BELGRAVE ROAD
OLDHAM

SHALLOW MINING
SITE INVESTIGATION WORKS

Job Number: LKC 23 1553
Date: February 2024
Client: First Choice Homes Oldham

INCREASING LAND VALUE

LK GROUP

LK Consult Document Verification			
Site Address	Belgrave Road, Oldham, OL8 2JT		
Report Title	Shallow Mining Site Investigation Works		
Job Number	LKC 23 1553	**Document Ref.**	LKC 23 1553-B1-CMSI Belgrave Road
Date Issued	February 2024	**Report Version**	R1
Prepared By	Christopher Kay Hannah Moss	**Reviewed By**	Catherine Baranek

Revision Record			
Revision No.	**Date**	**Nature of Revision**	**Approved By**
R1	23/2/24	Updated client name	PD

DISCLAIMER

This report has been prepared by LK Consult (LKC) who have exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant, experienced in preparing reports of a similar scope.

However, to the extent that the report is based or relies upon information contained in records, reports or other materials provided to LKC, which have not been independently produced or verified, LKC gives no warranty, representation or assurance as to the accuracy or completeness of such information.

This report is issued on the condition that LKC will not be held liable for any loss arising from ground conditions between sampling points (i.e. boreholes/trial pits/hand augers/surface samples) which have not been shown by the sampling points or related testing carried out during the investigation, nor for any loss arising from conditions below the maximum depth of the investigation. Opinions on such conditions, where given, are for general guidance only.

This report is prepared solely for the benefit of First Choice Homes Oldham. It may not be relied upon by, or submitted to a third party for their reliance for the purposes of valuation, mortgage, insurance and regulatory approval, until all invoices have been settled in full.

Those using this information in subsequent assessments or evaluations do so at their own risk.

CONTENTS

PLANS AND FIGURES

APPENDICES

1 Introduction

1.1 Background

LK Consult Ltd (LKC) has been commissioned by First Choice Homes Oldham to carry out investigation works into the potential shallow coal mining risks at Belgrave Road, Oldham. LKC have previously undertaken coal mining desk-based work for the site, listed below:

- Desk Based Coal Mining Risk Assessment by LKC (Ref: LKC 20 1964-02) dated August 2021.

This investigation has been undertaken to confirm the ground conditions below the site and allow an assessment of the potential for the site to be affected by shallow coal seams / workings. The report will aim to confirm the risks from historical coal mining and recommend further assessment and / or remediation as required.

The assessment and interpretation of the factual data obtained as part of this investigation has been undertaken in line with current guidelines including CIRIA758[1].

Ground conditions can change rapidly, especially in areas of made ground; however, it is assumed that that the ground conditions observed are typical and representative of the site as a whole. The ground conditions have been determined from a limited number of exploratory holes, therefore only a small percentage of the total area of the property has been investigated. Conclusions drawn from the ground investigation should be read in this context. LKC cannot accept responsibility for any situations resulting from locally unforeseen ground conditions occurring between exploratory holes.

1.2 Site Details

A summary of the site details is presented in Table 1-1. Figure 1 indicates the site location and boundary. A proposed development plan is shown in Figure 2.

Location	Land to the north-east of Belgrave Road, bounded by Thatcher Street to the south-east and Honeywell Lane to the north-west, Oldham, Greater Manchester. Centred at approximate National Grid Reference 393280E 403610N.
Approximate Area	4,400m^2.
Topography	160 metres Above Ordnance Datum (AOD). Site is topographically level but locally uneven ground was noted.
Current Land Use	Overgrown vegetated land with a number of derelict domestic garages.
Proposed Development	Residential dwellings with gardens.

Table 1-1. Summary of site details.

[1] CIRIA2019: C758D Abandoned mine workings manual. ISBN: 978-0-860017-765-4.

2 Review of Desk Based Information

2.1 Coal Mining Risk Assessment

The desk based Coal Mining Risk Assessment by LKC (Ref: LKC 20 1964-02) dated August 2021 is summarised below.

Additional geological information available has also been included.

2.1.1 Geology

Artificial

There is no mapped artificial ground on site. Artificial ground is mapped adjacent to the northeast, identified as Worked Ground (Undivided) (void) and Infilled Ground. Historical mapping indicates that this was once a railway cutting.

Superficial

The superficial geology is mapped as Devensian Till (Diamicton) across the site.

The indicative thickness of superficial deposit from Sheet 85 Geological Memoir, indicates the superficial deposits are generally between 5m and 20m thick in the area of the site.

Lancashire Sheet 97SW Solid and Drift, 1924 edition records the depth of superficial to the west as between 11m and 15m.

The site is shown to be within the southwest margin of a buried channel. Therefore depths of superficial below the site may be deeper that the above.

Bedrock

The bedrock is mapped as the Pennine Middle Coal Measures Formation (Sandstone). There are no dips present in the vicinity of the site on mapping; however, on the 2010 BGS mapping the bedrock in the wider area is noted to dip between 10^0 and 20^0 to the west / southwest. On the 1975 BGS mapping the bedrock in the wider area is noted to dip between 5^0 and 11^0 to the south.

Given the position of the mapped coal seams on site and in the wider area, LKC are of the opinion that the rock below the site is likely to dip to the south rather than the west.

A fault trending N-S with a down throw to the east is present approximately 250m to the east of the site, a second fault trending N-S with a down throw to the east is present approximately 250m to the west of the site.

The BGS mapping shows the Vanderbreckei Marine Band approximately 150m to the NE of the site.

The closest coal seam shown on the 2010 BGS mapping is the Top Shuttles coal seam, mapped to sub crop approximately 100m to the S of the site. This seam is not thought to dip below the site.

The 1:10,000 scale mapping indicates a coal seam approximately 125m to the N of the site, however, this is not shown on the 1:50,000 scale mapping. The closest named coal seam on the BGS mapping likely to dip below the site is the Higher Chamber (Bancroft) Coal shown to subcrop approximately 475m to the north of site.

Based on the position of the marine band and the mapped presence of the Higher Chamber seam LKC surmise that the unnamed seam 125m to the N of the site is likely to be the Doe (Bottom Shuttles) Coal based on the 1:50,000 scale mapping generalised vertical section shown in Plate 2-2. It is possible that this seam is not shown on the most recent 1:50,000 mapping due to scale.

Extracts from geological mapping are shown on Plate 2-1. These show the differences in geological mapping between 1975 and 2010 mapping.

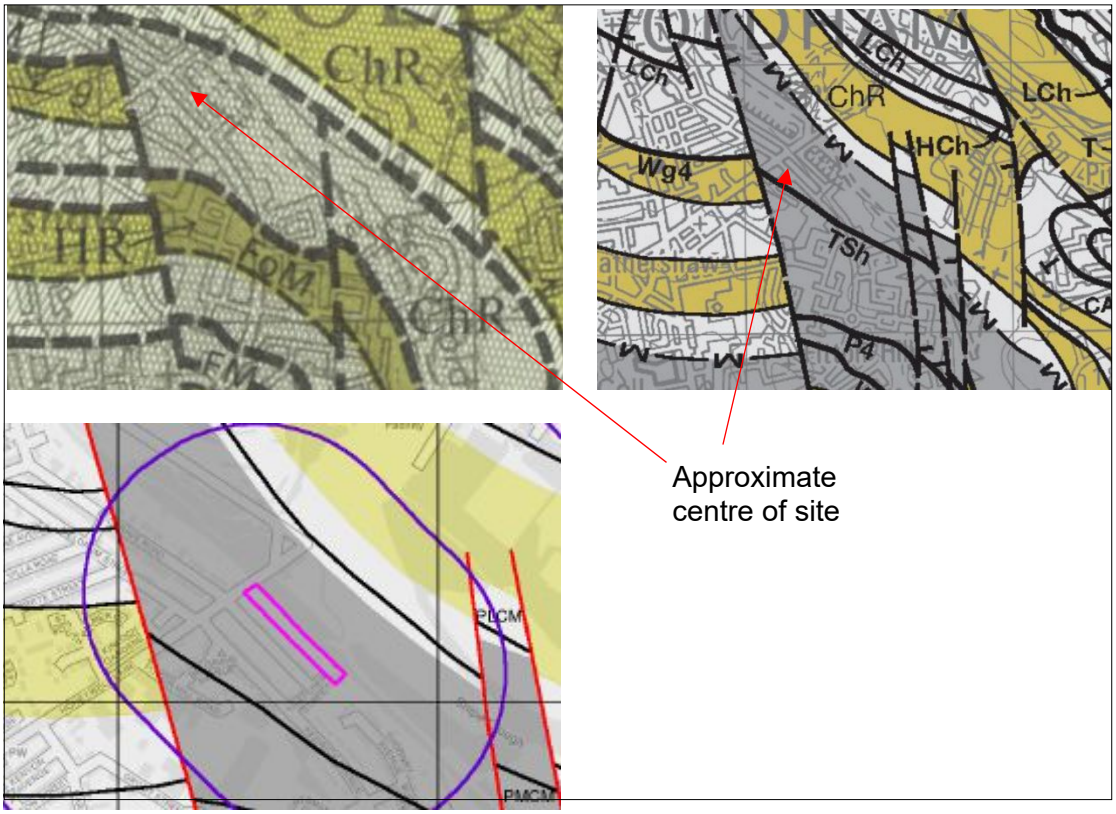


Plate 2-1: Extracts from geological mapping. Top left: 1975 1:50,000 sheet mapping, top right: 2010 1:50,000 sheet mapping (left) and bottom left: 2004 1:10,000 digital mapping. Not to scale.

Plate 2-2 shows an extract of the generalized vertical section from Sheet 85 showing the section of strata expected on and below the site.

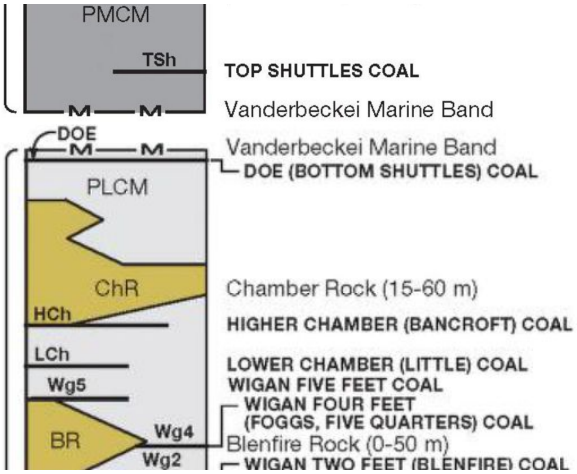


Plate 2-2 Extract of the generalized vertical section from Sheet 85 (dated 2010). Not to scale.

Based on the mapped subcrop location of the Doe coal seam and assumed dips of 5^0 to 11^0 south it is likely that the Doe coal seam is present between 10.9m and 24.3m below rock head below the site.

Sheet 85 explanatory notes provide additional information on the coal seams within the Manchester Area. An extract showing a section from the top of the Middle Coal Measures is provided in Plate 2-3. The shallowest coal seam is anticipated to be the Doe Coal Seam, with the coal seams below this in age order. It should be noted that not all coal seams may be present below the site due to geological variation, however, this indicates that the Doe coal seam was not known to have been worked.

Pennine Lower Coal Measures Formation			
Doe (Hathershaw, Bottom Shuttles)	Ha	0.0–0.2	Not worked
Higher Chamber (Bancroft)	HCh	0.0–0.3	
Lower Chamber (Little)	LCh	0.0–0.4	Not worked
Wigan Five Feet	Wg5	0.1–0.6	Deep mined
Wigan Four Feet (Foggs, Five Quarters)	Wg4	0.1–1.3	Deep mined and surface mined (opencast)
Wigan Two Feet (Blenfire, Lower Victoria)	Wg2	0.1–0.6	Deep mined

Plate 2-3. Extract from the Geology of Manchester district explanatory notes (Figure 5).

Lancashire Sheet 97SW Solid and Drift, 1924 edition has been reviewed and identifies the Hathershaw Mine (also named as the Doe and Bottom Shuttles) subcropping in the north of the site. This contradicts the more recent editions of geological mapping; however, is in line with the Coal Authority data (see Section 2.1.2).

An extract from Lancashire Sheet 97SW Solid and Drift, 1924 edition, 1:10,560 scale is shown on Plate 2-5.

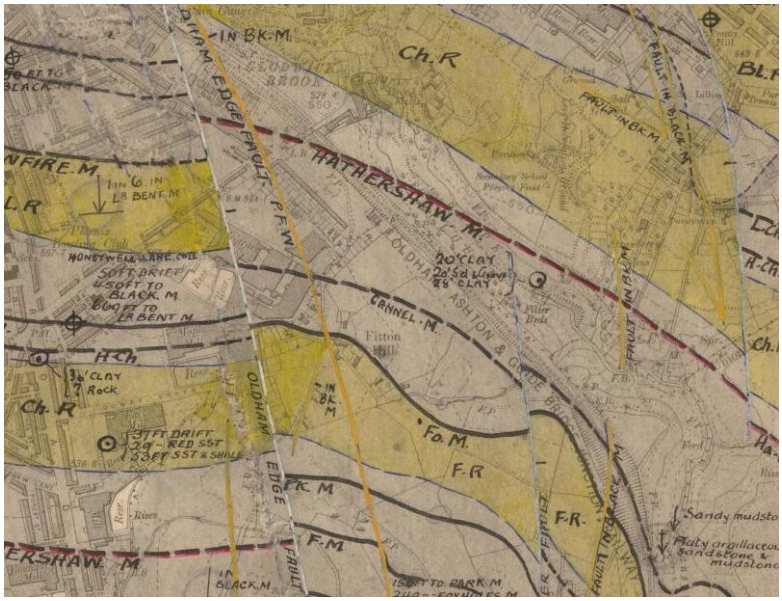


Plate 2-5: Extract from Lancashire Sheet 97SW Solid and Drift, 1924 edition, 1:10,560 scale.

2.1.2 Coal Authority Consultants Coal Mining Report

LKC obtained a Consultants Coal Mining Report which is summarised in Table 2-1.

Mining Activity and Geology	
Past underground mining	No past mining recorded at shallow depths. Shallowest known is the Higher Bent seam 232m below the site.
Probable unrecorded shallow workings	No
Spine roadways at shallow depth	No spine roadway recorded at shallow depth.
Mine entries (within 100m)	None recorded within 100m of the enquiry boundary.
Abandoned mine plan catalogue numbers	Only related to deep mining.
Outcrops	Hathershaw Coal Seam.
Geological faults, fissures and breaklines	No faults, fissures or breaklines recorded.
Opencast mines	None recorded within 500m of the enquiry boundary.
Coal Authority managed tips	None recorded within 500m of the enquiry boundary.
Investigative or Remedial Activity	
Site investigations	None recorded within 50m of the enquiry boundary.
Remediated sites	None recorded within 50m of the enquiry boundary.
Coal mining subsidence	Not received a damage notice or claim for the subject property, or any property within 50m, since 1994. No current Stop Notice delaying remedial works or repairs to property. Not aware of any request made to carry out preventative works before coal is worked.
Mine gas	None recorded within 500m of the enquiry boundary.
Mine water treatment schemes	None recorded within 500m of the enquiry boundary.
Licensing and Future Mining Activity	
Future underground mining	None recorded.
Coal mining licensing	None recorded within 200m of the enquiry boundary.
Court Orders	None recorded.
Section 46 notices	No notices have been given, stating that the land is at risk of subsidence.
Withdrawal of support notices	Not in an area where a notice to withdraw support has been given or where a notice has been given cancelling the entitlement to withdraw support.
Payments to owners of former copyhold land	Not in an area where a relevant notice has been published.

Table 2-1: Summary of Coal Authority Consultants Coal Mining Report.

Plate 2-2 shows the coal outcrops. This is defined by the Coal Authority as *'details of seam outcrops will be included where the enquiry boundary intersects with a*

conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50m buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and /or quality to have been worked will also be included.'

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
HATHERSHAW	Coal	Yes	Within	N/A	107

Plate 2-2: Extract from Coal Authority Report showing outcrops.

Plate 2-3 shows an extract of the plan provided with the Coal Authority Consultants Coal Mining Report.

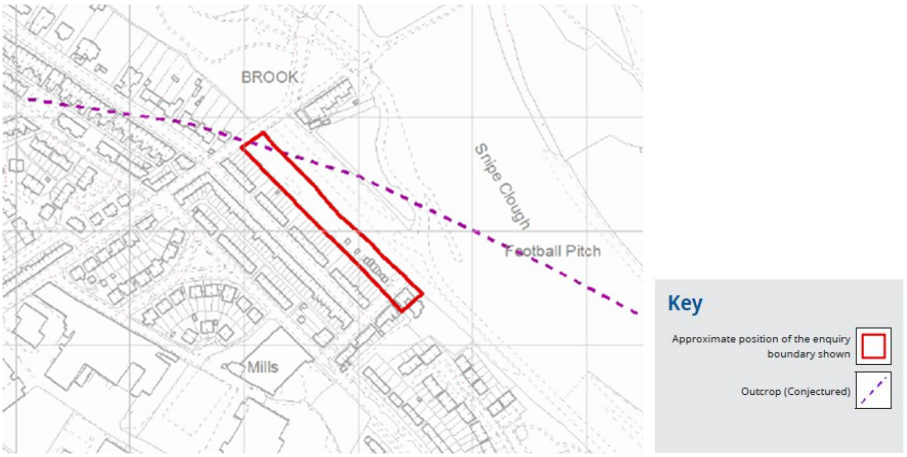


Plate 2-3: Extract from Coal Authority Consultants Coal Mining Report.

The location of the coal seam the Coal Authority Consultants Coal Mining Report corresponds to the Hathershaw Mine identified on Lancashire Sheet 97SW Solid and Drift, 1924 edition, 1:10,560 scale.

2.1.3 Coal Mining Risk Assessment and Recommendations

The coal mining risk and investigation requirements are summarised in Plate 2-4.

Coal Mining Issue	Potential Risk	Investigation Work
Underground coal mining (recorded at shallow depths)	**X**	N/A
Underground coal mining (probable at shallow depths)	**X**	N/A
Mine entries (shafts / adits)	**?**	No specific investigation work required. However, watching brief during intrusive investigation work and groundworks to check for any signs of mine entries.
Coal mining geology (fissures)	**X**	N/A
Record of past mine gas emissions	**X**	Gas monitoring during mining investigation (rotary drilling). Depending on findings of mining investigation, possible precautionary gas protection measures or gas monitoring in line with CIRIA 665[2].
Recorded coal mining surface hazard	**?**	Rotary boreholes to establish if the Hathershaw Coal seam recorded to subcrop in the N of the site is present and assess the potential for shallow mining to have taken place.
Surface mining (opencast workings)	**X**	NA

Table 2-4: Summary of risk assessment and investigation requirements.

[2] CIRIA (2007). “Assessing Risks Posed by Hazardous Ground Gases to Buildings”. CIRIA C665.

3 Investigation Works

3.1 Site Investigation Design and Methodology

The following site investigation works were carried out by LKC in December 2023:

- 3no. open hole rotary boreholes to 40.00m below ground level (bgl) (RH1-RH3).

The Open Hole Rotary Drilling was carried out to determine the depth of coal seams and the presence / absence of shallow workings across the site.

The boreholes were undertaken by Taylor Drilling Ltd using a Baretta T41 Rotary rig fitted with a PCD drill bit and drilled to a maximum depth of 40.00mbgl in 3no. locations.

Upon completion, the boreholes were grouted up.

A permit was granted by the Coal Authority to undertake the coal mining investigation. This is provided in Appendix A.

Rotary borehole locations are shown on Figure 3 and logs are provided in Appendix B.

4 Ground Conditions

4.1 Rotary Open Hole Drilling

The rotary borehole logs are provided in Appendix B. The investigation locations are shown on Figure 3.

4.1.1 Made Ground

Made Ground was recorded in RH1 and RH3 to a maximum depth of 2.80mbgl. No made ground was recorded in RH2.

The made ground recorded in RH1 was described as 'Colliery Waste' comprising mainly ash and clinker. No description was given for the made ground in RH3.

4.1.2 Superficial

Natural interbedded light brown clay and fine sands was recorded in all locations to maximum depths between 25.00-28.00mbgl.

4.1.3 Bedrock

Possible weathered rockhead was encountered in all locations from below depths of 25.00mbgl and 28.00mbgl, as detailed below:

- Competent drilling / possible weathered light brown mudstone was recorded from below 28.00mbgl in RH1, 25.00mbgl in RH2 and 25.00mbgl in RH3.
- All boreholes terminated in the above strata at 40.00mbgl.
- No evidence of coal or workings was recorded in any of the locations.

The depth of superficial to the west of the site (offsite) is recorded as 11-15mbgl and indicative thicknesses of superficial in the general area are 5-20m. It is assumed that the deeper superficial on site (to 25.00-28.00mbgl) is due to the site lying at the edge of a buried glacial channel. LKC have assumed that the competent drilling / possible weathered mudstone recorded from 25.00-28.00mbgl is highly weathered bedrock and not representative of superficial deposits.

4.1.4 Ground Gas

No detectable concentrations of methane, carbon dioxide, carbon monoxide or hydrogen sulphide or any oxygen depletions were measured during the rotary drilling process.

5 Conclusions and Recommendations

The majority of the site to the north is within a Development High Risk Area relating to coal outcrops.

To investigate the above potential hazards a total of 3no. rotary open hole boreholes were sunk to a maximum depth of 40.00mbgl across the site.

5.1 Shallow Coal Mining

Based on the investigation work undertaken and ground conditions encountered, there is no evidence of the Hathershaw (Doe) coal seam subcropping below the site (as shown on 1924 edition mapping and Coal Authority Consultants Report). The coal seam is assumed to subcrop to the north (as shown on more recent editions of mapping) and dip below the site at depth (below 40mbgl).

12m thickness of bedrock was encountered in the north of the site, extending to 15m thickness in the south of the site.

The Hathershaw seam is a thin seam (maximum 0.2m thick) and it is likely only to have been worked if exposed close to the surface (worked at outcrops, opencast, bell pits). As the recorded superficial deposits have been identified as up to 28m thick, these methods of workings are not expected to have occurred on the site.

Although underground workings are unlikely to be viable, an assessment has been included as a precaution, as detailed below.

Shallow workings related ground subsidence events may manifest as localised crown hole collapses at the surface (which are related to workings roof failures), or can be associated with more extensive ground movements, typically associated with pillar collapse, floor heave, or a combination of roof and pillar failure. As there is limited evidence for structural damage caused by pillar failure compared with that resulting from roof collapses, the focus of engineering assessments of the potential instability at the surface has focussed on roof collapses as the more likely mechanism of failure.

The limit height on void migration, where no appreciable surface subsidence can result is termed ‘acceptable cover’. The calculation of the amount of acceptable cover is determined by the worked thickness of the seam (t) and the amount of overlying rock cover (h). The acceptable cover criterion is generally referred to as ht.

According to CIRIA C758D[3], from the examination of mines within Coal Measures, the height of collapse migration might exceptionally extend to 10t the height of the original extraction. As a result of this, the 10t criterion has been adopted by the industry as providing reasonable assurance against surface subsidence from roof collapses in old pillar and stall mines. However, there are documented cases, albeit rare, where migrations in excess of 20t have been observed.

CIRIA C758D, lists a number of circumstances where the acceptable cover criterion may need to be increased from 10t. These include:

[3]CIRIA (2019). “Abandoned Mine Workings Manual”. CIRIA C758D

- Where the strata dip is >20°.
- Strong groundwater flows within workings and rising or falling groundwater levels.
- Where multi-seam extractions have taken place.

The above circumstances are unlikely below the site; therefore, the 10t guidelines are considered appropriate.

Assuming (worst case) that the Doe coal seam is present at 40m below the site, there is at least 12m rock cover in the north of the site and 15m rock cover in the south of the site.

Although the Doe coal seam is only thin, a potential roadway height within workings could be 1.5m and this has been used as the potential worked thickness (t). The height of rock cover required will be 15m (10t).

Although only 12m of rock cover is present in the north of the site, there is a substantial thickness of superficial deposits which can also contribute to the rock cover.

The Coal Authority adopts the rule of thumb that the rock cover contribution should be in excess of 80%. 12m of rock cover would be required to contribute 80% of the total cover (10t=15m) which is present below the site.

There is considered to be sufficient acceptable cover above any potential workings and ground instability at the surface is not anticipated from any shallow underground workings.

Based on the assessment undertaken, there is not considered to be a significant risk of ground instability associated with shallow coal mine workings (surface and underground) and no specific stabilisation work is recommended.

A watching brief during groundworks is recommended as detailed below.

5.2 Watching Brief

A watching brief should be undertaken during groundworks to identify any potential features which may indicate the presence of shallow coal mining hazards. The watching brief should cover the period in which any earthworks, reduce level dig or foundation excavation works are being undertaken. This should be undertaken by a suitably qualified coal mining engineer or consultant.

Such hazards may include, but not limited to, features such as unexplained depressions or voids, outcropping coal seams, localised areas of deep made ground (which could represent backfilled areas of coal mining related ground subsidence, crown holes or mine entries), or unexpected man-made items at depth (e.g. brickwork, concrete, timber or steelwork).

Mine entries may manifest during excavation works as circular, square or rectangular areas of deep made ground (typically several metres in size) set against the natural strata (e.g. Glacial Till or weathered rock). Mine shafts may also be covered with a large, thick concrete cap.

If any of the above features are identified during the course of the development works then work should be stopped to allow the mining engineer / consultant to assess them and if necessary design further or additional investigation and / or remediation works.

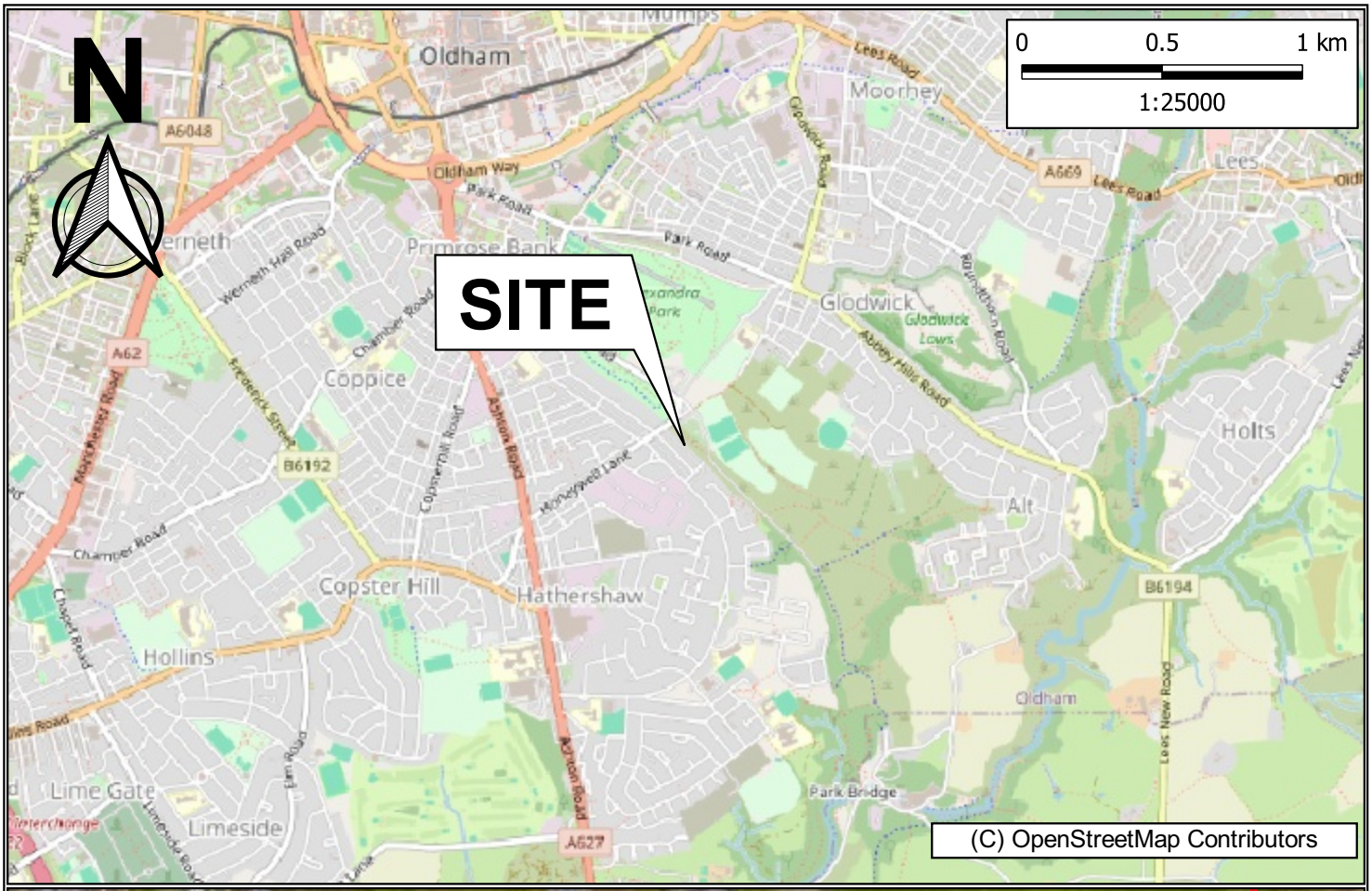
5.3 Ground Gas

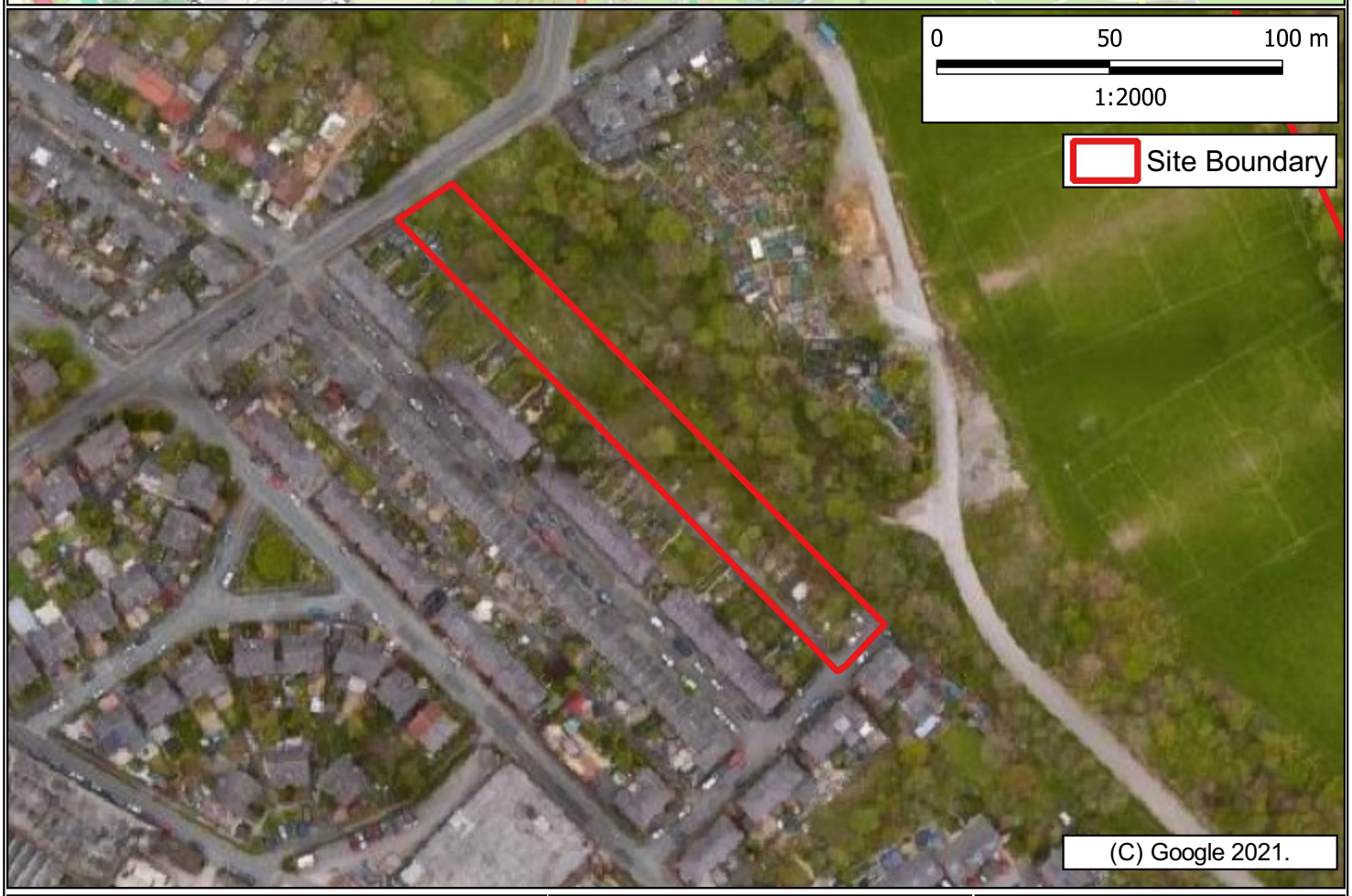
No detectable gas was recorded during drilling. A sulphur odour was noted during the drilling, therefore gas monitoring and a gas risk assessment should be undertaken.

5.4 Additional Advice

A copy of this report should be provided to the Coal Authority and their approval sought for the above findings.

Plans and Figures





Client: First Choice Homes Oldham		Title: Site Location & Boundary Plan	
Site: Belgrave Road, Oldham		Scale (see scale bar): 1:25,000 & 1:2,000 @ A4	Figure: 1
Job No.: LKC 23 1553	Drawn By: CB	Checked By: CB	Drawn: Jan 2024

Revision:

LK CONSULT

Extract from: Nicol Thomas
Drawing Ref: Proposed Site Layout, No.04, Rev:B (October 2020)

KEY

Site Boundary

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.

LK CONSULT LIMITED

Client: First Choice Homes Oldham

Site: Belgrave Road, Oldham

Title: Proposed Development Plan

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC 23 1553	See Scale Bar	2	A

Drawn By:	Checked By:	Drawn:
AC	CK	Feb 2024

Extract from: Nicol Thomas
Drawing Ref: Proposed Site Layout, No.04, Rev:B (October 2020)

N

KEY

- Site Boundary
- Rotary Borehole (RBH)

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.

LK CONSULT LIMITED

Client: First Choice Homes Oldham

Site: Belgrave Road, Oldham

Title: Site Investigation Location Plan

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC 23 1553	See Scale Bar	3	A

Drawn By:	Checked By:	Drawn:
AC	CK	Feb 2024

Appendix A

Coal Authority Permit

The Coal Authority

Permit to Enter or Disturb Coal Authority Interests

Permit 27635

Name and Address of Permit Holder:

John Stephens & Co
Office Suite 3 Moorfield House
2a Moorside Road
Swinton
M27 0EL

Site Location:

Belgrave Road
Oldham

This certificate hereby grants the above named Permit Holder a Permit to carry out:-

Ground investigation by three boreholes to 40m within the Authority's interests at the identified site location above as shown on the Grant Permit Boundary (overleaf) for the period of **12 months** from the granted date shown below. *The granting of this Permit does not constitute advice given by the Authority in relation to the proposed operations. It is the Permit Holder's responsibility to obtain appropriate health, safety, environmental, technical and legal advice.*

Conditions:

- *Manned entry (i.e.) into mine entries/workings) is strictly prohibited.*
- *Water flush*
- *Gas Monitoring CO, CH_4, CO_2, O_2, H_2S at borehole and rig*
- *Operators undertaking the work must be in possession of this certificate and the Permit boundary plan at the time of works*
- *Appropriate borehole sealing without delay and to withstand site level changes*

Signed: Izaak Hayes Granted Date: ***04/12/2023***

For and on behalf of The Coal Authority

Nominated Representative: Izaak Hayes, Permitting Manager;
The Coal Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG
Tel: 01623 637147; E-Mail: permissions@coal.gov.uk

The Coal Authority

Granted Permit Boundary

Permit Ref: 27635

Permit Boundary:

Appendix B

Rotary Borehole Logs

T
D S

TAYLOR DRILLING SERVICES LTD

295 Devonshire Rd, Atherton, Manchester M46 9QB
Tel: 01942 826135
Mobile: 07724 801 475
E-Mail: ian@taylordrillingservicesltd.co.uk

Rotary Borehole Logsheets

Rotary Borehole Logsheet

Tel: 01942 826135
Mob: 07724801475
e-mail: ian@taylordrillingservicesltd.co.uk

Date 12/12/2023

BH Dia:100mm	Total Depth:40.0m	Cased	BH No: RH1
Site:	**Belgrave Rd Oldham**	Sampling and insitu testing	

Depths (m) From	To	Description of Strata	Key	Depth From/To	75 mm	75 mm	75 mm	75 mm	75 mm	75 mm	N Value
GL	2.8m	Colliery Waste Mainly Ash & Clinker									0
2.8m	28.0m	Interbedded Light brown clay + Fine sands									0
28.0m	40.0m	competent drilling poss weathered light brown mudstone									0
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0

Key
S-SPT
C-CPT
U-Undisturbed
D-Disturbed
NR - No recovery
W- Water
UB - Bulked U100
B- Bulk

Water Entries

Details of standing times, Hand excavations etc.	DEPTHS From	DEPTHS To	TIMES From	TIMES To

Installation details of Monitoring wells		DEPTHS From	DEPTHS To
50mm plain pipe			
50mm slotted pipe			
Bentonite seal			
Gravel fill			

Rotary Borehole Logsheet

Tel: 01942 826135
Mob: 07724801475
e-mail: ian@taylordrillingservicesltd.co.uk

Date 13/12/2023

BH Dia:100mm	Total Depth:40.0m	Cased	BH No: RH2
Site:	**Belgrave Rd Oldham**	Sampling and insitu testing	

Depths (m) From	To	Description of Strata	Key	Depth From/To	75 mm	75 mm	75 mm	75 mm	75 mm	75 mm	N Value
GL	25.0m	Interbedded Light brown clay + Fine sands									0
25.0m	40.0m	Competent drilling possible weathered light brown mudstone									0
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0

Key
S-SPT
C-CPT
U-Undisturbed
D-Disturbed
NR - No recovery
W- Water
UB - Bulked U100
B- Bulk

Water Entries

Details of standing times, Hand excavations etc.	DEPTHS From	DEPTHS To	TIMES From	TIMES To

Installation details of Monitoring wells		DEPTHS From	DEPTHS To
50mm plain pipe			
50mm slotted pipe			
Bentonite seal			
Gravel fill			

Rotary Borehole Logsheet

Tel: 01942 826135
Mob: 07724801475
e-mail: ian@taylordrillingservicesltd.co.uk

Date 14/12/2023

BH Dia:100mm	Total Depth:40.0m	Cased	BH No: RH3
Site:	**Belgrave Rd Oldham**	Sampling and insitu testing	

Depths (m) From	To	Description of Strata	Key	Depth From/To	75 mm	75 mm	75 mm	75 mm	75 mm	75 mm	N Value
GL	0.8m	Made ground									0
0.8m	25.0m	Interbedded Light brown clay + Fine sands									0
25.0m	40.0m	Competent drilling possible weathered light brown mudstone									0
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0
											0

Key
S-SPT
C-CPT
U-Undisturbed
D-Disturbed
NR - No recovery
W- Water
UB - Bulked U100
B- Bulk

Water Entries

Details of standing times, Hand excavations etc.	DEPTHS From	DEPTHS To	TIMES From	TIMES To

Installation details of Monitoring wells		DEPTHS From	DEPTHS To
50mm plain pipe			
50mm slotted pipe			
Bentonite seal			
Gravel fill			

Based across the UK with offices in Manchester, Liverpool, Swindon and Glasgow.

Manchester (Head Office)
Unit 29
Eton Business Park
Eton Hill Rd, Radcliffe
M26 2ZS

t: 0161 763 7200
e: info@thelkgroup.com

Swindon
39 Bowman House Business Centre
Bowman Court
Whitehill Lane
Royal Wootton Bassett
Swindon
SN4 7DB

t : 01793 987 390
e : info@thelkgroup.com

Glasgow
Wright Business Centre
1 Lonmay Road
Glasgow
G33 4EL

t: 0141 773 6269
e: info@thelkgroup.com

Liverpool
Unit 10
12 Jordan Street
Baltic Triangle
Liverpool
L1 0BP

t: 0161 763 7200
e: info@thelkgroup.com

LK GROUP

- Geotechnical
- Contaminated
- SuDS & Flood Risk
- Project Management
- Land Remediation
- Land Drilling
- Japanese Knotweed
- Air Tightness Testing