



Contaminated Land Phase One Desk Study for proposed residential development on land at Gate Street, Rochdale, OL11 1PN.

Prepared for

James Campbell Associates Ltd,
Campbell House,
173 Rochdale Road,
Firgrove,
Rochdale,
OL16 3BN.

October 2023



Summary

This report consists of a phase one contaminated land desk study and oal risk assessment produced in support of a planning application for residential dwellings on land at Gate Street Rochdale OL11 1PN.

Contaminated Land

Following the site walkover and review of the available information it has been concluded that there are no contaminants on or off-site which pose a significant risk of significant harm to the identified receptors. On site, the remains of the former residential dwelling were identified on site and therefore a small of contamination within the rubble/made ground exists. Most of this material is to be removed as part of the development but it is recommended that a clean cover system of at least 600mm is provided in the garden amenity areas.

The report further recommends that a watching brief is maintained throughout the construction of the new dwellings and any signs of potential contamination found are fully investigated, with appropriate remedial action taken as necessary.

Coal Mining risk Assessment

A review of available information has been undertaken, including records from the coal authority. This has identified no historic underground worked coal seams in the area. However, the existence of a potential shallow coal seam has been identified beneath the development site.

Given the records held it is considered unlikely that any shallow (<30m) workings have occurred beneath the site, but it is recommended that further intrusive investigations in the form of a series of 30m deep boreholes are undertaken to determine the existence of the coal seam and whether it has been worked. Following the results the assessment should then be reconsidered.



Contents

Summary.....	2
Contaminated Land	2
Coal Mining risk Assessment	2
Introduction.....	5
Aims and Objectives of the report	5
Scope of works	6
The Site:	7
Current Site use:	7
Research	7
Details of Research	7
Site History	9
Contaminated Land Assessment	12
Regulatory Information	12
Geology and Hydrogeology	13
Hydrology	14
Environmental Sensitivity	14
Coal Risk Assessment.....	15
Site Walkover.....	17
Risk Assessments	18
Contaminated Land	18
Potential Contaminants.....	18
Receptors and Pathways	18
Conceptual Model	20
Coal Risk Assessment.....	21
Conclusions & Recommendations.....	22
Contaminated Lane	22
Coal Assessment.....	22
Figure 1 – Aerial Photograph.....	23
Appendix 1 – Groundsure Data	24



Appendix 2 – Historical Mapping	25
Appendix 3 – Site Walkover Photographs	26
Appendix 4 Report limitations and exclusions	32
Basis of Risk Assessment	32
Limitations and Exceptions of this Report.....	32



Introduction

Martin Environmental Solutions has been commissioned, to carry out a contaminated land desk study and coal risk assessment report in relation to a proposed residential development at Gate Street, Rochdale, OL11 1PN.

Aims and Objectives of the report

The aims and objectives of this report are as follows:

Contaminated Land

- Assess the likelihood of contamination affecting the site,
- Identify any likely receptors to be affected by the potential contamination,
- Identify the pathways by which the receptors will be exposed to any potential contamination,
- Identify any areas where further investigation will be required.

Coal

- Present a desk-based review of all available information on the coal mining issues which are relevant to the application site;
- Use that information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;
- Set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development, and:



Scope of works

This report has been written in line with the 'BS 10175: 2011+A2: 2017 Investigation of potentially contaminated sites – Code of Practice' and Land Contamination Risk Management (LCRM) and with regard to *'The Coal Authority, Risk based approach to development management, Guide for Developers, 2017'*

The scope of this report covers the phase one desk study and coal risk assessment only. It will look at relevant information on: -

- the history of the site and surrounding area,
- the current use of the site and surrounding area,
- the geology and hydrogeology of the area,

A site walk-over survey has been undertaken in addition to consultations with the existing site owner, to identify any potential contamination issues.

Evaluation of the above information will be used to construct an initial conceptual model as appropriate, with the identification of any additional investigations that may be required.



The Site:

Site Address: Land at Gate Street, Rochdale, OL11 1PN..

Grid reference: 389922; 412256

An aerial photograph of the site is included in Figure 1.

Current Site use:

The site currently consists of a square plot of land situated between Gate Street to the north and the rear alley way to Midhurst Street to the south. Existing residential properties lie to the north and south in the form of terrace housing running parallel to Gate Street, to the west being a single detached dwelling and garden and to the east running at 90° to Gate Street along Philip Street. A small rectangular piece of land is located adjacent to the site and Philip Street.

The site is slightly overgrown with a covering of low growing vegetation.

Research

Details of Research

This report has been based on information gathered from a number of reputable sources, covering details:

- on the historic and current use of the site,
- any known waste disposal activities in the area,
- any regulated industrial activities within the vicinity of the site including recorded industrial accidents,
- on the geology, hydrogeology, hydrology of the area,
- identification of any environmentally sensitive sites,
- any natural hazards.

Principle sources of this information have been:

- environmental data from Groundsure Limited
- the Local Planning Authority,
- historic maps (Groundsure Ltd),
- site walk-over survey and discussion with the current owners.
- A Coal Mining Report, attached in Appendix A.



- Published geological maps of the area from British Geological Survey (BGS),
- The Coal Authority interactive maps
-

Site History

Information on the historic uses of the site has been obtained from historic mapping information (Appendix 2), and environmental data from Groundsure Limited.

Mapping Year	Changes on Site	Changes off Site
1848	The site is on the edge of the Deeplish Hall estate and occupies the drive leading to the hall along the western boundary, woodland through the centre and part of a larger field to the east. .	The immediate area is predominantly open fields. To the north approx. 230m is a railway line and to the south approx. 325m a canal. The railway line runs roughly east-west with Rochdale Station to the northeast of the site +800m away, while the canal runs from the southwest, south of the site and then north into the centre of Rochdale. A gravel pit, also identified as a sand pit is located to the southwest of the site approx. 50m away. Further away are a large number of mills, beyond the canal and railway, on the near side exists a corn mill to the northeast at 500m, a lumber yard/saw pit, and cotton mills to the south. A number of wells are located by these mills, with the nearest being to the south of the site at Deeplish Hill. Beyond 500m are additional mills and gravel pits with the main town of Rochdale to the north beyond the railway line.
1890	The site is shown to have trees across the centre and east part.	The immediate area has been developed with residential terrace properties being built to the north (Deeplish, Nicholson & Welburn St.) with other semi-detached properties nearer to the northeast ~30m. A school has been built 200m to the east. Glass houses are shown to the west of the site at Deeplish Hall 50m away and beyond these St Luke's Church. The wider area (>250m) has expanded and is still a major industrial area with a number of mills and gas works shown. An iron works is shown adjacent to the railway line in the north.



		The nearby gravel/sand pit is no longer shown
1910-13	The site has been developed into terrace housing, with two and a half properties occupying the site. Rear yards are located to the south with the properties fronting onto Gate Street	Deeplish estate is gone and the area redeveloped into housing. The nearest mills are to the east 240m away. To the south of the railway line the iron works is no longer shown and, in its place, a shuttle works, eyelet works and marble works. A Sunday school is next to St Luke's Church and a further chapel has been built just to the north of the site. The mill to the east is a (Crossfield) saw mill 220m away,
1938	No Change	The saw mill to the east is now an Iron Works, with a small sand pit, over 250m away from the site to the southeast. No significant changes in the immediate area.
1956-57	No Change	No Significant changes in the immediate area. The sand pit, present in 1956 is no longer shown in 1957. The Iron Works are identified as works
1970-74	No Change	The works by the railway line are labelled as engineering works. A garage and warehouse are shown 87m to the northwest along Milkstone Road. No other significant changes in the immediate area.
1980-87	No Change	No Significant Changes
1991-94	No Change	No Significant Changes in the immediate area. A new primary school is shown adjacent to the existing school in the east.
2001-03	The site has been cleared	The whole terrace has been demolished. Aerial Photographs suggest this was done prior to January 2000.
2010	No Change	No Significant changes in the immediate area.



2023	The property to the west has been constructed.	No significant changes
Aerial photos	The site is shown as having been cleared in 2000, along with the rest of the terrace.	No significant changes The property to the west along Gate Street has been built post 2017.



Contaminated Land Assessment

Regulatory Information

Three permitted activities have been identified within 500m of the site as defined in the Environmental Permitting (England and Wales) Regulations 2016 or previous legislation.

These include a vehicle respraying operation 267m north of the site at Miall Street, A historic foam processing operation 275m east at Norwich Street and a historic costing operation at Greenfield Lane, 349m southeast of the site.

One pollution incident has been recorded within the area, this occurred in July 2001, involving inorganic chemical products and occurred 327m the east with a minor impact on land.

One active landfill has been identified located 416m southwest of the site at Wimpey Construction UK Ltd, Arundel Avenue. Five historic waste sites have been located in the area. All relate to a scrap yard 425m east of the site. Four current waste sites, all covering the same property Rochdale Auto Spares located 372m east on Lincoln Street. In addition 14 waste exemptions have been noted, the nearest at 161m northwest at the Old Bakery relate to WEEE refurbishment, as does the next closest at 424m west, Ashfield Road. 245m east and 318m northeast the screening, blending and use of waste in construction, More WEEE refurbishment 314m northwest at Mere Lane. Recovery of scrap metal 319m northwest, naturing of controlled drugs 399m, and 410m east completes the list.

Given the distances, nature and ages of the above identified sites, they are unlikely to have a significant impact on the development site.

11 currently potential contaminative industrial sites have been identified within 250m of the site. These include;

- Electricity Substations located 58m northwest, 146m southeast & 249m north of the site,

- A works located to the northwest 70m away (the identified former warehouse the site is an office block and empty hardstanding yard,

- An embroidery business, 743m northwest,

- Sport EQ Ltd on Maldon Street 184m north



Additional Works 184m & 195m north
An auto shop 201m North,
Scrap metal merchants 239m west
245m northwest second hand car sales.

These sites are unlikely to pose any risk to the site.

A number of historical potentially contaminative land uses have been identified within 500m of the site from the purchased information; most of these have been identified from the historical mapping and those within 250m of the site include:

The gravel pit to the southeast
Works to the northwest 165m away (Iron Works)
A sand pit 178m to the east.
The works to the east 192m away
The adjacent sand pit 199m
The railway cutting 227m and sidings 244m to the northwest
The garage to the northwest 53m away first identified in 1957 and now the embroidery shop.

Given the age and location of the above they are considered unlikely to significantly impact on the development site.

Geology and Hydrogeology

Information from the British Geology Survey 1:50,000 mapping identifies the bedrock in the area as Pennine Lower Coal Measures Formation or Mudstone, Siltstone and Sandstone overlaid with Glaciofluvial Deposits of Sand and Gravel. The nearest available borehole records held by the British geological survey, to the south of the site, confirm sand and gravel followed by clay and to the northeast sand and gravel.

The information obtained on the hydrogeology of the area identifies the site as having a Secondary A aquifer within both the bedrock and superficial layer on-site capable of supporting water supplies at a local level.

Eight groundwater and 12 surface water abstraction licences have been identified within 2000m of the site. All are historical.

No source protection zones are identified in the area.

The groundwater vulnerability has been identified as high in the surface and superficial geology and low in the bedrock geology.



Hydrology

The nearest watercourse is the River Roch located 265m southeast of the site.

Environmental Sensitivity

A number of Environmentally Sensitive Sites have been identified in the area.

The Rochdale Canal 296m southeast has been identified as a Sites of Special Scientific Interest (SSSI), and a Special Area of Conservation (SAC).

The Liverpool Manchester and West Yorks Greenbelt is also within 1912m south of the site.

The site is unlikely to impact on any of the above environmentally sensitive sites.

The site is within an area of negligible/low risk of natural hazards.

The property is in an area identified as having between less than 1% of properties above the action level of 200 Becquerel's per cubic metre, based on specific property search. Radon protection measures are not required in line with BR211.

No additional natural hazards have been identified & the site has very low/negligible risk of shrink swell, running sand, and compressible ground.



Coal Risk Assessment

The site has been identified as being located within a coal mining reporting area and a development high risk area. The bedrock in the area has been identified as Pennine Lower Coal Measures Formation or Mudstone, Siltstone and Sandstone overlaid with Glaciofluvial Deposits of Sand and Gravel and the historical mapping identifies sand and gravel pits in the wider area. No coal mining has been identified on historical maps and

A review of the Coal Authority's interactive mapping has not identified any past underground mining activities, within the vicinity of the site.

The coal authorities interactive mapping and coal report do not identify shallow mine records within 100m of the site, however it does identify the potential for shallow mining in the immediate area. Coal outcrops are also indicated on the mapping running north - south adjacent to the site.

There are no mine entries within 100m of the site. Abandoned mine plan catalogues do not intersect with the site.

There are no borehole records for the immediate areas on the British Geological Society interactive mapping with the area having been developed since 1900's.

There are no opencast mines, tips, faults, fissures or break lines recorded.

There are no reports of site investigations or remediation within 50m of the site and no records of any mining subsidence or claims having been received. No mine gas issues have been recorded.

There is no future underground mining activity in the vicinity, with the area being built up and no licences or planning permissions recorded within the search area of 200m surrounding the property and no risk of subsidence has been identified.

Coal Mining Issue	Site Affected (Yes/No)	Recommended Mitigation
Underground coal mining (recorded at shallow depths)	No	N/A
Underground coal mining (probable at shallow depths)	Yes	Further intrusive investigations required to confirm presence of shallow coal seams.
Mine entries (shafts and adits)	No	N/A
Coal mining geology (fissures)	No	N/A
Record of past mine gas emissions or potential	No	N/A
Recorded coal mining surface hazard	No	N/A
Surface mining (opencast workings)	No	N/A



Site Walkover

A site walkover was undertaken on the 23rd August 2023 and confirmed much of what had already been identified from the information obtained on the site. The photographs in Appendix 3 provide some indication of the current layout and condition of the site.

The site is accessed from Gate Street to the north and consists of a square plot of land with a concrete panel fence on all four sides. A cobbled alley way runs along the southern boundary a residential garden to the west and a small yard used for storage to the east.

The site is overgrown across its entirety. There is some evidence of the former building still on site with some rubble in places. In addition, some rubbish/litter and waste wood were seen across the site.

No signs of contamination, discoloration or olfactory evidence, dead or dying vegetation were seen during the walkover.

The current owners are unaware of any issues on site which could have led to contamination.



Risk Assessments

Contaminated Land

Potential Contaminants

Following a review of the information gathered on the history of the site and the surrounding area and following the site walk-over survey there are no contaminants identified on or off site that are likely to present a significant possibility of significant harm to any identified receptor.

However, on site evidence of the former dwellings was identified and as such present a small potential for contamination to be present. Most of this will be removed as part of the development and site preparation.

Receptors and Pathways

Potential receptors which may be affected by any unknown contamination on site will include:

- Construction workers who are likely to be affected by any potential contamination as they will initially be working in the ground and are likely to be the ones who unearth any potential contaminants.
- Future users of the site, including residents, staff and visitors to the site. For the purpose of evaluating any effects from any contamination found during any intrusive investigation future users/visitors to the site should be regarded as the 0-6-year-old female child.
- Any building on site e.g., foundations which may be attacked by any contaminants in the ground or services.
- The underlying groundwater which may be contaminated by migrating pollutants present on the site. There is also the potential for further pollution of the groundwater or the watercourse from disturbing any potential contaminants on site.

The pathways by which these receptors may be exposed to any unforeseen potential contamination will include:

Construction workers



- Inhalation, of gases or vapours released during ground work or fine particles.
- Ingestion of the contaminants, principally from cross contamination with contaminated soil and inadequate hand washing before smoking and eating.
- Absorption through the skin following contact with contaminated soil.

Future users and visitors

- Inhalations of gas/vapours or fibres, particularly if these are allowed to enter the new structures through the ground and build up in an enclosed area.
- Ingestion of contaminants, through the ingestion of contaminated soil from the garden area via direct contact, e.g., playing in the garden.
- Absorption of contaminants from dermal contact with contaminated soil.

Buildings

Contaminants on site have the potential to affect the foundations to the new building or the services supplying it.

Watercourses

As discussed above, if they exist on site, there is a potential for any contaminants to migrate through the ground into the groundwater and aquifer or via run-off into the watercourse.

Neighbouring sites

If present on site contaminants have the potential to migrate to neighbouring sites through ground water or air blown transfer.



Conceptual Model

The table represents a basic conceptual model. It highlights the potential sources of pollutants identified from the gathered information, and potential pathways in which any contaminants could reach the identified receptors.

Pathway	Description	Identified sources	Receptor at risk	Likelihood
1	Run off and seepage into groundwater from any spillages	Infilled / made ground	Watercourse/ Environment	Low
2	Migration of gases into the building.	-	Future users	V. Low,
3	Inhalation of gases/ vapours outside	-	Construction workers/future users	V. Low
4	Inhalation of fine particles	Infilled / made ground	Construction workers/future users	Low
5	Direct ingestion of contaminated soil	Infilled / made ground	Construction workers	Low
6	In-direct ingestion of contaminated soil	Infilled / made ground	Future users	Low
7	Absorption via direct dermal contact with contaminated soil	Infilled / made ground	Construction workers/future users	Low



Coal Risk Assessment

Historic mapping and a review of the Coal Authorities interactive mapping has not identified any mining in the vicinity of the development.

An area of potential shallow coal mining has been identified running to adjacent to the site, which may have been worked at some point in the past, although given the evidence from the historic mapping pre-1848, after which the area is shown on mapping and starts to be built up. The risk of the area being mined is therefore minimal.



Conclusions & Recommendations

Contaminated Lane

As a result of the investigation into the historical use of the site no sources of contamination likely to affect the site have been identified off-site. However, the presence of rubble from the former dwelling presents a small risk of contamination being present on site. As such it is recommended that any garden amenity area provided with a clean import 600mm deep cover system to ensure no contamination is present which presents a risk to future occupants

It is further recommended that a watching brief is maintained throughout the construction of the new building and any signs of potential contamination found are fully investigated, with appropriate remedial action taken as necessary and the local planning authority informed of the findings.

Coal Assessment

Given the presence of the potential shallow coal seam near to the site, it is recommended that a further intrusive investigation of the site be undertaken to confirm whether any worked coal seam is present on site. A series of rotary open holes to a maximum depth of 30m are drilled in the base of the quarry floor to confirm or otherwise the presence of potential shallow coal seams or working.

Figure 1 – Aerial Photograph





Appendix 1 – Groundsure Data



Appendix 2 – Historical Mapping

Appendix 3 – Site Walkover Photographs

Western boundary looking south



Northern boundary looking east then west





Western boundary looking north



Eastern boundary looking south then north



Southern boundary looking east then west



Southwest to north east across the site



Southeast to northwest across the site



Northeast to south west across the site





Appendix 4 Report limitations and exclusions

Basis of Risk Assessment

The methods used follow a risk-based approach with the potential risk assessed using the 'Source – pathway – receptor pollution linkage concept.

Limitations and Exceptions of this Report

This report was undertaken for at the request of James Campbell Associates Ltd and as such should not be entrusted to any third party without written permission of **Martin Environmental Solutions**. No other third parties may rely upon or reproduce the contents of this report without the written permission of **Martin Environmental Solutions**. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors do not owe them any duty of care or skill.

This report has been compiled from a number of sources, within the time constraints of the programme, which **Martin Environmental Solutions** believes to be trustworthy. However, **Martin Environmental Solutions** is unable to guarantee the accuracy of information provided by third parties.

The findings and opinions provided in this document are made in good faith and are based on data provided by third parties (Groundsure, Environment Agency, The Coal Authority, and Regulatory Bodies) and the report should be read in conjunction with the limitations on the document control form. The accuracy of map extracts cannot be guaranteed and it should be recognised that different conditions on /adjacent to the site may have existed between and subsequent to the various map surveys.

This report is prepared and written in the context of the purposes stated above and should not be used in a different context. Furthermore, new information, improved practices and legislation may necessitate an alteration to this report in whole or in part after its submission.

The conclusions and recommendations of this report are based on the development described, for any other development the report may require revision.

All of the comments and opinions contained in this report, including any conclusions, are based on the information obtained by **Martin Environmental Solutions**. The conclusions



drawn by **Martin Environmental Solutions** could therefore differ if the information obtained is found to be misrepresentative, inaccurate, or misleading. **Martin Environmental Solutions** reserves the right to amend their conclusions and recommendations in the light of further information that may become available.

The report should be read in its entirety, including all associated drawings and appendices.

Martin Environmental Solutions cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

This report does not comprise a geotechnical assessment of the strata underlying the site.

Any borehole data from the British Geological Survey sources is included on the following basis: 'The British Geological Survey accept no responsibility for omissions or misinterpretations of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation'.

The copyright in this report and other plans and documents prepared by **Martin Environmental Solutions** is owned by them and no such report; plan or document may be reproduced, published or adapted without their written consent.

Complete copies of this report may be made and distributed by the Client as an expedient way in dealing with matters related to its commission.

Any risks identified in a Phase I Desk Study Report are perceived risks. Actual risks can only be assessed following a physical investigation of the site.

The findings of this report are based on finite information obtained from research and consultations. Martin Environmental Solutions cannot guarantee the reliability of all such information and the searches should not be considered exhaustive. The findings of the report may need to be reviewed as any future exploratory investigations progress and in the event that additional archive information becomes available.

Notwithstanding the findings of this study (and any subsequent investigations), if any indication of contaminated soil (visual or olfactory) is encountered at any stage of the development further investigation may be required.



Arboricultural Survey and advice on arboricultural issues are considered to be outside the scope of this report except for their effect on the foundations to the proposed buildings.

Where identification of any species is made, especially invasive plants such as Japanese Knotweed, Himalayan Balsam or Giant Hogweed, this should only be considered as a preliminary assessment and subject to confirmation by a professional Arboriculturist. Martin Environmental Solutions takes no responsibility for failing to identify, or the incorrect identification of, any tree or plant species on site.

Our investigations exclude surveys to identify the presence or indeed absence of asbestos in buildings/infrastructure on site. If asbestos is suspected to be present, we recommend specialists in the identification and control / disposal of asbestos are appointed prior to commencement of any works on site or, if appropriate, purchase of the site. The presence of asbestos on site may have considerable effects on the cost / timescale in developing the site. There is good guidance in relation to Asbestos available on the Health and Safety Executive (HSE) web site.

Whilst a site walkover has been undertaken as part of this report, the survey does not constitute either an asbestos or structural survey and all areas of the site may not have been visited / inspected.