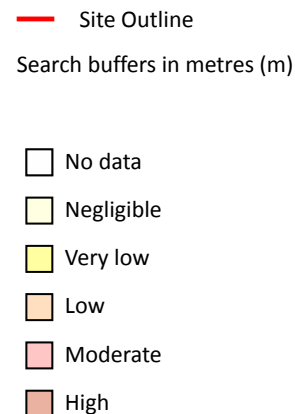
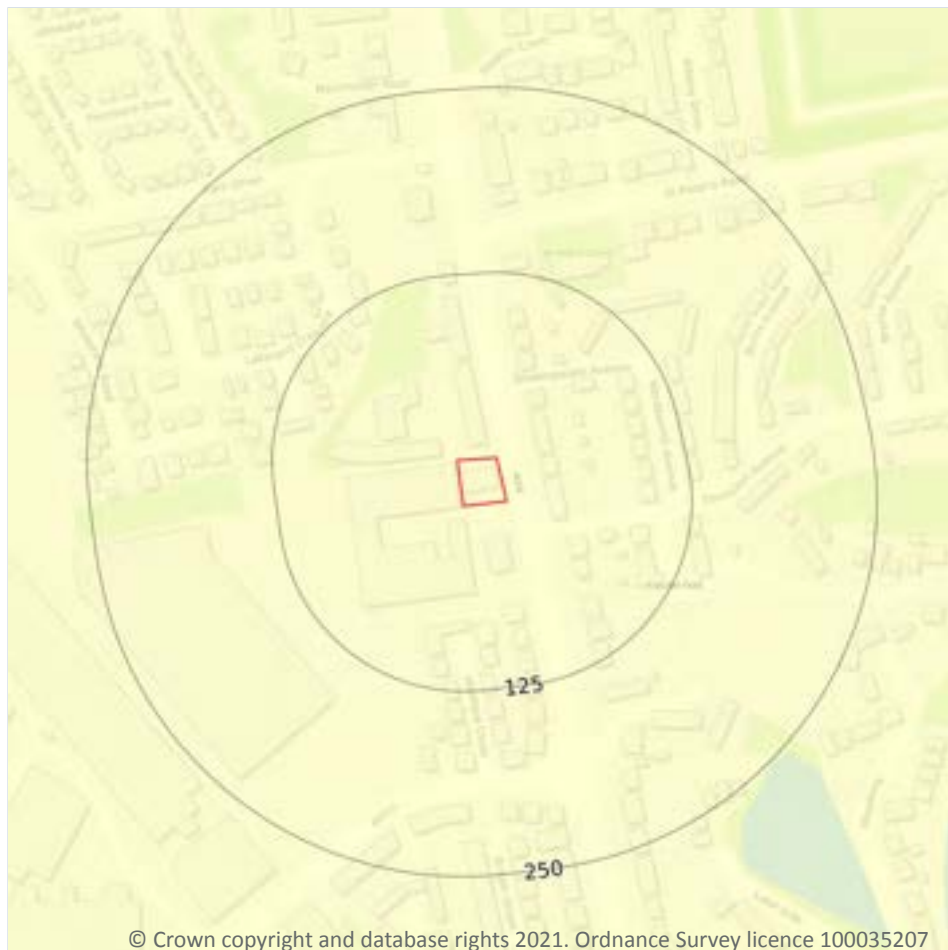
Features are displayed on the Natural ground subsidence - Landslides map on **page 104**

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 105**

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, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- 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 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.

18.2 BritPits

Records within 500m

0

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.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

15

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, ground workings and natural cavities map on **page 107**

ID	Location	Land Use	Year of mapping	Mapping scale
1	81m W	Refuse Heap	1928	1:10560
A	228m NW	Unspecified Ground Workings	1928	1:10560
A	228m NW	Unspecified Ground Workings	1938	1:10560
B	236m E	Pond	1981	1:10000
B	236m E	Pond	1974	1:10000
B	236m E	Pond	1965	1:10560
B	236m E	Pond	1955	1:10560
B	237m E	Pond	1851	1:10560
B	239m E	Pond	1938	1:10560
B	239m E	Pond	1891	1:10560
B	239m E	Pond	1928	1:10560
B	239m E	Pond	1908	1:10560
C	249m SE	Ponds	1851	1:10560
C	249m SE	Pond	1965	1:10560
C	249m SE	Reservoir	1955	1:10560

This data is sourced from Ordnance Survey/Groundsure.



18.4 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.

18.5 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 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.

18.8 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.



18.9 Coal mining

Records on site	1
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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.

18.10 Brine areas

Records on site	0
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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.

18.11 Gypsum areas

Records on site	0
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
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Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

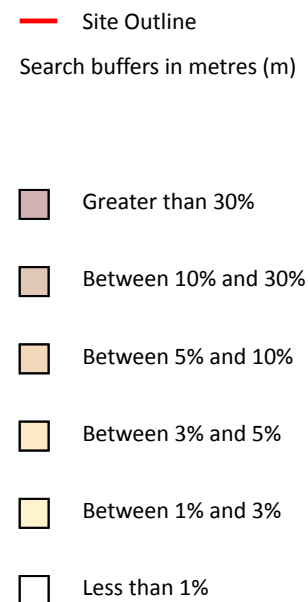
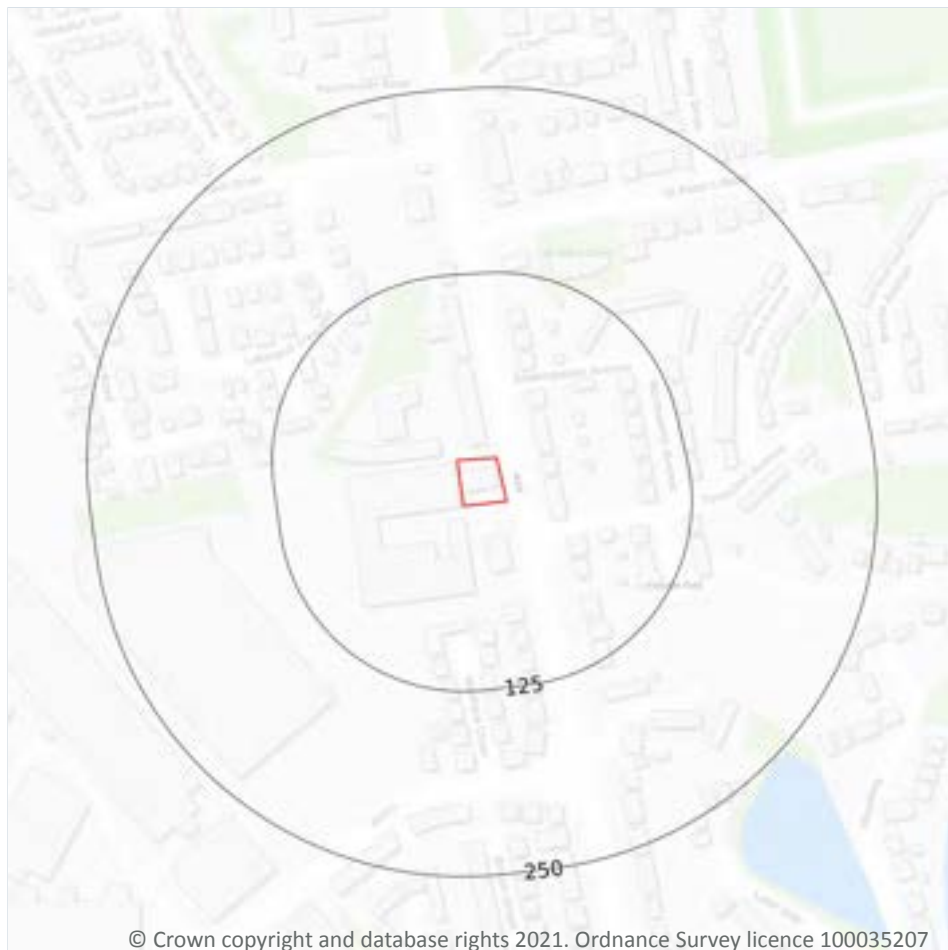
Records on site	0
-----------------	---

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 Radon



19.1 Radon

Records on site

1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 111**

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

This data is sourced from the British Geological Survey and Public Health England.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

2

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 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
12m SE	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 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.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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.

21 Railway infrastructure and projects

21.1 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.

21.2 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.

21.3 Railway tunnels

Records within 250m	0
---------------------	---

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0
---------------------	---

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.

This data is sourced from Ordnance Survey/Groundsure.

21.5 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.

21.6 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.

21.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 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.

21.9 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.

21.10 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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APPENDIX 03

Historical Ordnance Survey Mapping

Site Details:

Former Derby
Garage, Manchester
road, Bury, BL9 9NS

Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: County Series

Map date: 1890

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1890
Revised 1890
Edition N/A
Copyright N/A
Levelled N/A



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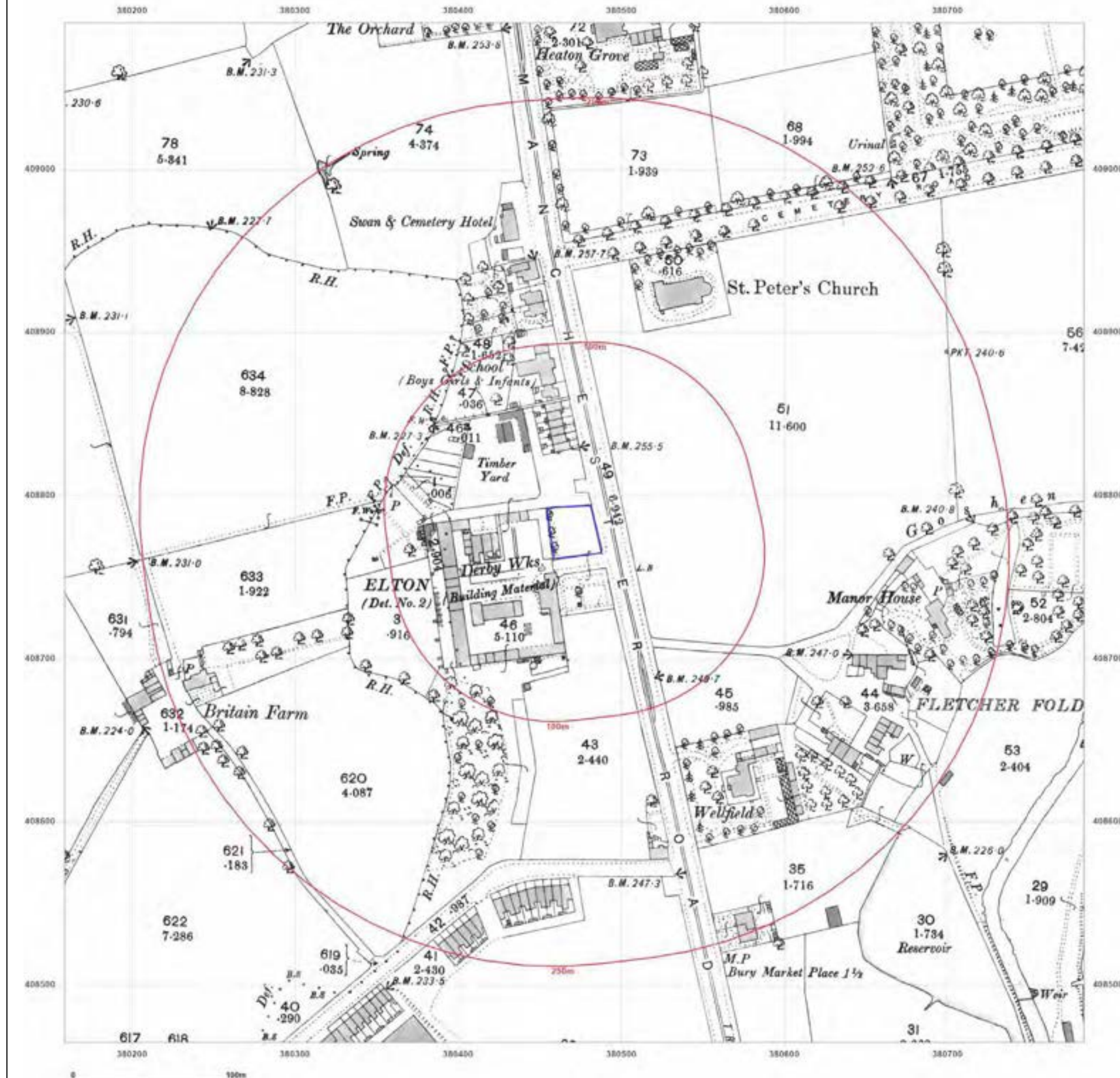


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Site Details:

Former Derby
Garage, Manchester
road, Bury, BL9 9NS

Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: County Series Town Plan

Map date: 1891

Scale: 1:500

Printed at: 1:1,000



Surveyed 1891
Revised N/A
Edition N/A
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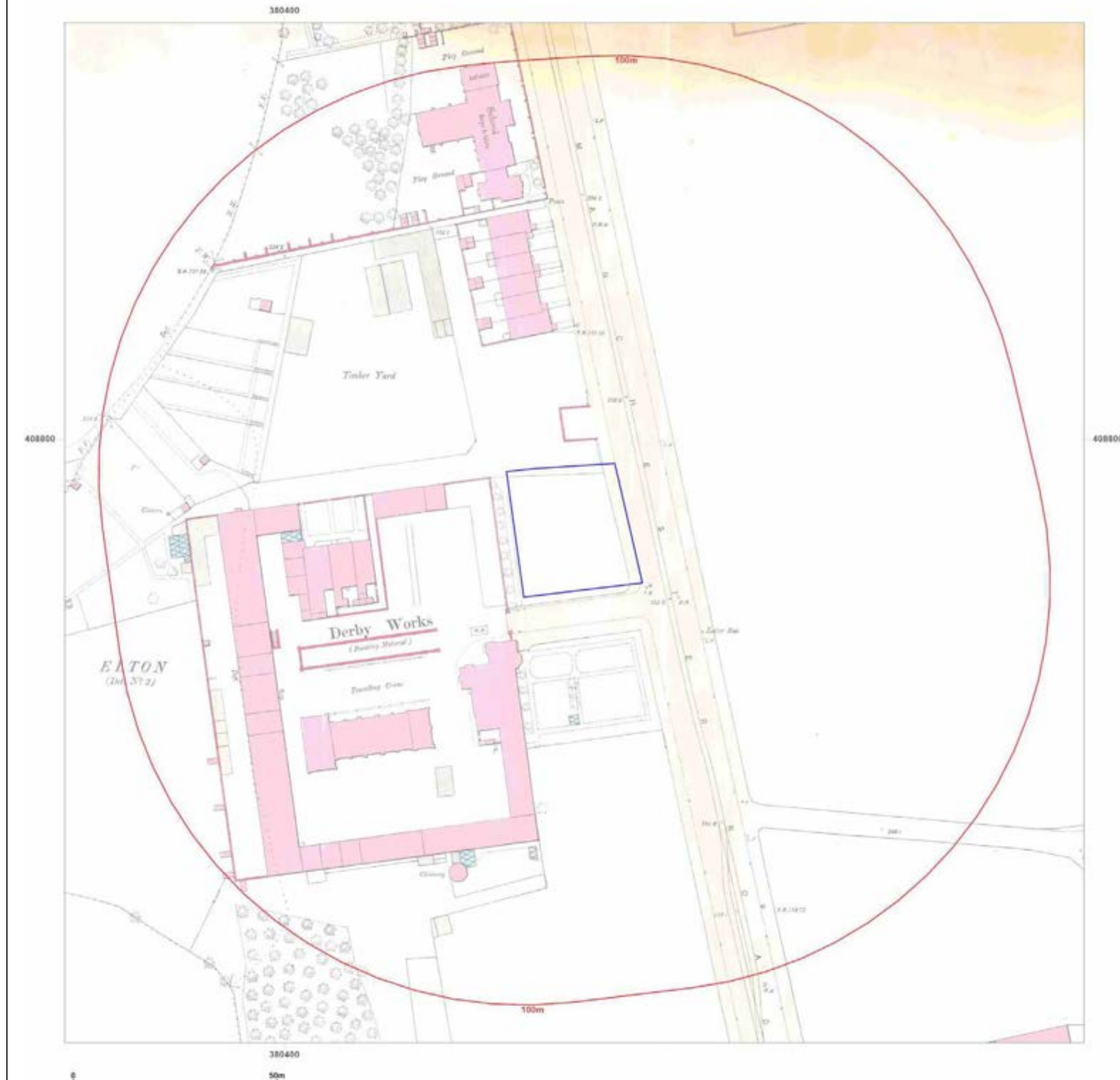


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: County Series

Map date: 1910

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1810
Revised 1910
Edition N/A
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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: County Series

Map date: 1930

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1930
Revised 1930
Edition N/A
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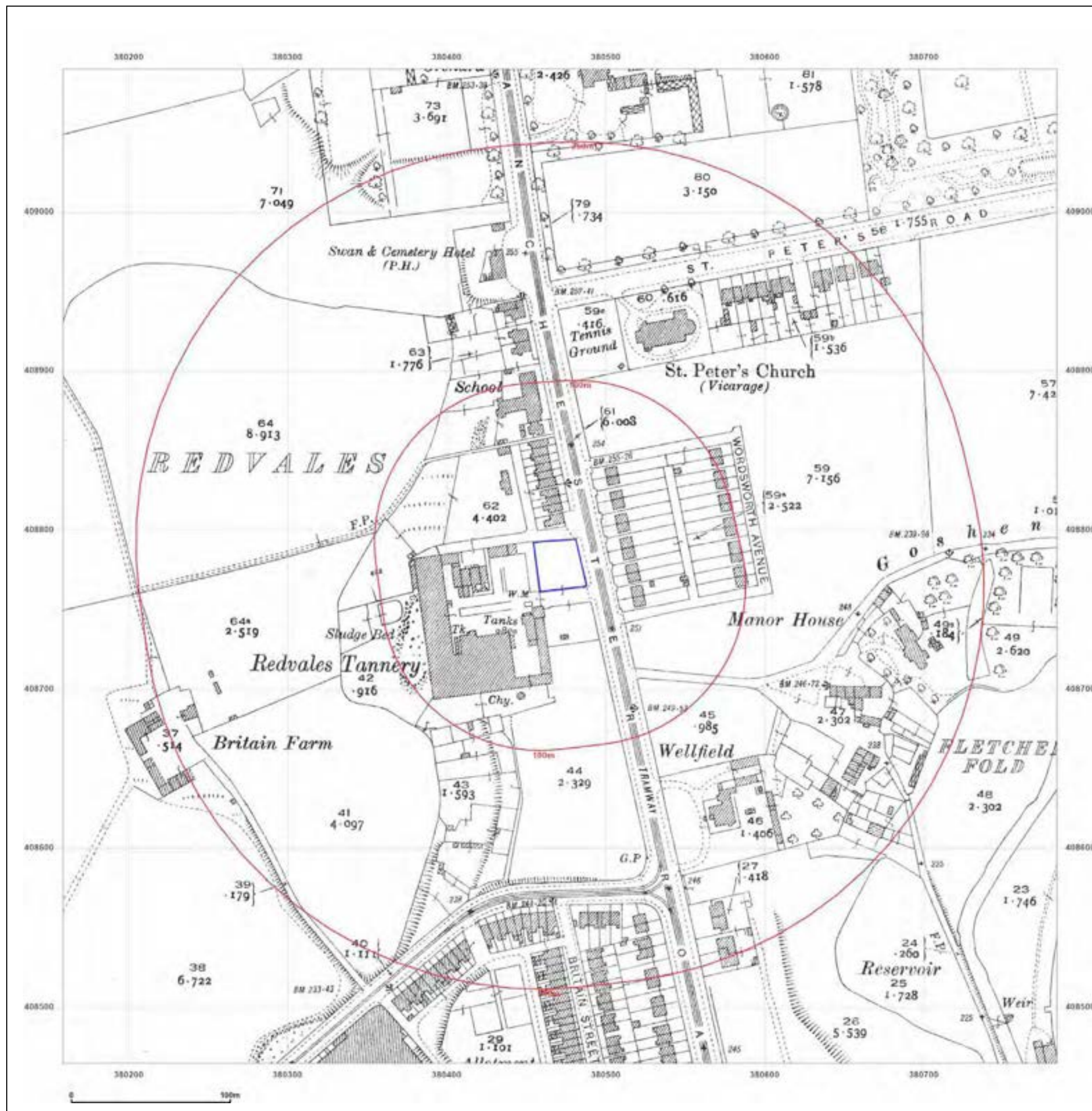


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: County Series

Map date: 1937

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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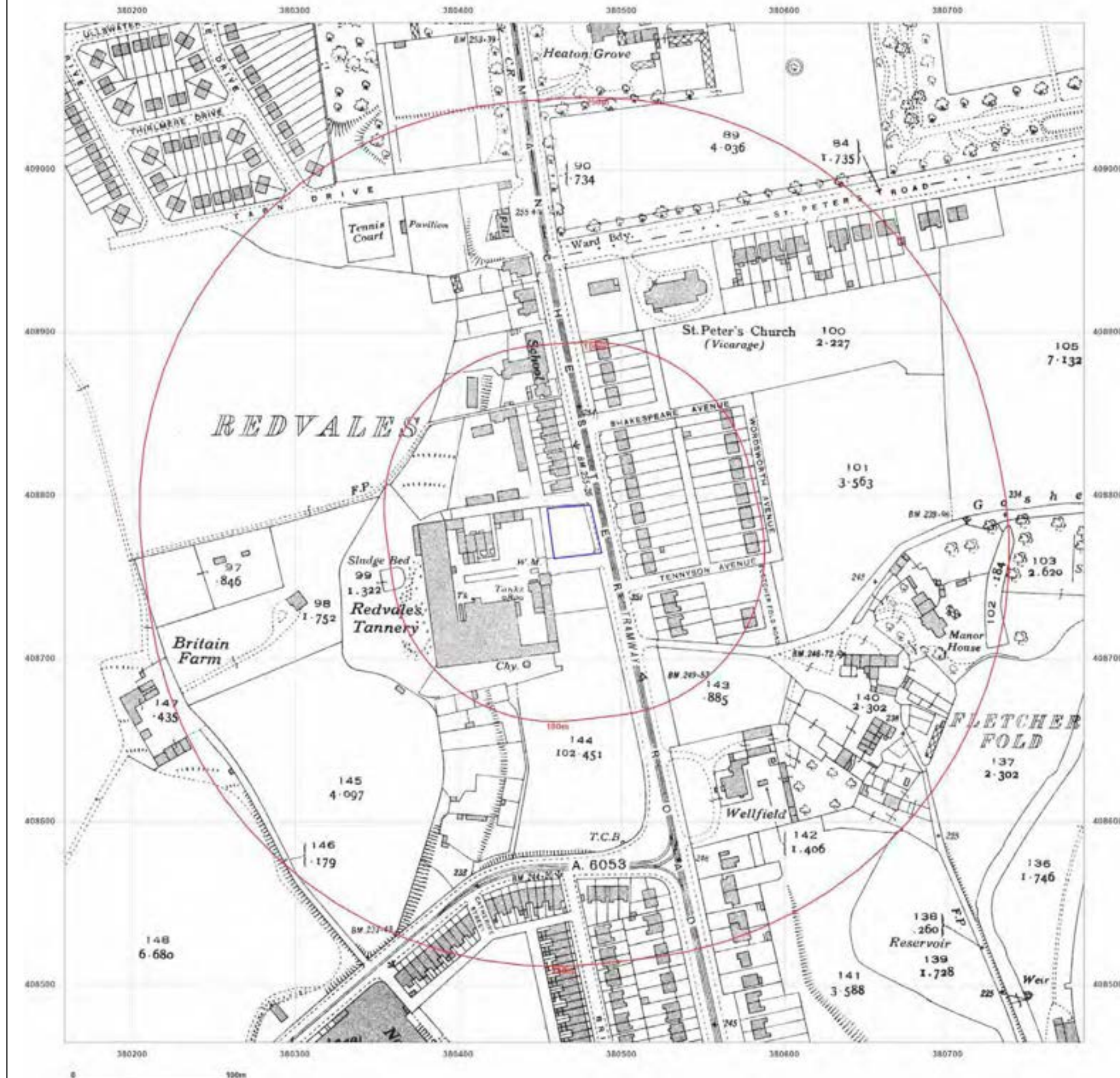


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1956-1957

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Surveyed 1957
Revised 1957
Edition N/A
Copyright N/A
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Surveyed 1956
Revised 1956
Edition N/A
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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1957-1958

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
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Surveyed 1956
Revised N/A
Edition N/A
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Revised N/A
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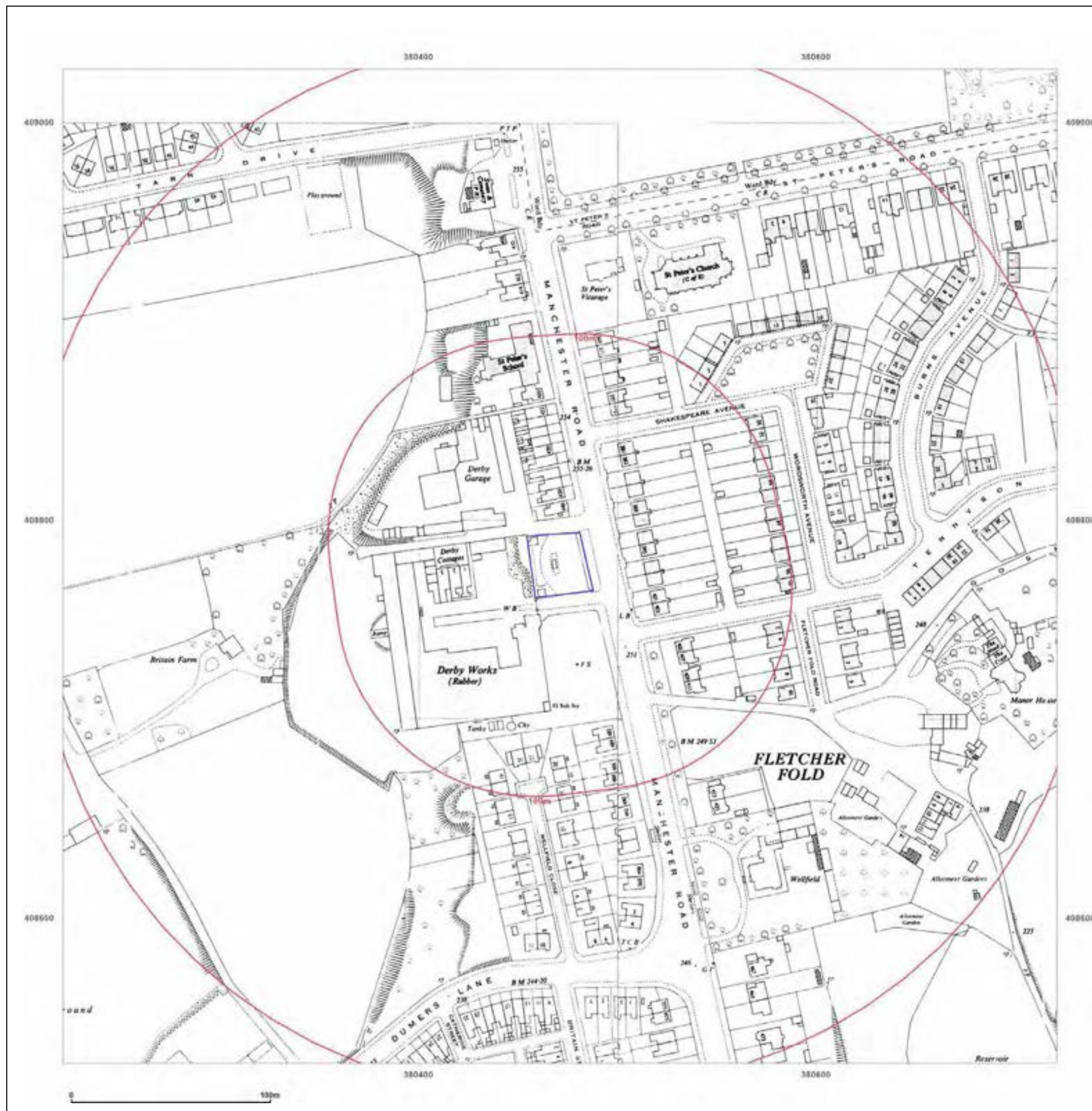


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1957-1958

Scale: 1:2,500

Printed at: 1:2,500



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Edition 1957
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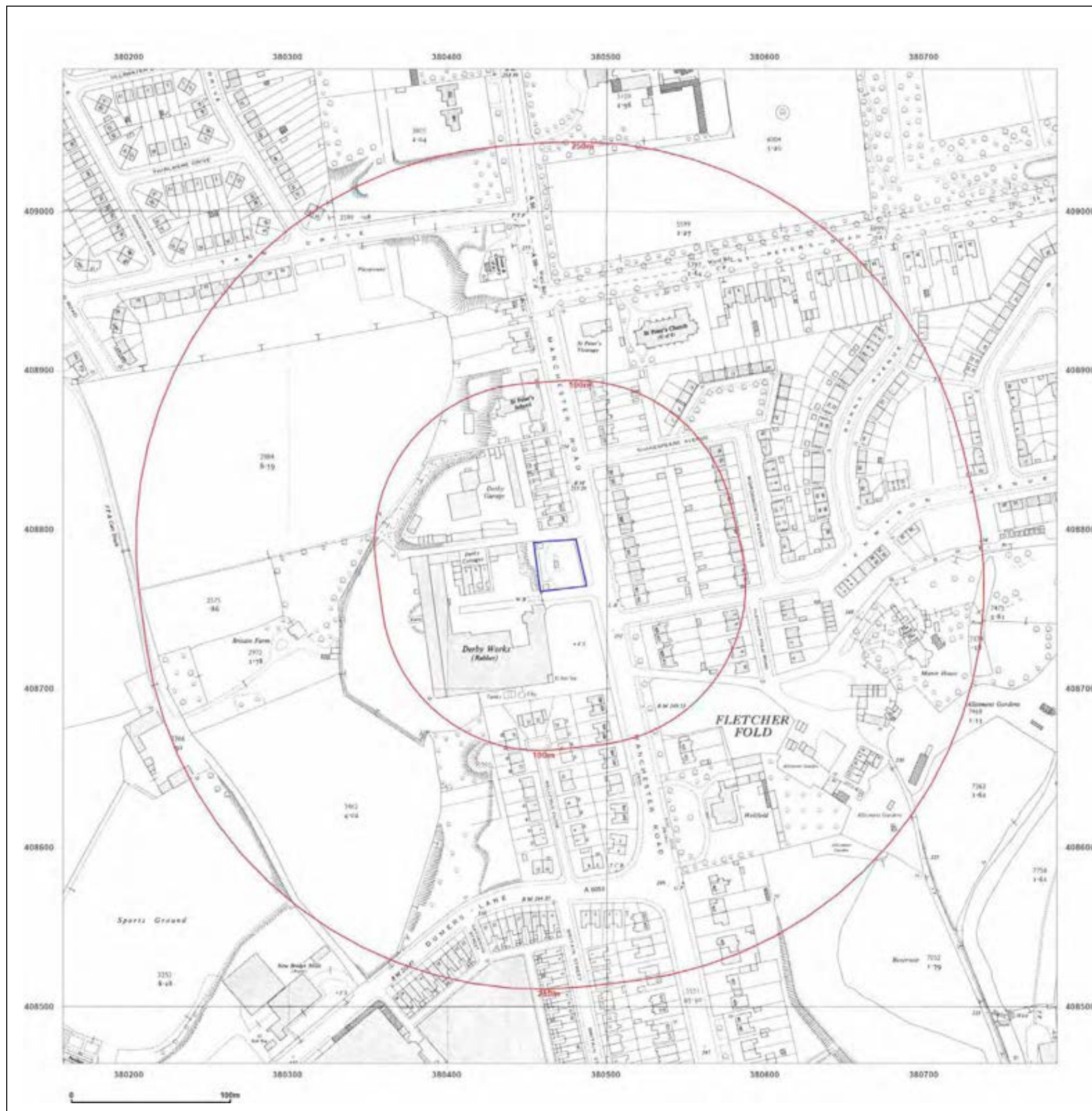


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1970-1975

Scale: 1:1,250

Printed at: 1:2,000



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Revised 1970
Edition N/A
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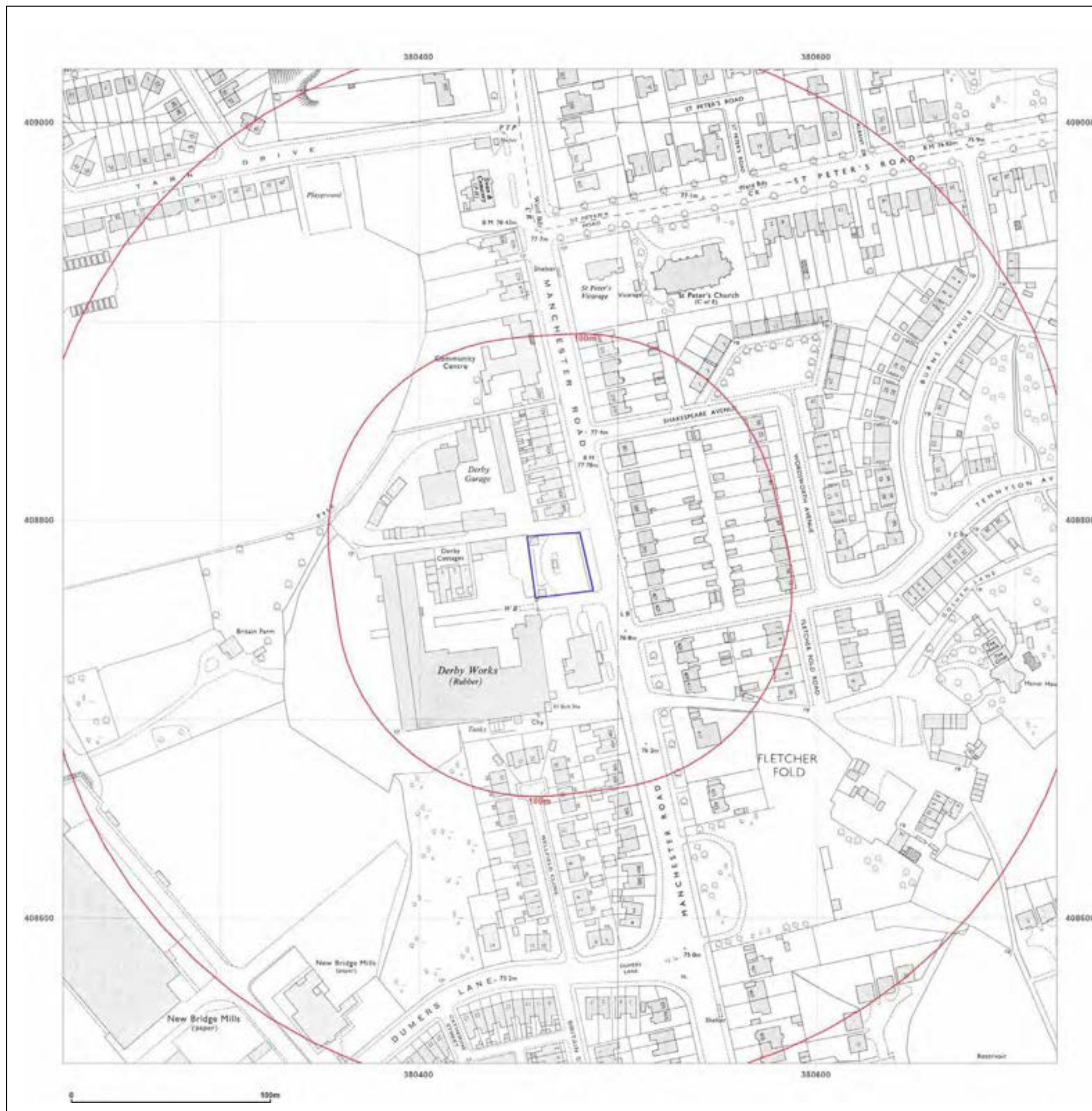


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1984

Scale: 1:1,250

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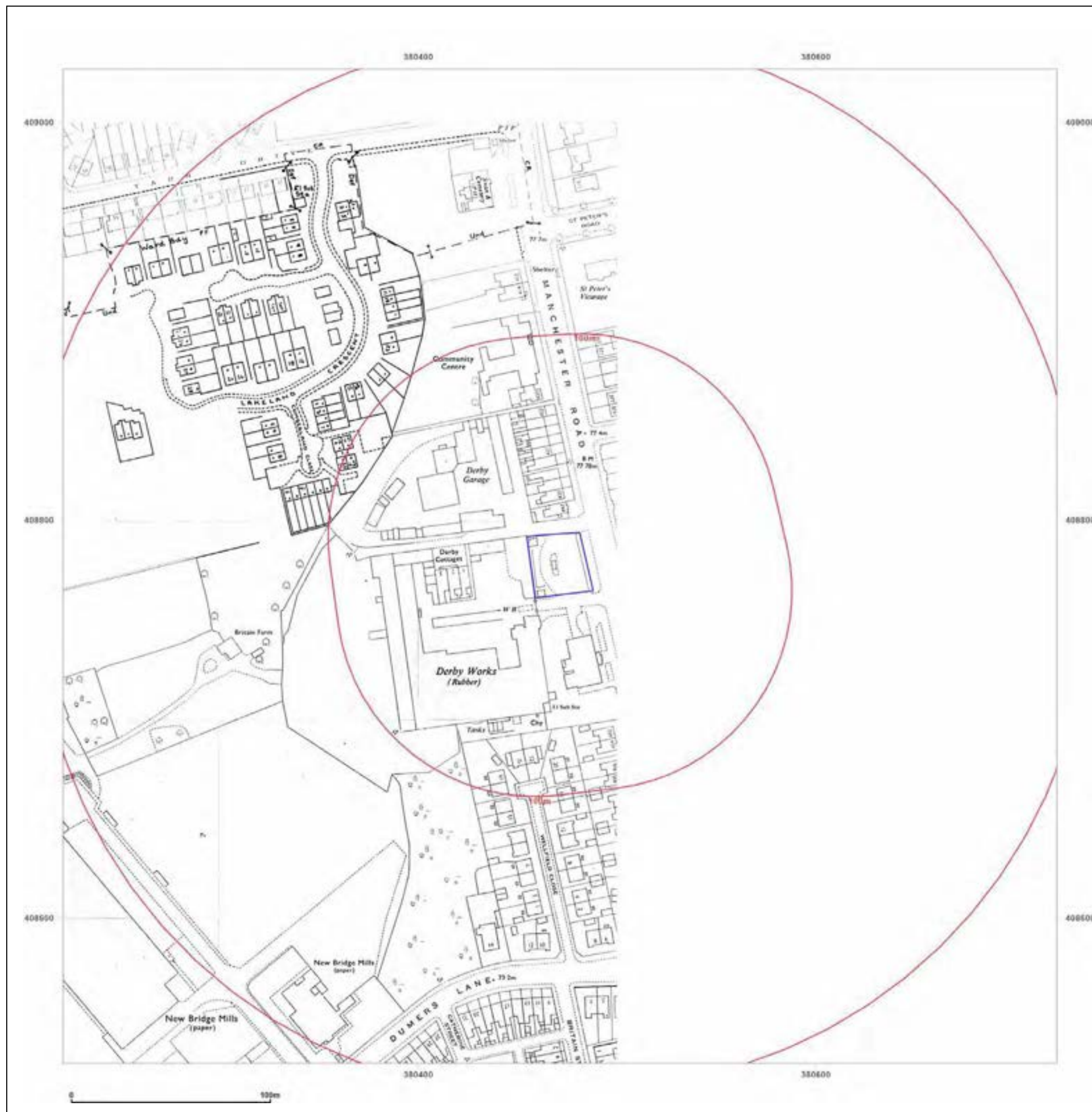


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1985-1987

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1989-1992

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1992-1995

Scale: 1:1,250

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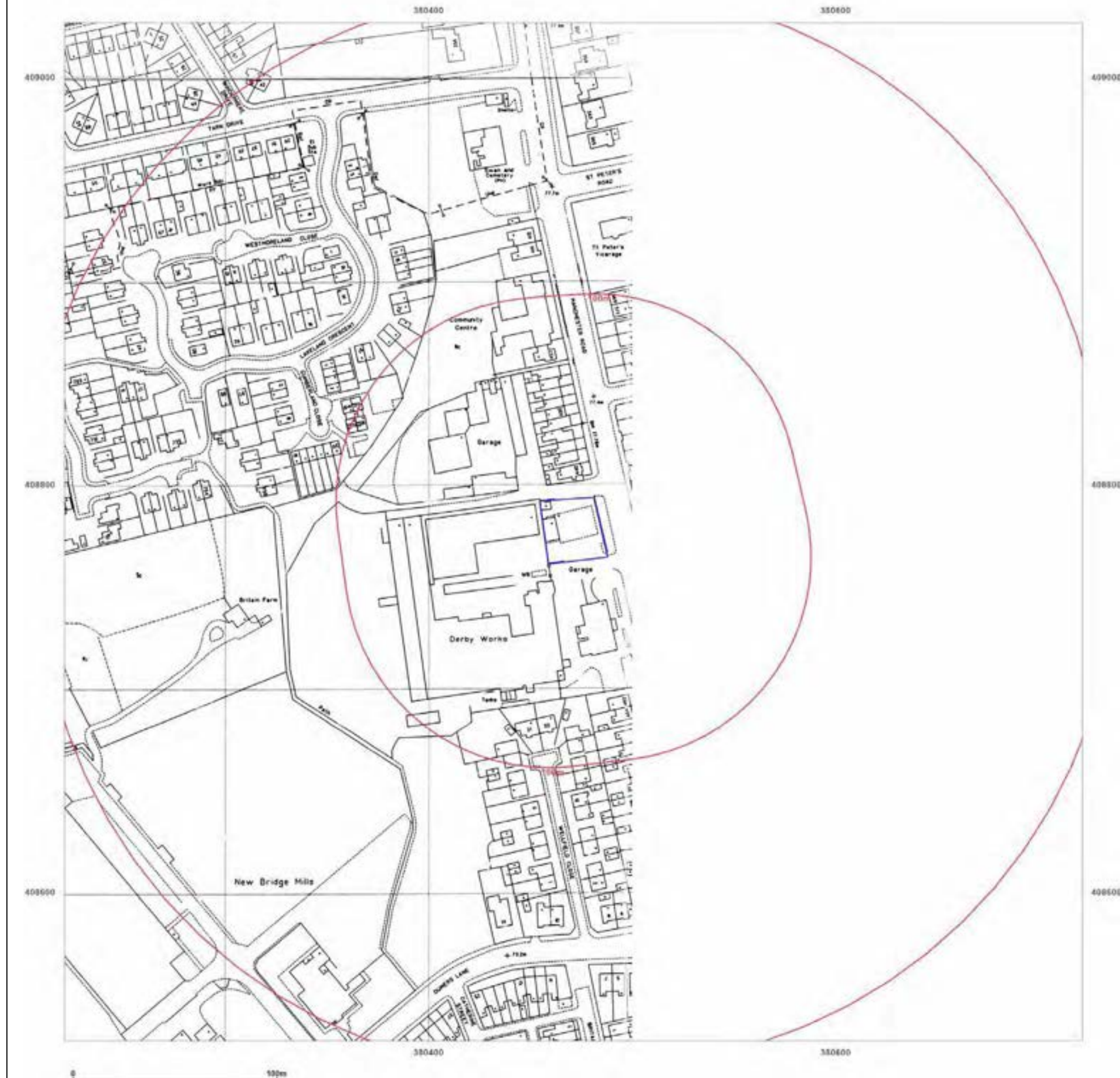


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Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1995

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
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Edition N/A
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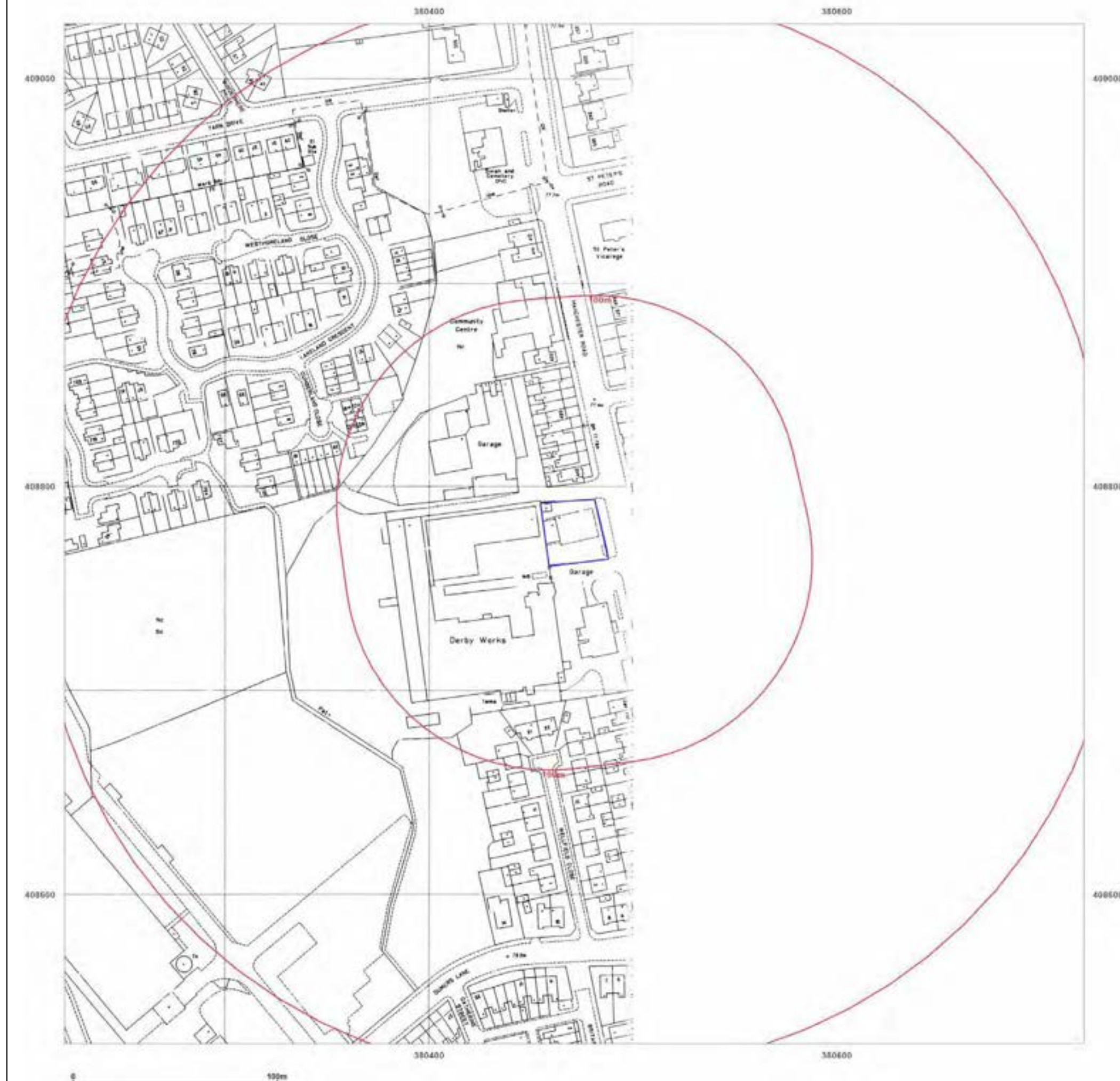


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1995

Scale: 1:1,250

Printed at: 1:2,000



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Revised 1995
Edition N/A
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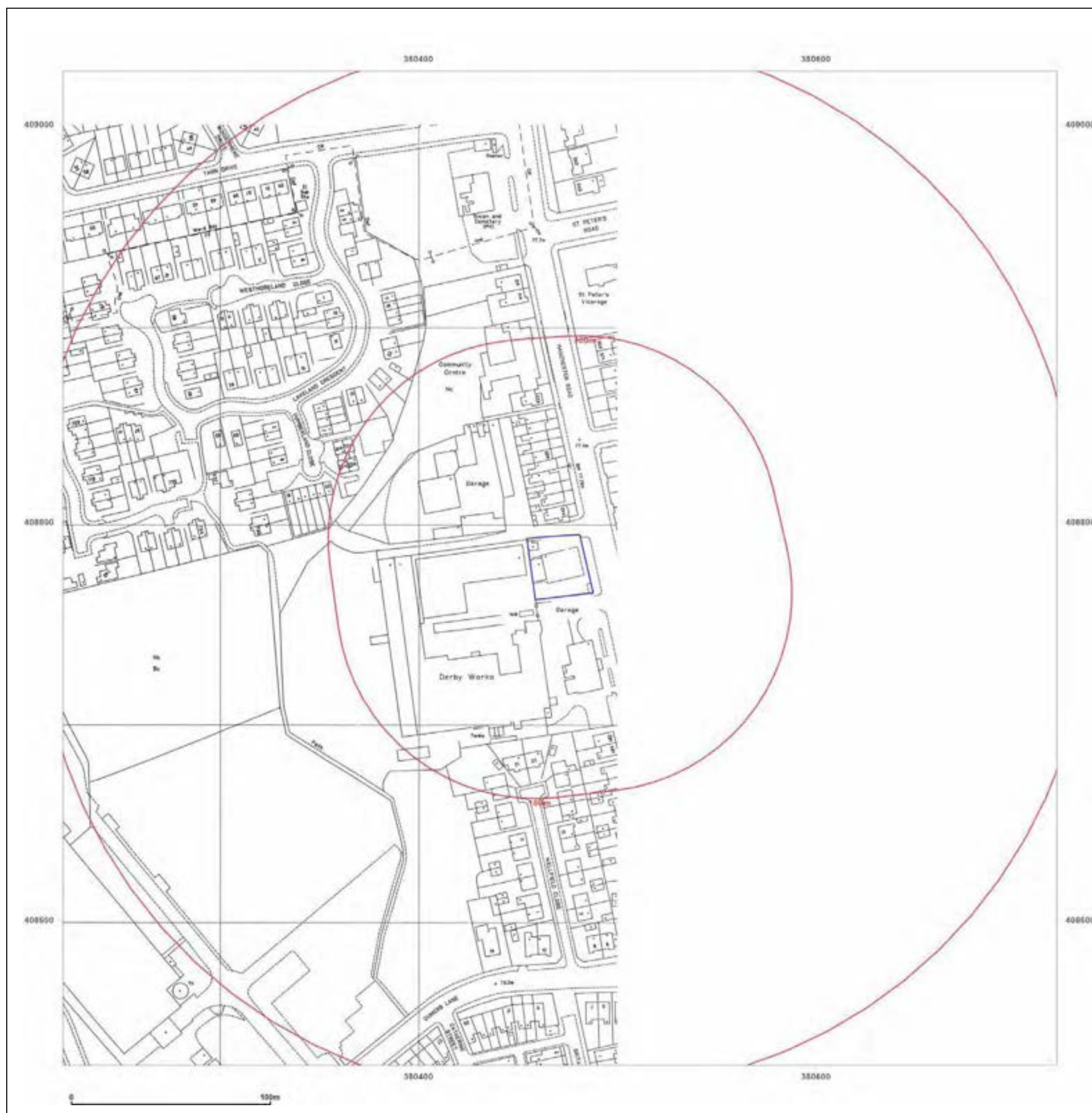


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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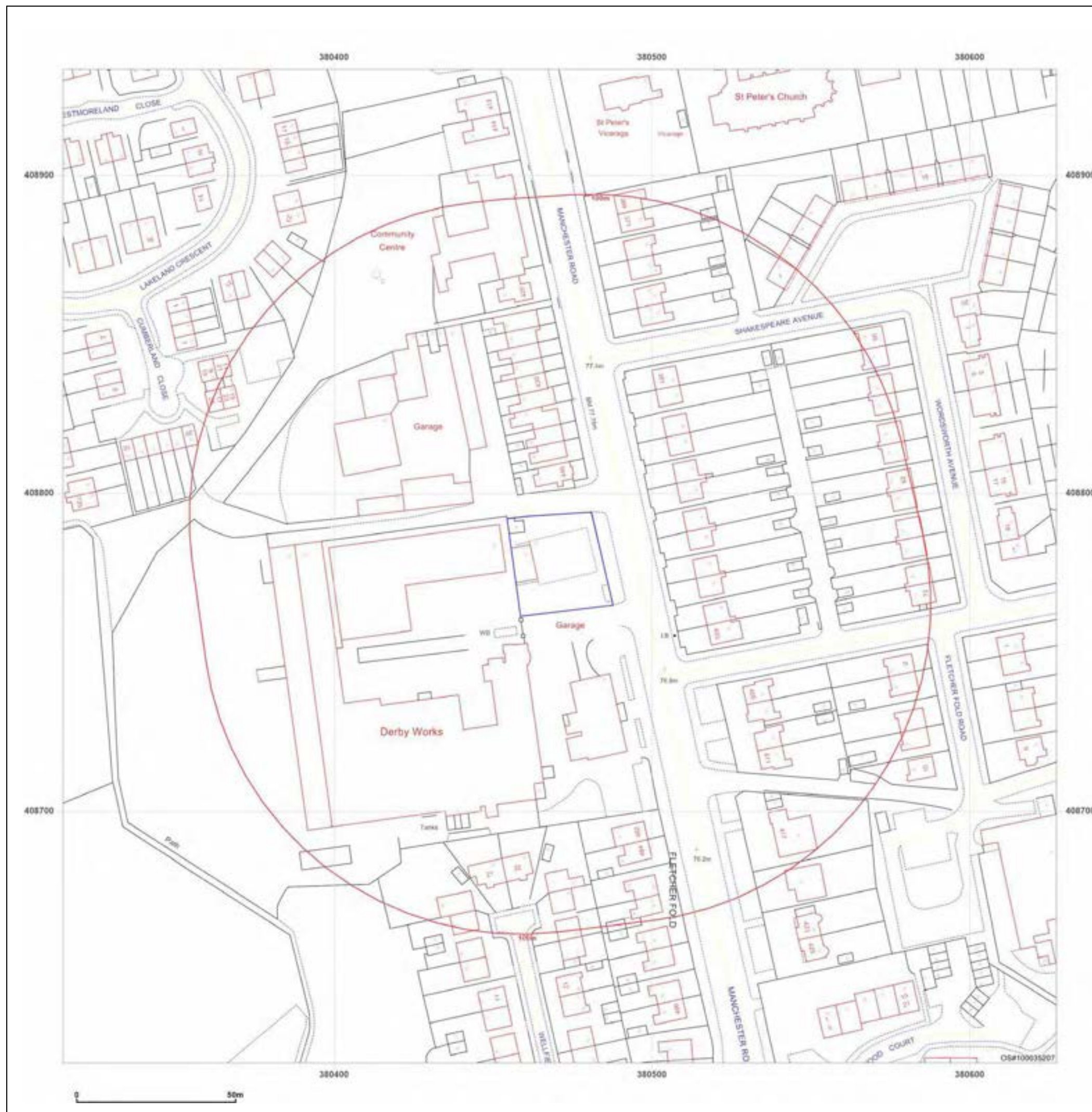


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: County Series

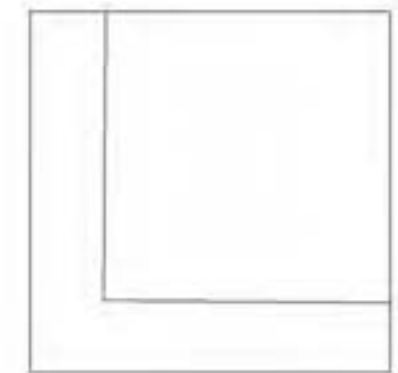
Map date: 1851

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1847
Revised N/A
Edition 1851
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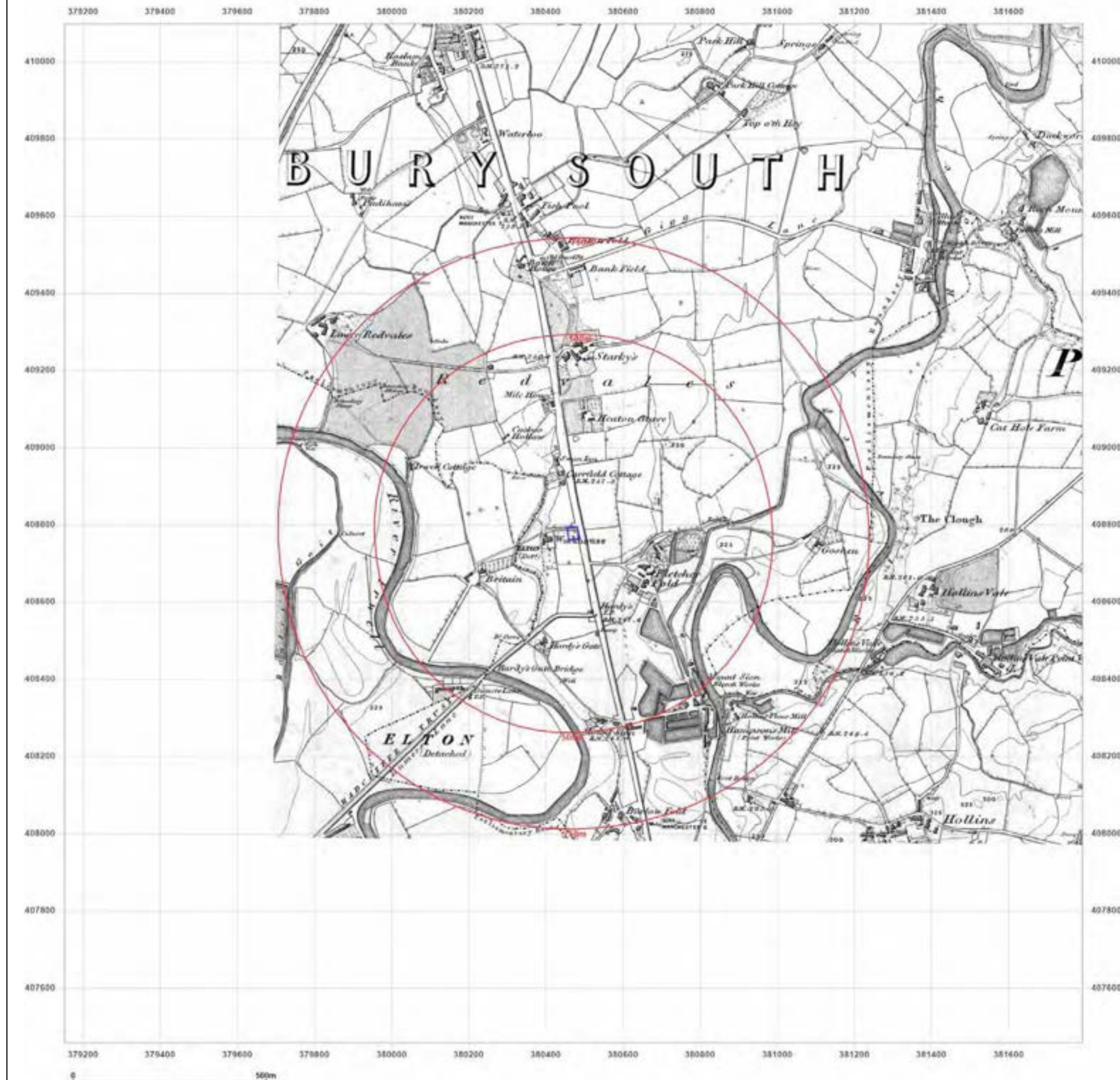


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: County Series

Map date: 1890-1891

Scale: 1:10,560

Printed at: 1:10,560



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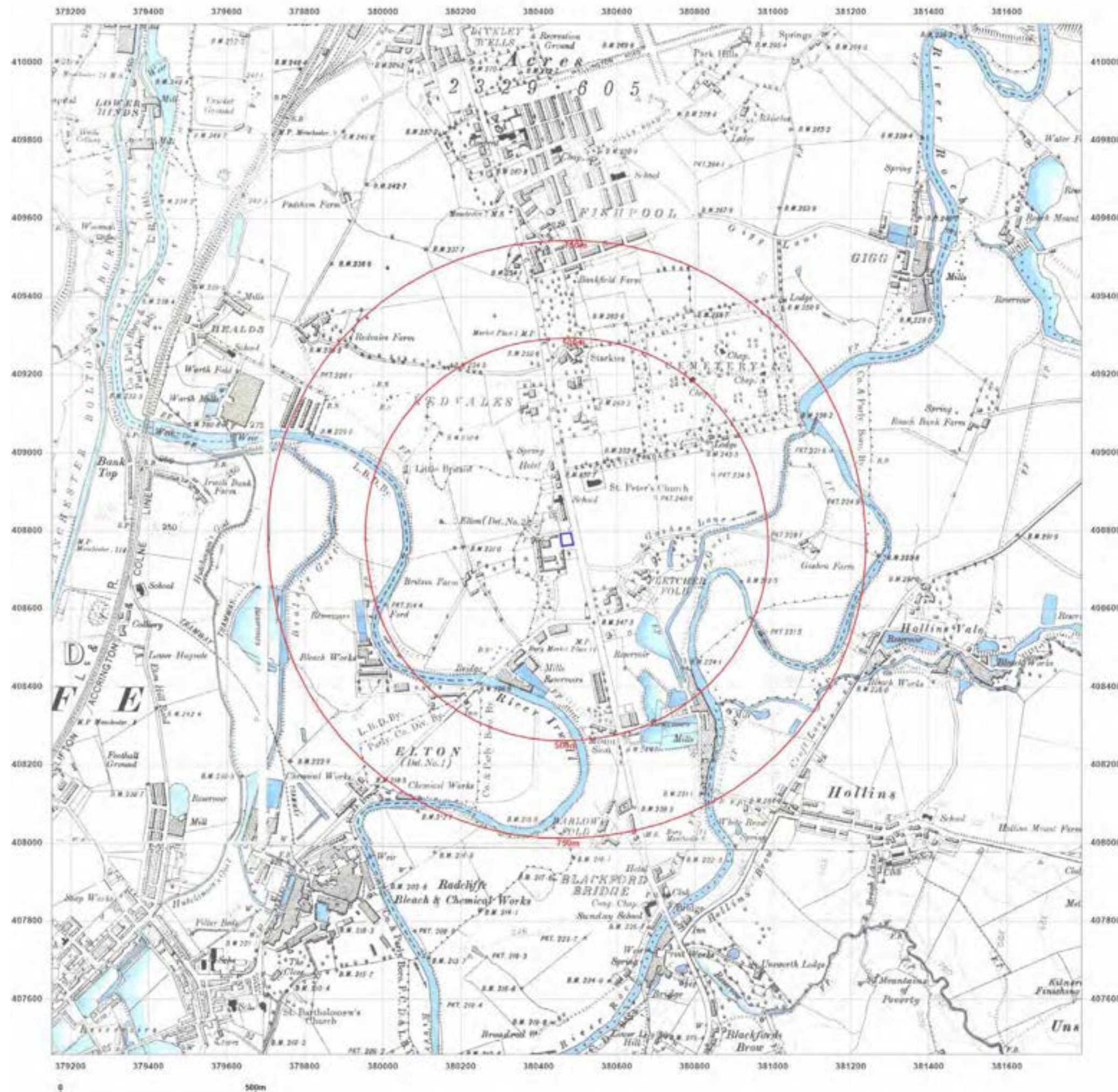


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: County Series

Map date: 1907-1908

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1908
Edition N/A
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Revised 1908
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Surveyed 1844
Revised 1907
Edition N/A
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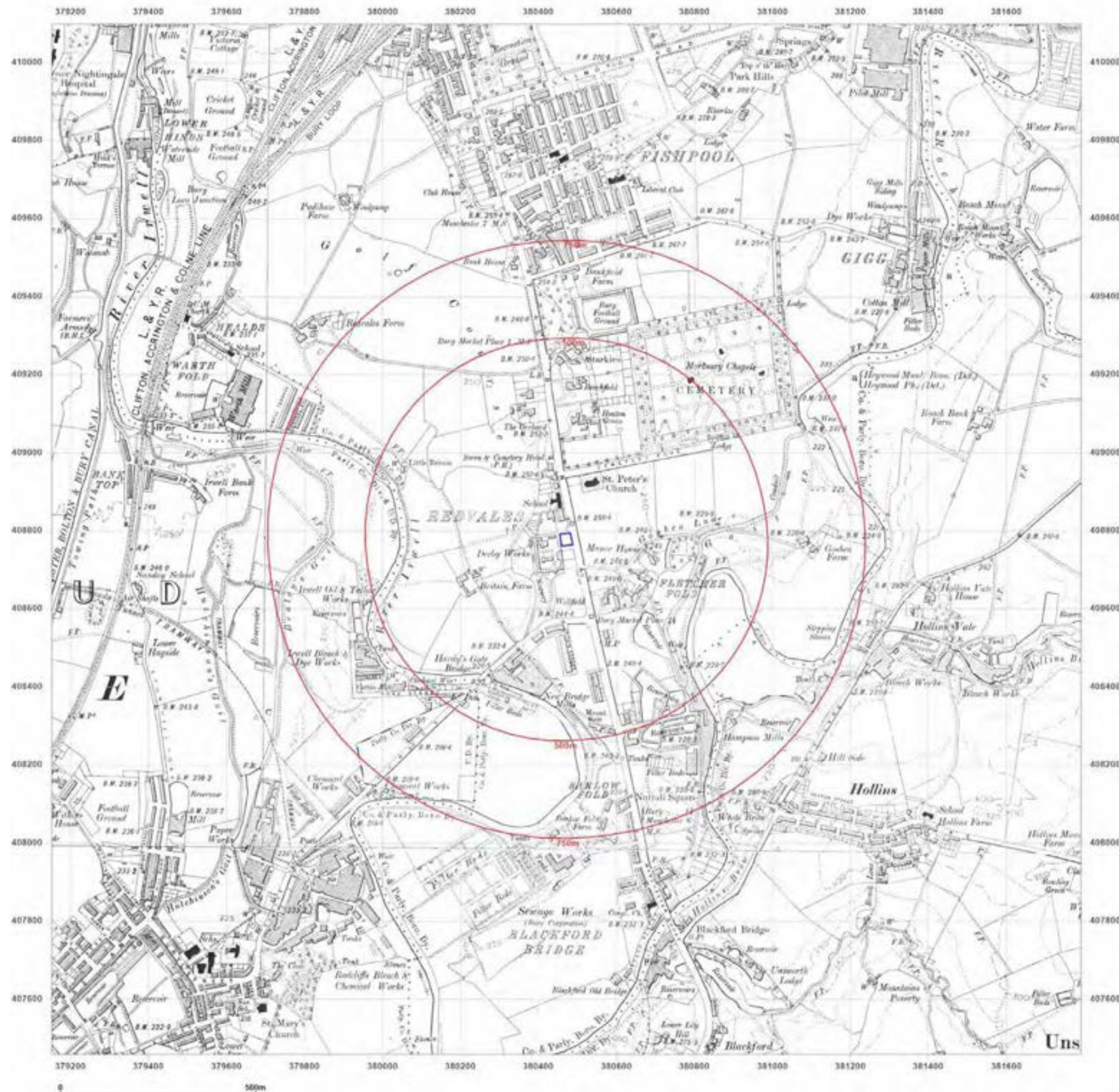


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: County Series

Map date: 1927-1932

Scale: 1:10,560

Printed at: 1:10,560



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Surveyed 1844
Revised 1928
Edition N/A
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Levelled N/A

Surveyed 1844
Revised 1927
Edition N/A
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Levelled N/A

Surveyed 1844
Revised 1932
Edition N/A
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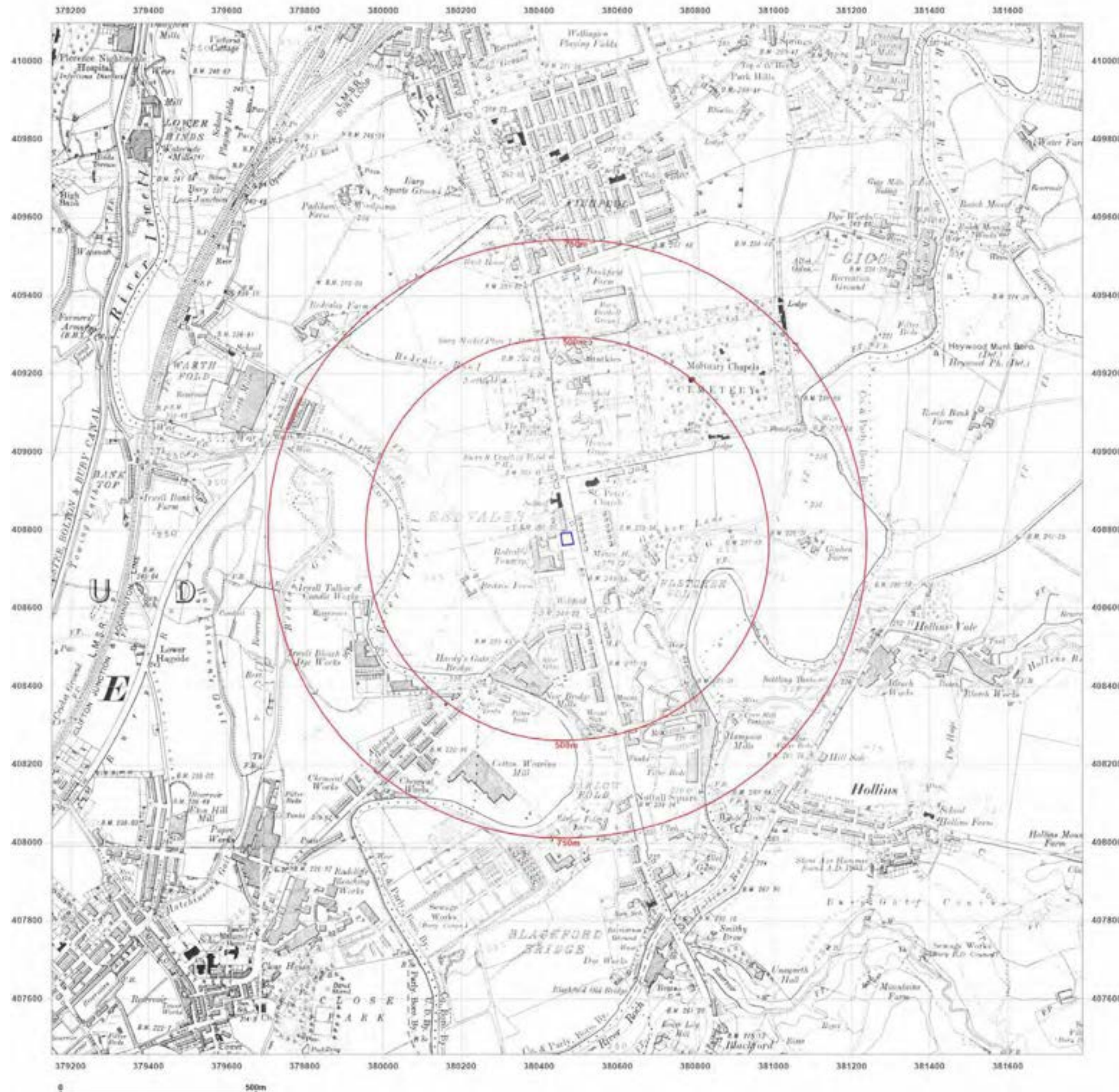


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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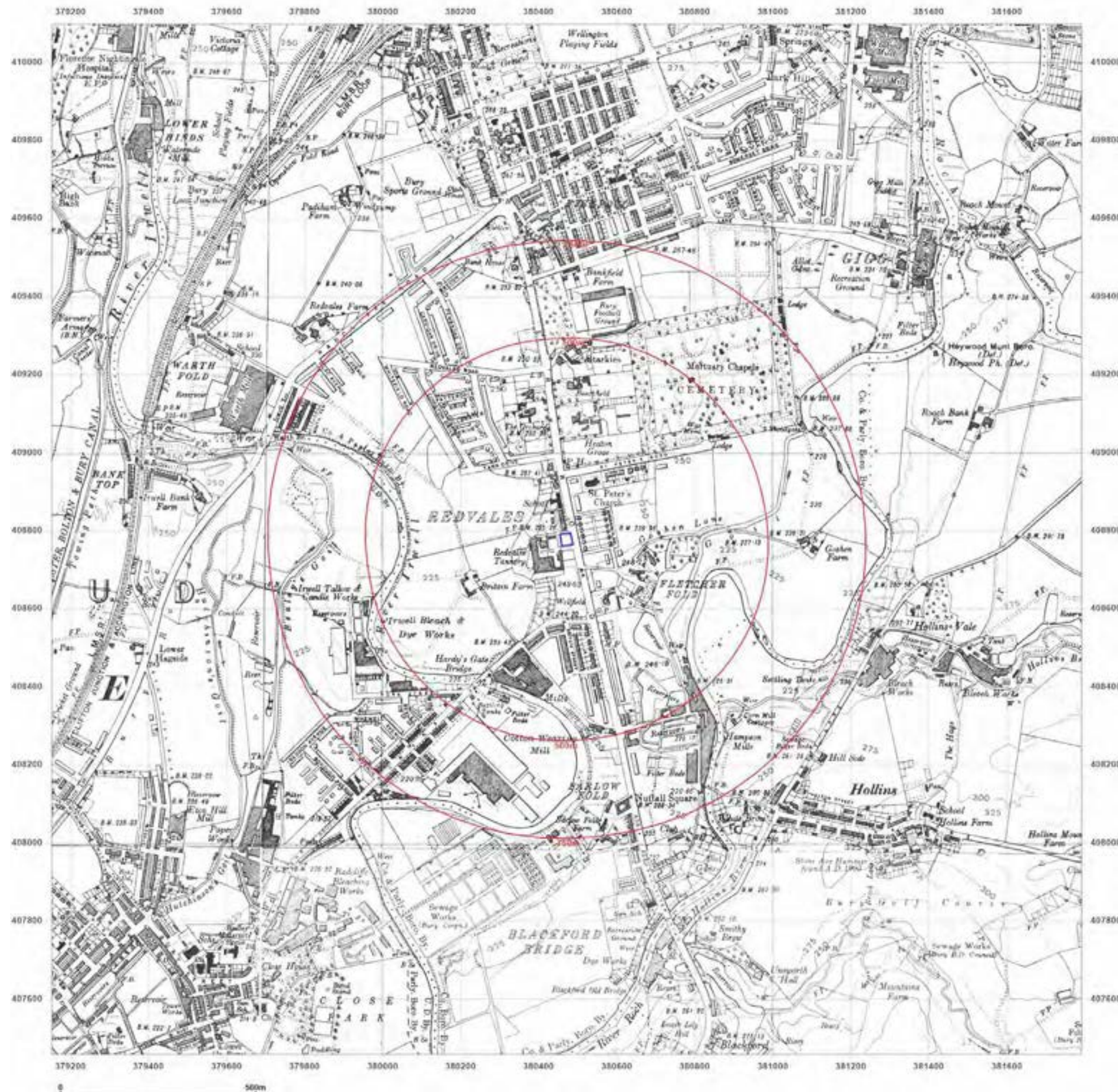


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Site Details:

Former Derby
Garage, Manchester
road, Bury, BL9 9NS

Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: Provisional

Map date: 1955-1956

Scale: 1:10,560

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Revised 1949
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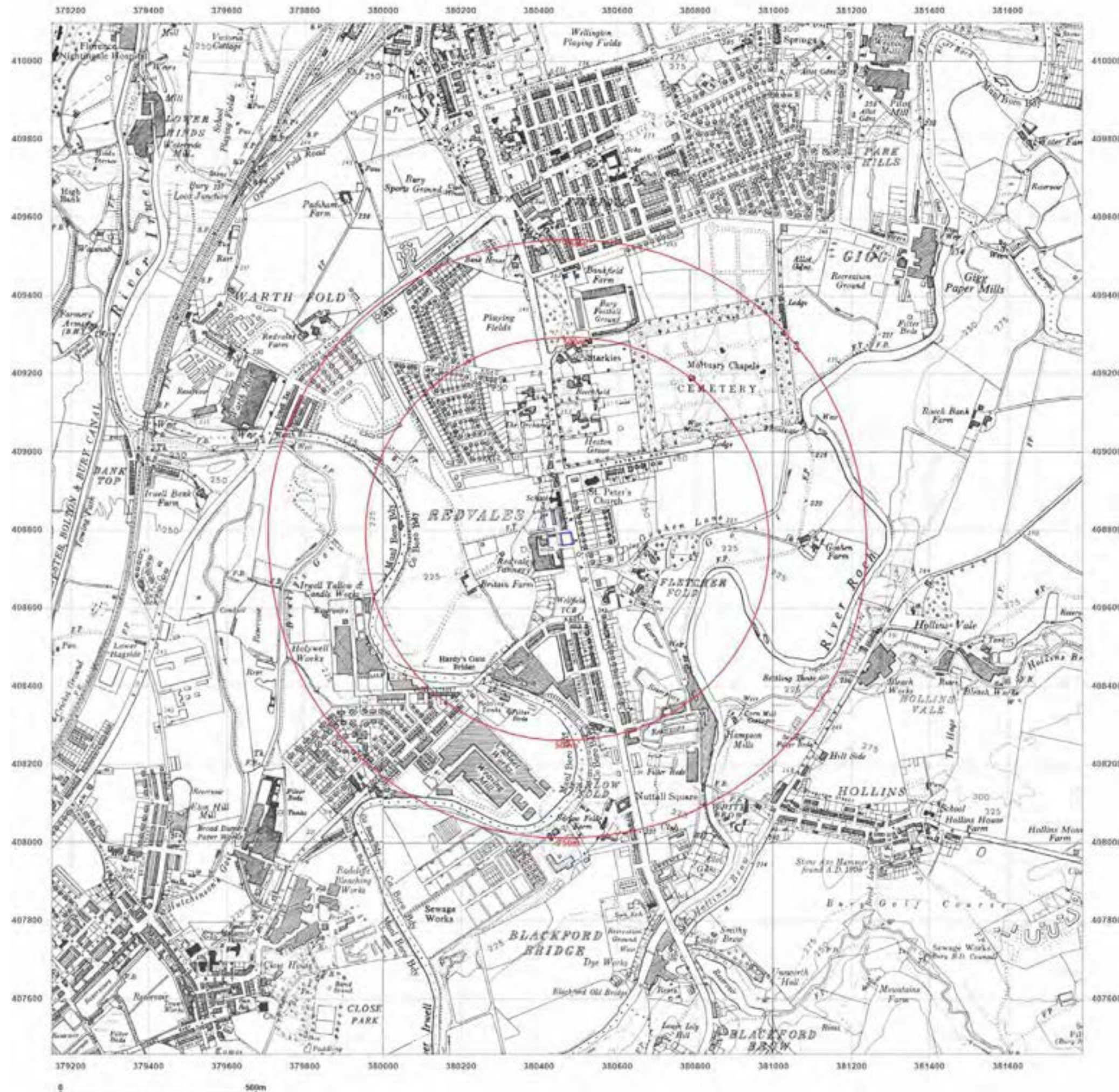


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: Provisional

Map date: 1965-1969

Scale: 1:10,560

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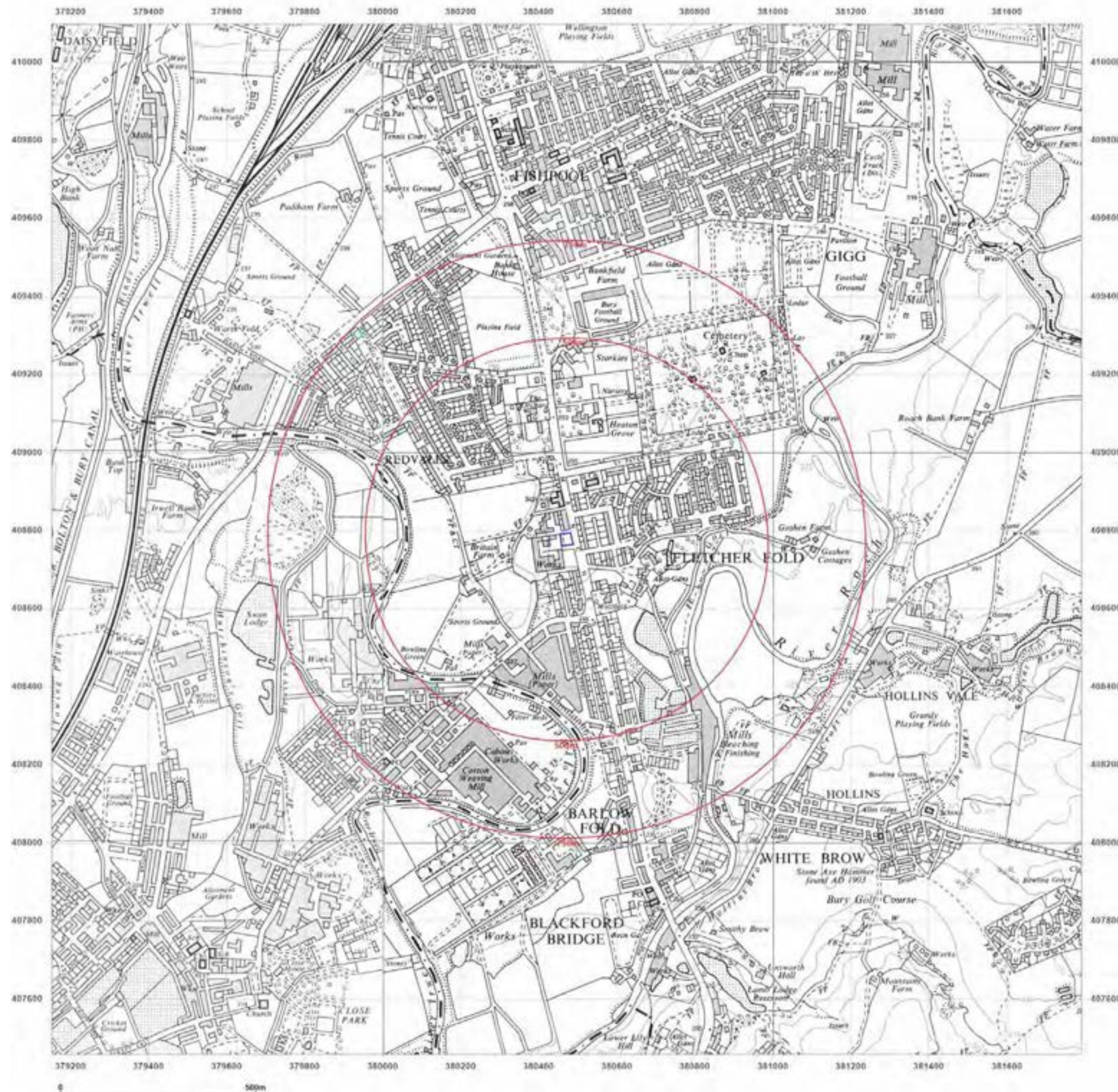


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road, Bury, BL9 9NS

Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

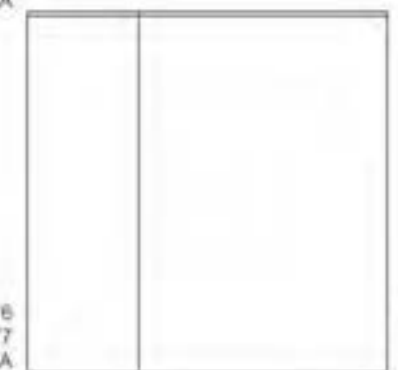
Map date: 1974-1977

Scale: 1:10,000

Printed at: 1:10,000



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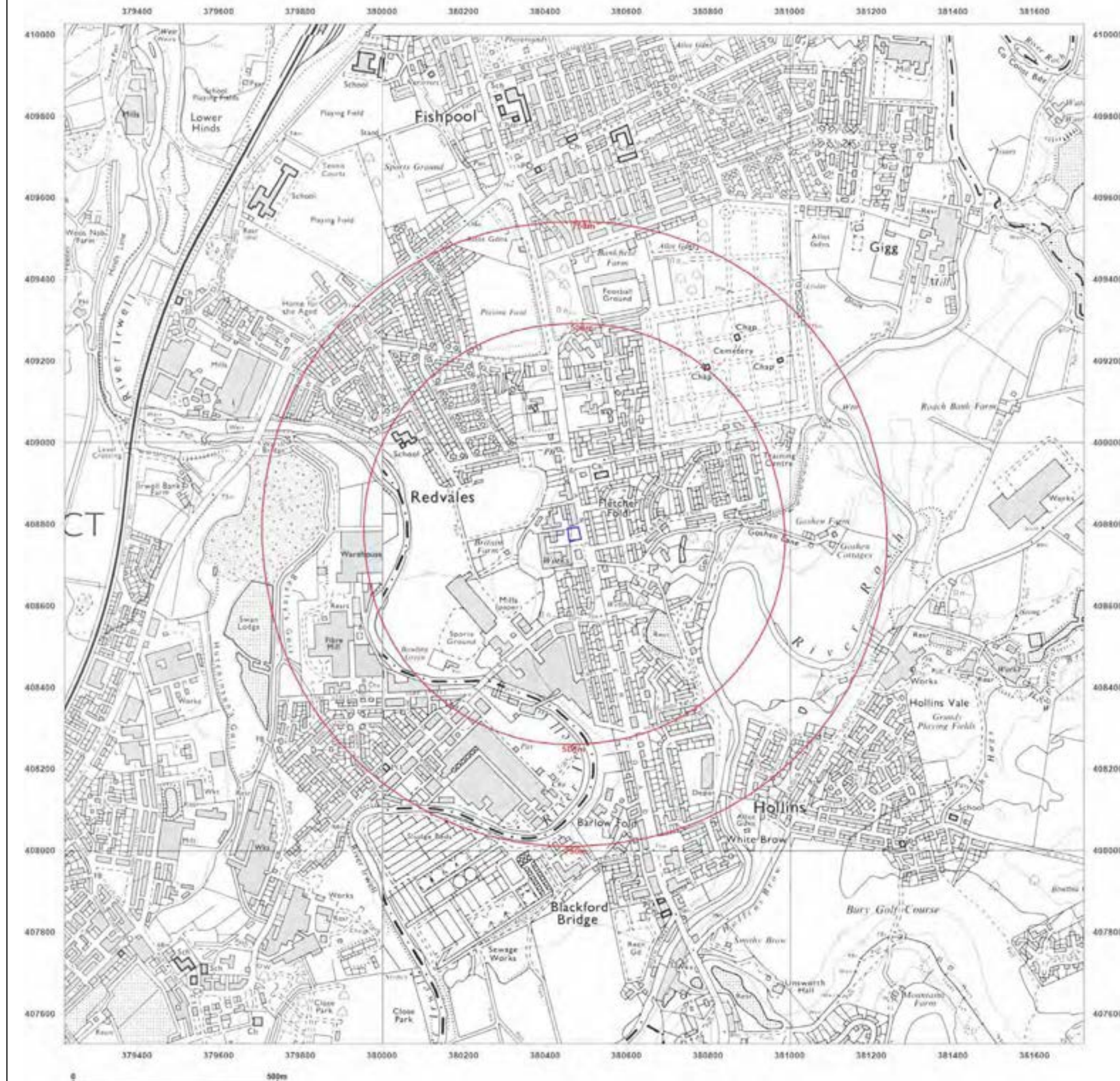


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1980-1983

Scale: 1:10,000

Printed at: 1:10,000



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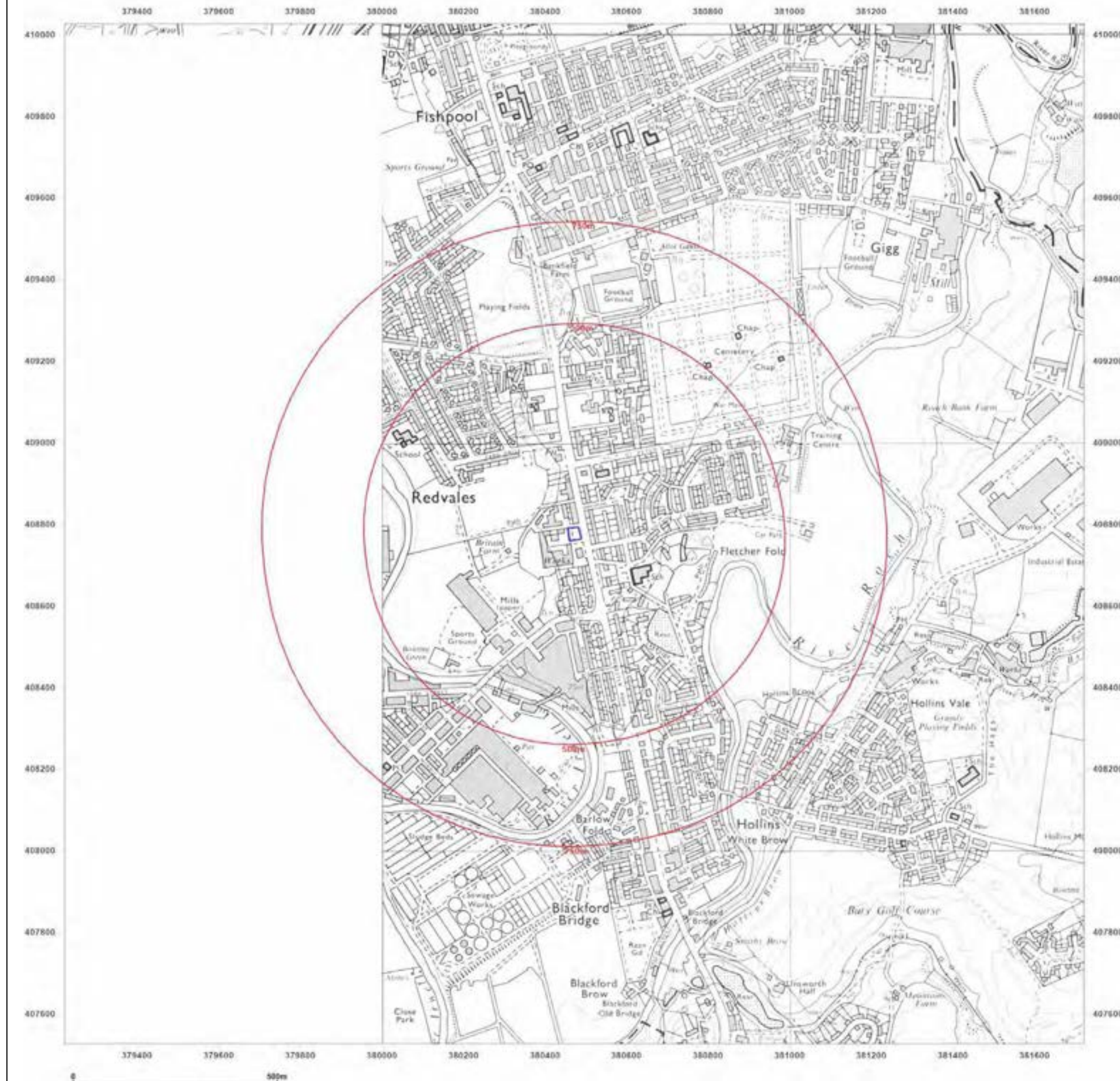


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1988

Scale: 1:10,000

Printed at: 1:10,000



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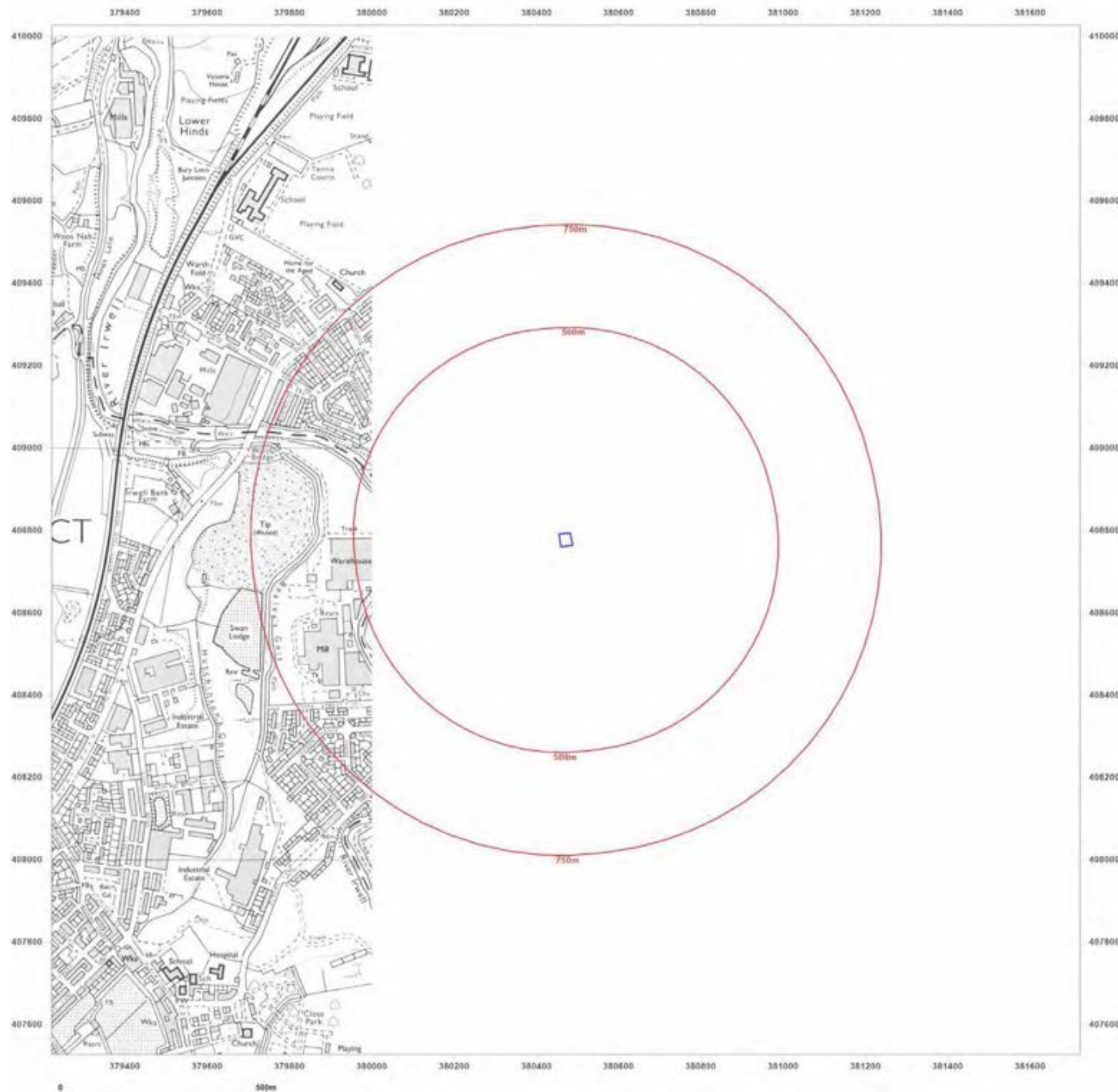


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 1991

Scale: 1:10,000

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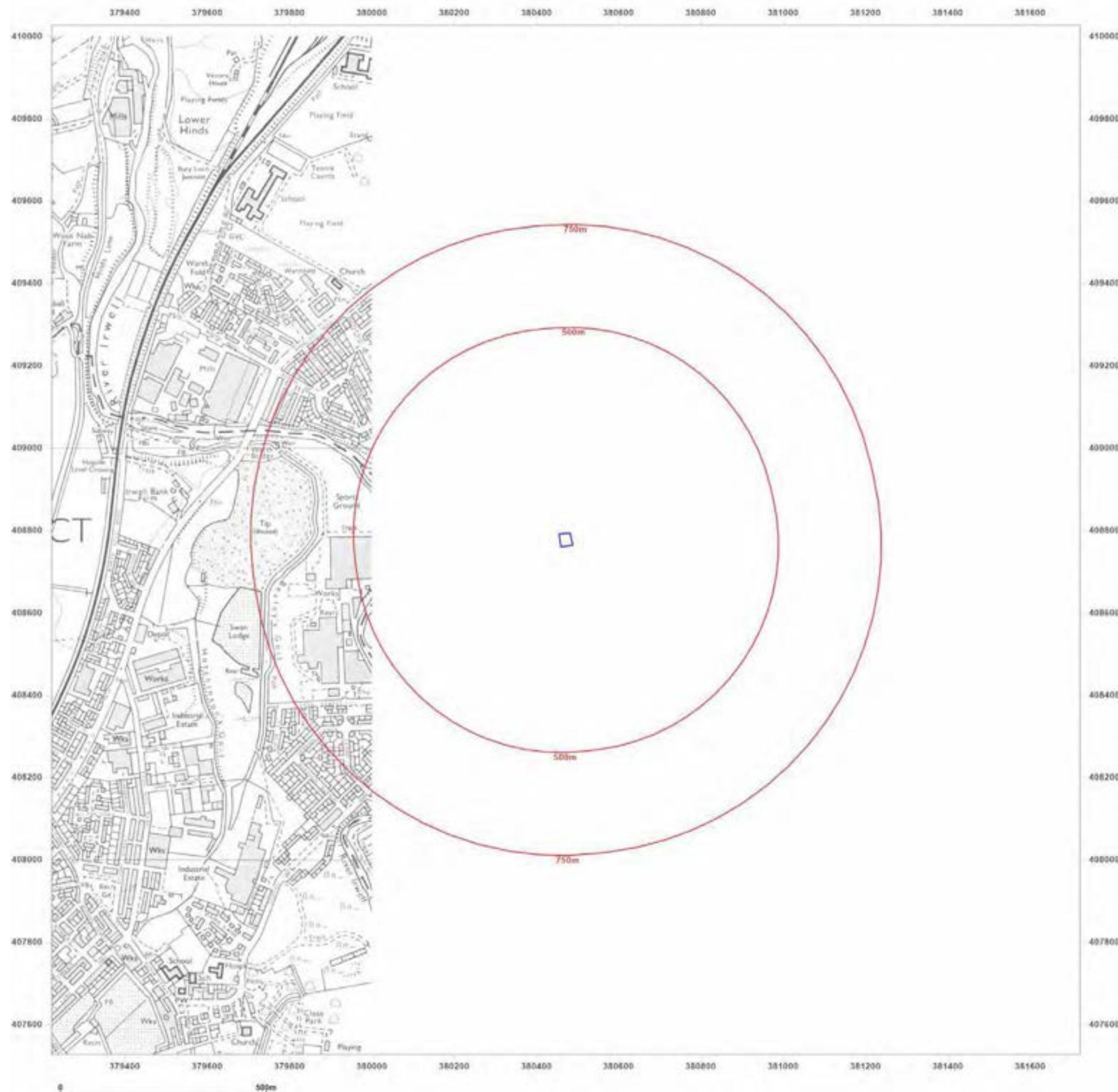


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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



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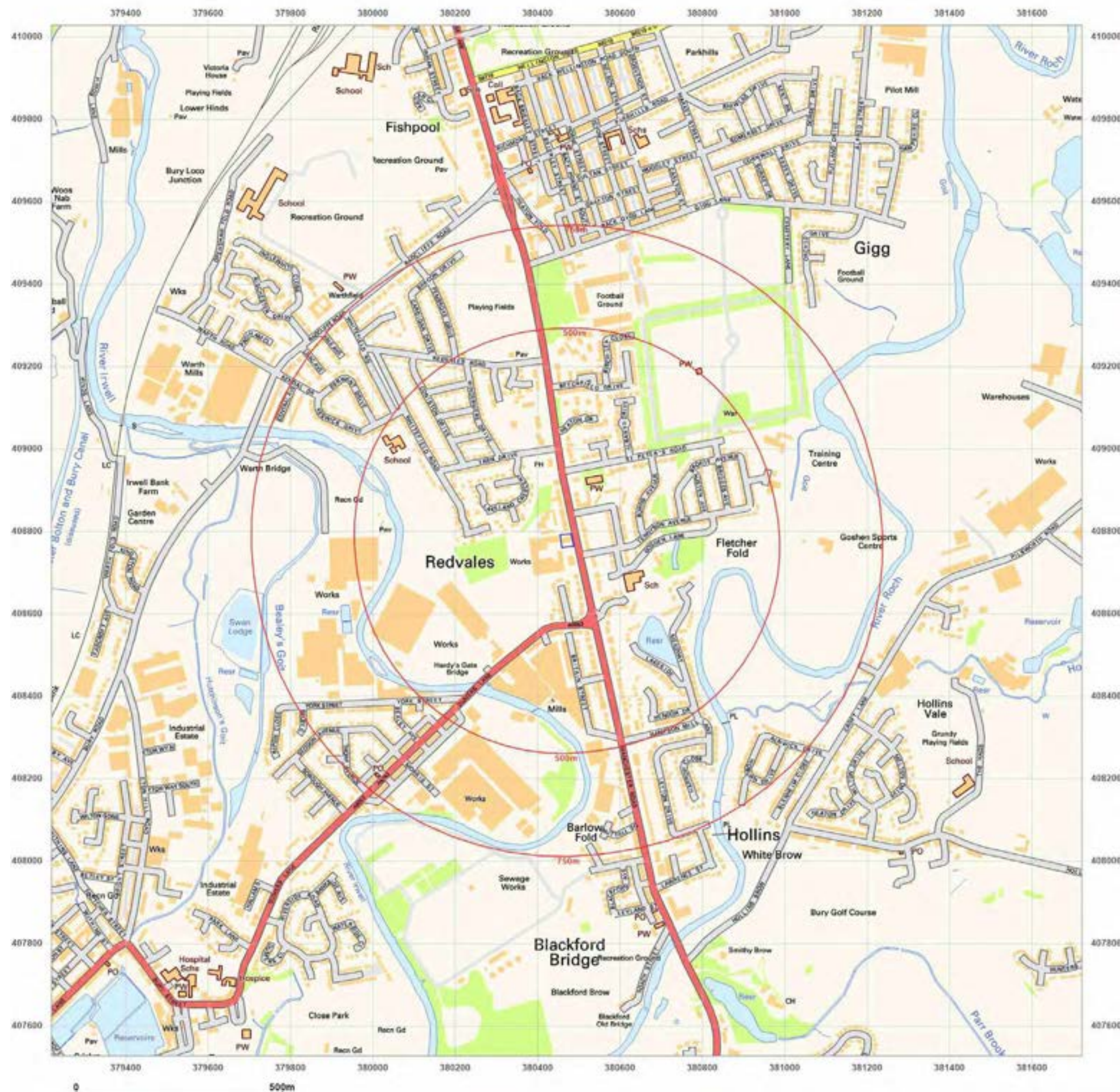


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road, Bury, BL9 9NS

Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



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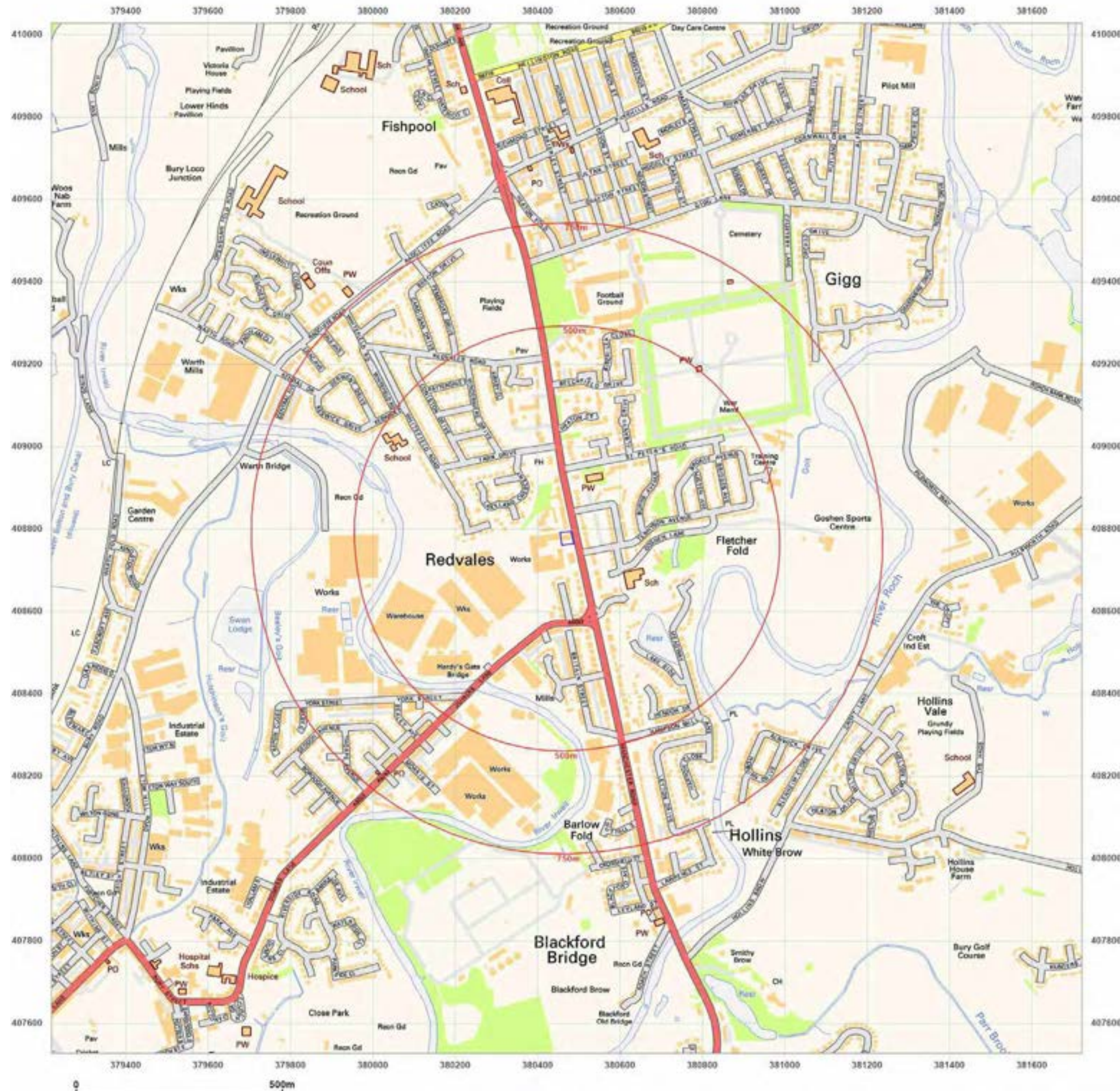


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Site Details:

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Client Ref: EMS_743372_967294
Report Ref: EMS-743372_967294
Grid Ref: 380471, 408777

Map Name: National Grid

Map date: 2021

Scale: 1:10,000

Printed at: 1:10,000



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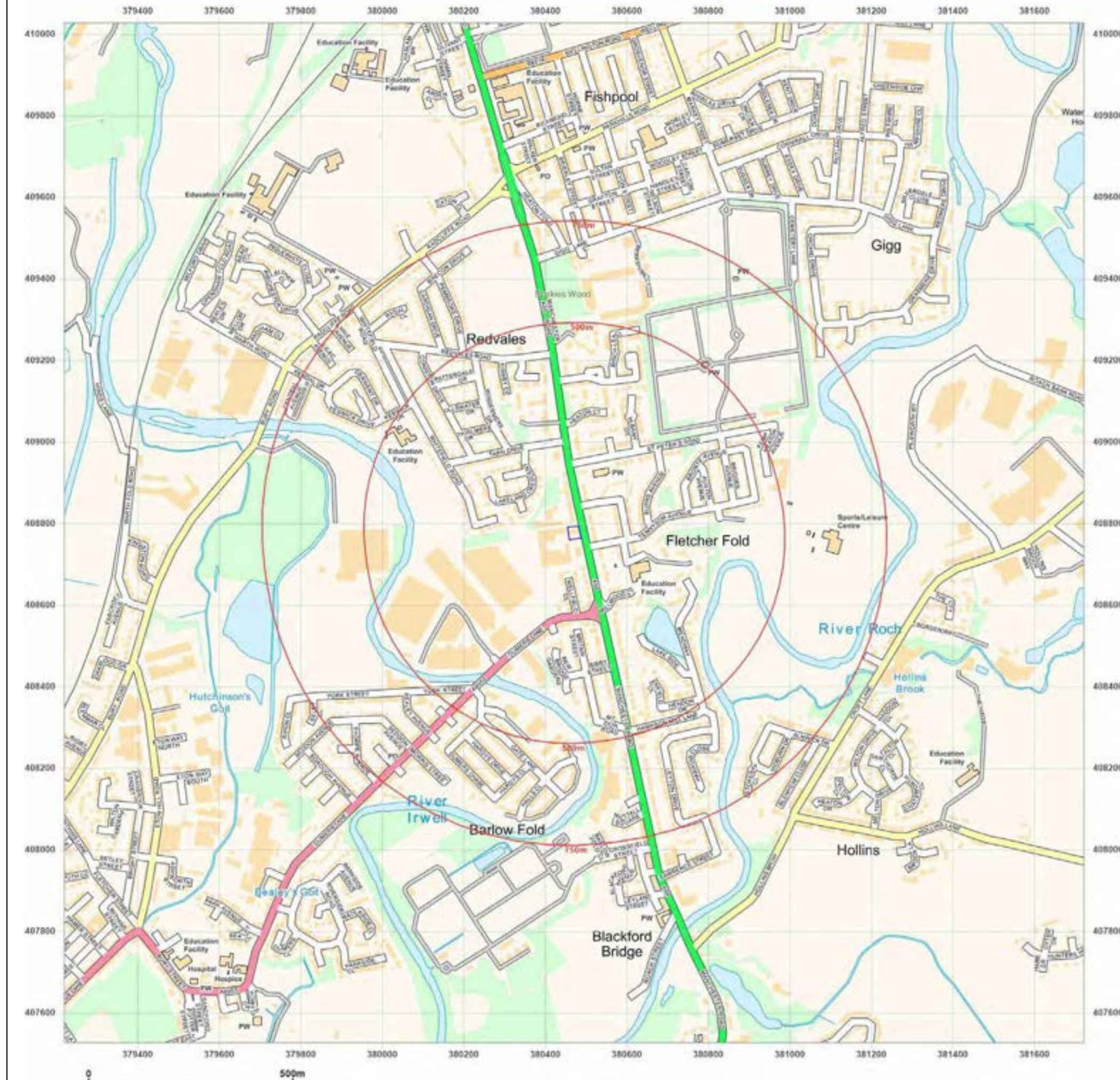


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APPENDIX 04

Borehole Location Plan

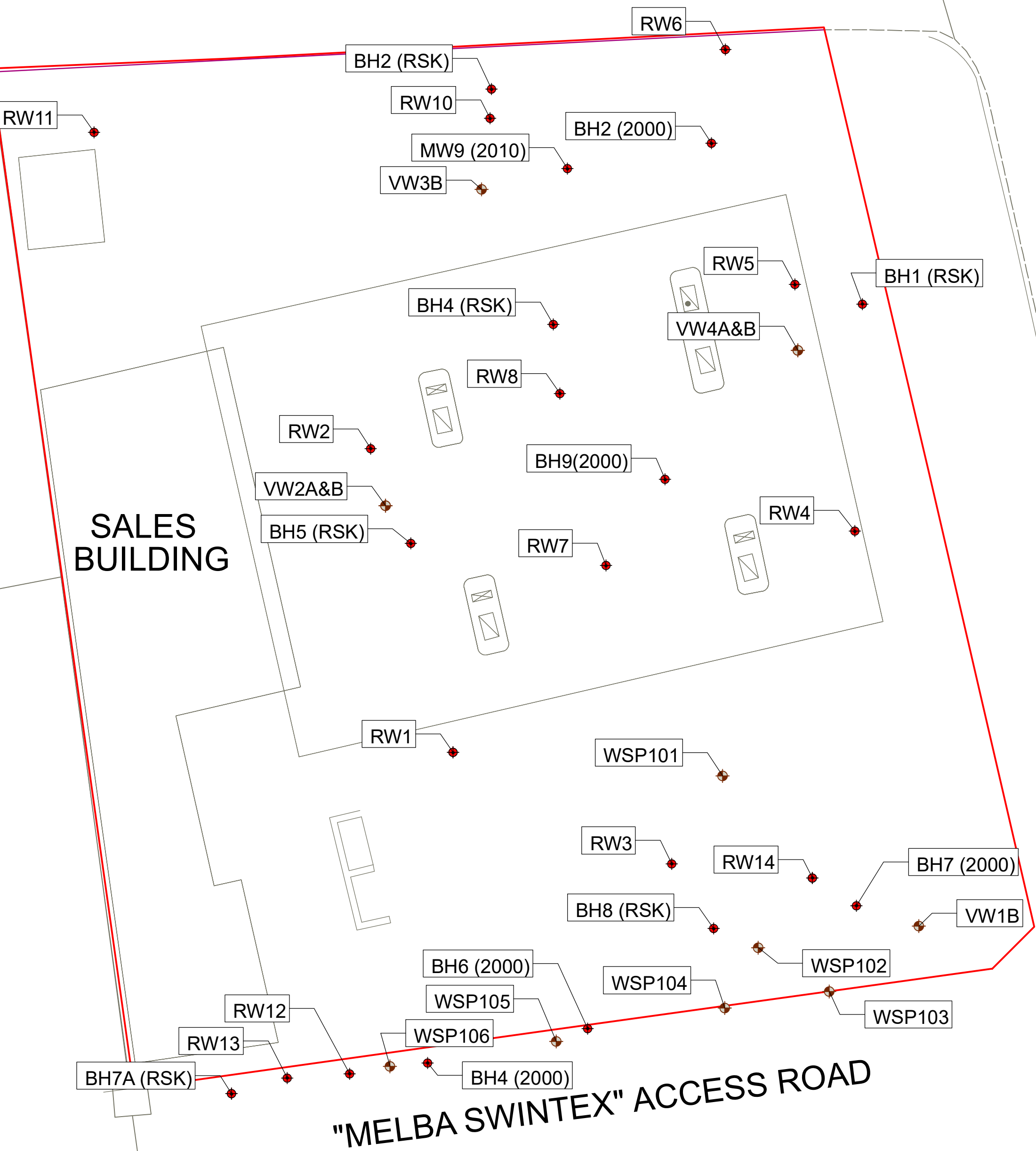
Drawn By:



"MELBA SWINTEX" ACCESS ROAD

SALES
BUILDING

MANCHESTER
ROAD



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DO NOT SCALE

Hole Type

- Windowless sampler
- Rotary Solid Stem Auger

Site Boundary

DRAWING STATUS: REVISION 1



One Queens Drive, Birmingham, B5 4PJ
Tel: +44 (0)121 352 4700
Fax: +44 (0)121 352 4701
Website: www.wsp.com

CLIENT: SPRING PETROLEUM LTD

ARCHITECT: N/A

PROJECT: DERBY GARAGE PETROL FILLING STATION
HUMAN HEALTH AND CONTROLLED
WATERS ASSESSMENT

TITLE: EXPLORATORY HOLE PLAN

SCALE @ 1": NTS	CHECKED: RL	APPROVED: RP
CAD FILE: WSP - A2 Landscape	DESIGN-DRAWN: NA	DATE: February 2018
PROJECT No: 70033843	DRAWING No: DRAWING 3	REV: A

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APPENDIX 05

2021 Groundwater Monitoring Data and Analytical Chemistry

SLR Consulting Ltd
Aspect House
Aspect Business Park
Bennerley Road
Nottingham
NG6 8WR



Attention :	Luke Wilkinson
Date :	17th July, 2020
Your reference :	404.02082.00166
Our reference :	Test Report 20/9045 Batch 1
Location :	Derby Garage
Date samples received :	11th July, 2020
Status :	Final report
Issue :	1

Ten samples were received for analysis on 11th July, 2020 of which nine were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Simon Gomery BSc

Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: SLR Consulting Ltd
Reference: 404.02082.00166
Location: Derby Garage
Contact: Luke Wilkinson
EMT Job No: 20/9045

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

EMT Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27		Please see attached notes for all abbreviations and acronyms		
Sample ID	BH2 (2000)	RW1	RW2	RW3	RW4	RW7	BH7A (RSK)	WSP103	WSP106				
Depth	3.503	3.552	3.684	3.341	3.592	3.585	2.819	3.356	2.867				
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G				
Sample Date	07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020	08/07/2020	07/07/2020	08/07/2020				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	11/07/2020	11/07/2020	11/07/2020	11/07/2020	11/07/2020	11/07/2020	11/07/2020	11/07/2020	11/07/2020		LOD/LOR	Units	Method No.
PAH MS													
Naphthalene #	<0.0001	0.0024	>>0.031	>>0.015	<0.0001	>>0.062	0.0003	0.0002	0.0037		<0.0001	mg/l	TM4/PM30
Acenaphthylene #	<0.000013	0.000027	0.000055	0.00026	<0.000013	0.000046	<0.000013	<0.000013	0.000023		<0.000013	mg/l	TM4/PM30
Acenaphthene #	<0.000013	0.000026	0.00015	0.00008	<0.000013	0.00017	0.000014	0.000016	0.000037		<0.000013	mg/l	TM4/PM30
Fluorene #	<0.000014	0.00012	0.00043	0.00027	<0.000014	0.00042	0.000033	0.000033	0.00014		<0.000014	mg/l	TM4/PM30
Phenanthrene #	<0.000011	0.000094	0.0001	0.00027	<0.000011	0.00015	<0.000011	0.000031	0.000086		<0.000011	mg/l	TM4/PM30
Anthracene #	<0.000013	0.00004	0.000034	0.000033	<0.000013	0.000022	<0.000013	<0.000013	0.000029		<0.000013	mg/l	TM4/PM30
Fluoranthene #	<0.000012	0.000019	<0.000012	0.000027	<0.000012	0.000014	<0.000012	<0.000012	0.000014		<0.000012	mg/l	TM4/PM30
Pyrene #	<0.000013	0.000083	<0.000013	0.000033	<0.000013	0.000023	0.000013	<0.000013	0.000021		<0.000013	mg/l	TM4/PM30
Benzo(a)anthracene #	<0.000015	<0.000015	<0.000015	<0.000015	<0.000015	<0.000015	<0.000015	<0.000015	<0.000015		<0.000015	mg/l	TM4/PM30
Chrysene #	<0.000011	0.000018	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011		<0.000011	mg/l	TM4/PM30
Benzo(bk)fluoranthene #	<0.000018	0.000018	<0.000018	<0.000018	<0.000018	<0.000018	<0.000018	<0.000018	<0.000018		<0.000018	mg/l	TM4/PM30
Benzo(a)pyrene #	<0.000016	0.00003	<0.000016	<0.000016	<0.000016	<0.000016	<0.000016	<0.000016	<0.000016		<0.000016	mg/l	TM4/PM30
Indeno(123cd)pyrene #	<0.000011	0.000019	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011		<0.000011	mg/l	TM4/PM30
Dibenzo(ah)anthracene #	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001	mg/l	TM4/PM30
Benzo(ghi)perylene #	<0.000011	0.000023	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011		<0.000011	mg/l	TM4/PM30
PAH 16 Total #	<0.000195	0.002917	0.031769	0.015973	<0.000195	0.062845	0.000360	0.000280	0.004050		<0.000195	mg/l	TM4/PM30
Benzo(b)fluoranthene	<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001	mg/l	TM4/PM30
Benzo(k)fluoranthene	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001	mg/l	TM4/PM30
PAH Surrogate % Recovery	84	89	88	83	80	87	85	82	82		<0	%	TM4/PM30
Methyl Tertiary Butyl Ether #	<0.0001	<0.0001	<0.0001	0.0004	<0.0001	0.0010	<0.0001	0.013	<0.0001		<0.0001	mg/l	TM15/PM10
Benzene #	<0.0005	<0.0005	0.028	0.26	<0.0005	0.096	<0.0005	0.088	0.0014		<0.0005	mg/l	TM15/PM10
Toluene #	<0.005	<0.005	>>1.6	>>4.7	<0.005	0.039	<0.005	0.007	0.078		<0.005	mg/l	TM15/PM10
Ethylbenzene #	<0.001	<0.001	0.54	0.45	<0.001	0.35	<0.001	<0.001	<0.001		<0.001	mg/l	TM15/PM10
m/p-Xylene #	<0.002	0.069	>>6.4	>>2.3	<0.002	0.61	<0.002	0.025	0.38		<0.002	mg/l	TM15/PM10
o-Xylene #	<0.001	0.044	>>4.5	0.91	<0.001	0.079	<0.001	0.006	0.27		<0.001	mg/l	TM15/PM10
Total Xylenes #	<0.003	0.113	10.900	3.210	<0.003	0.689	<0.003	0.031	0.650		<0.003	mg/l	TM15/PM10
Surrogate Recovery Toluene D8	90	100	100	100	110	100	99	100	100		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	95	100	100	110	100	100	100	100	100		<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<0.01	0.42	1.9	2.3	<0.01	0.58	<0.01	0.55	0.81		<0.01	mg/l	TM36/PM12
>C6-C8 #	<0.01	0.33	1.6	1.9	<0.01	0.53	0.01	0.18	0.74		<0.01	mg/l	TM36/PM12
>C8-C10 #	<0.01	0.05	3.4	0.72	<0.01	0.84	<0.01	0.04	0.20		<0.01	mg/l	TM36/PM12
>C10-C12 #	<0.005	0.14	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	mg/l	TM5/PM16/PM30
>C12-C16 #	<0.01	0.31	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	mg/l	TM5/PM16/PM30
>C16-C21 #	<0.01	0.35	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	mg/l	TM5/PM16/PM30
>C21-C35 #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	mg/l	TM5/PM16/PM30
Total aliphatics C5-35 #	<0.01	1.60	6.90	4.92	<0.01	1.95	0.01	0.77	1.75		<0.01	mg/l	TM5/PM16/PM30

Element Materials Technology

Client Name: SLR Consulting Ltd
Reference: 404.02082.00166
Location: Derby Garage
Contact: Luke Wilkinson
EMT Job No: 20/9045

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

[illegible]

Client Name: SLR Consulting Ltd

Reference: 404.02082.00166

Location: Derby Garage

Contact: Luke Wilkinson

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 20/9045

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 20/9045

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE re	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

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Attention : Luke Wilkinson
Date : 7th April, 2021
Your reference : 404.02082.00166
Our reference : Test Report 21/4485 Batch 1
Location : Derby Garge
Date samples received : 26th March, 2021
Status : Final report
Issue : 1

Ten samples were received for analysis on 26th March, 2021 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Simon Gomery BSc

Project Manager

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QF-PM 3.1.2 v11

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

2 of 7

Client Name: SLR Consulting Ltd

Reference: 404.02082.00166

Location: Derby Garge

Contact: Luke Wilkinson

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 21/4485

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution

AB	x20 Dilution
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EMT Job No: 21/4485

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

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NG6 8WR



Attention : Luke Wilkinson
Date : 6th December, 2021
Your reference : 404.02082.00166
Our reference : Test Report 21/18787 Batch 1
Location : Derby Garage
Date samples received : 26th November, 2021
Status : Final Report
Issue : 1

Twelve samples were received for analysis on 26th November, 2021 of which twelve were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Simon Gomery BSc

Project Manager

Please include all sections of this report if it is reproduced

Client Name: SLR Consulting Ltd

Reference: 404.02082.00166

Location: Derby Garage

Contact: Luke Wilkinson

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 21/18787

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

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As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

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DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

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REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

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ABBREVIATIONS and ACRONYMS USED

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AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x2 Dilution

AB	x7 Dilution
AC	x20 Dilution

EMT Job No: 21/18787

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

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