



GROUNDTECH
CONSULTING

Job title: New Office Block, Bury

Report type: Coal Mining Risk Assessment

Prepared for: JD Sports

Date: January 2022

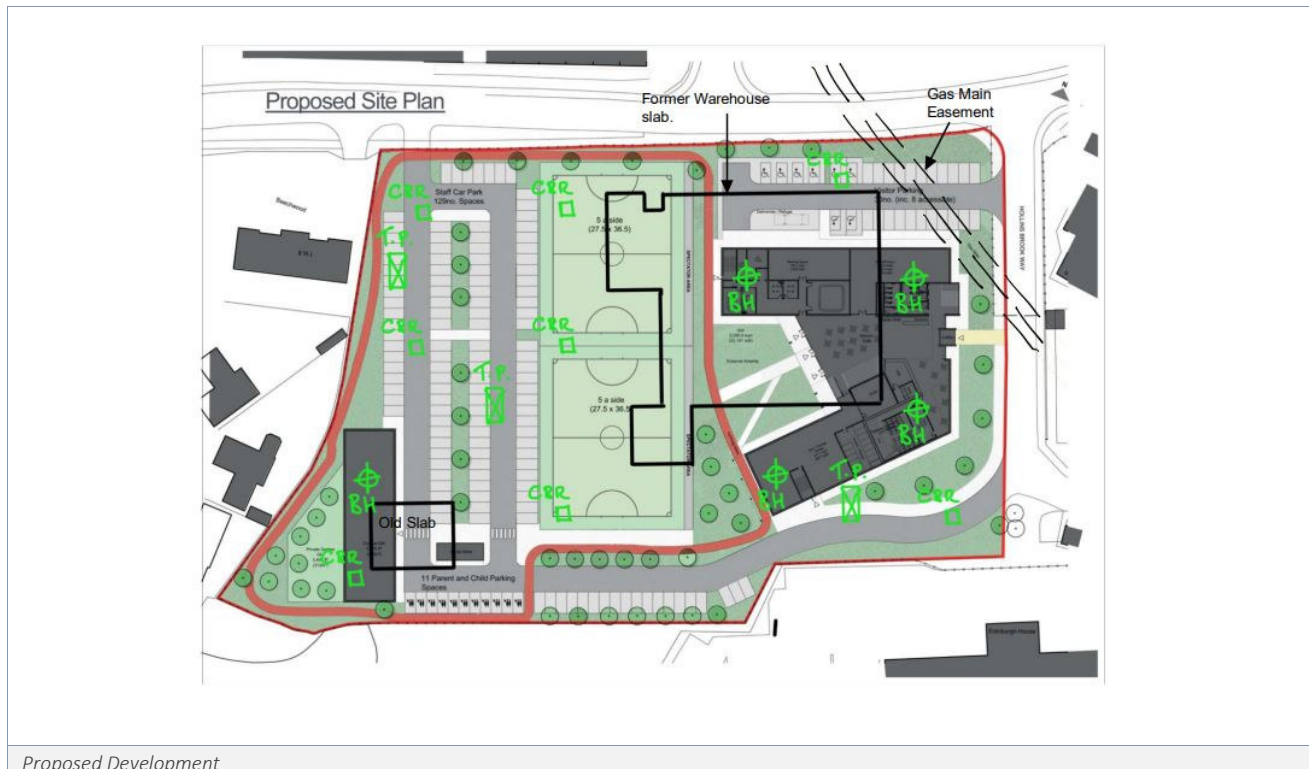
Document Control Form	
PROJECT	NEW OFFICE BLOCK, BURY
REPORT NAME	COAL MINING RISK ASSESSMENT
REPORT REFERENCE	GRO-21438-3119
STATUS	FINAL
ISSUE DATE	26 JANUARY 2021
REVISION	
CLIENT	JD SPORTS
CLIENT CONTACT	-
For and Behalf of Groundtech Consulting	
SIGNATURE	
AUTHOR	Jamie Parr BSc (Hons)
SIGNATURE	
CHECKED	Richard Wyatt MEng (Hons) FGS
SIGNATURE	
REVIEWED	James Doyle BSc (Hons) CGeol FGS

1.0 INTRODUCTION

Groundtech Consulting have been instructed by Kennedy Redford on Behalf of JD Sports to undertake a Coal Mining Risk Assessment (CMRA) for a site located at Pilsworth Road, Bury. This CMRA will summarise the findings of the consultations and determine the level of risk to the proposed development.

1.1 Proposed Development

The proposed development is commercial end use comprising the construction of a new office block containing associated hard surfaced car park as well as two five a-side football pitches.



1.2 Scope of Works

The rationale of the Coal Mining Risk Assessment is to:

- Obtain and examine all available information on potential coal mining features and related issues which are applicable to the subject site.
- Identify and consider all the risks to the proposed development from coal mining, taking into account past, current and future implications.
- Based on the findings of the risk assessment, if necessary, recommend further work and/or measures to mitigate the coal mining legacy impacting the site.
- Demonstrate to the Local Planning Authority and their statutory consultee the Coal Authority that the site at the centre of the planning application is stable at the surface to develop or can be made safe and satisfy the requirements of National Planning Policy Framework (NPPF) with regards to Development on Unstable Land (PPG14), particularly if in Development High Risk Area.



1.3 *Limitations*

This Coal Mining Risk Assessment is based on information obtained from a number of sources, and the information is assumed to be correct. Other conditions may exist on the site that have not been taken into account in this assessment as they are outside the scope of works. Groundtech Consulting are not responsible for these circumstances that are not outlined in the report.

The assessment has been prepared for the exclusive use of the client. No third parties may rely on or reproduce the contents of the report without the written permission of Groundtech Consulting Limited. If any unauthorised third party comes into possession of the report, they rely on it at their own risk and Groundtech Consulting Limited will not be obliged to provide a duty of care.

2.0 SITE SETTING

2.1 Location

The site is located circa 2.4km southeast of Bury Town Centre, as shown on the Project Location Plan GRO-21438-P01. The site is approximately centred on National Grid Reference 381527, 408662.



Site Location

Access to the site is gained off Hollins Brook Way to the east of the site.

2.2 Site Description

The site is relatively flat lying across its footprint and roughly rectangular in shape, encompassing an area of approximately 1.5 hectares. The site is clear of buildings following the demolition of the former A-Plant Unit which was previously on the site, with the exception of one building located along the northern boundary. The industrial buildings have been removed to slab level and the site area is currently being utilised as overspill parking, serving the adjacent office development.

The site is bound by Pilsworth Road to the north followed by industrial units. A commercial office is located to the east adjacent to Hollins Brooks Way and a residential development is present to the west. South of the site is a local Nature Reserve and commercial building.

3.0 SITE SETTING

3.1 *Summary of Relevant Information*

A summary of the relevant sources obtained and used to formulate a ground model to inform the risk assessment is presented below:

- *Coal Authority Mining Report.*
- *Coal Authority Interactive Map.*
- *Geological Survey Sheet 85 Manchester at 1:50,000 Scale - Solid and Drift Edition.*
- *Memoir of Geological Sheet 85.*
- *Relevant BGS Records.*

3.2 *Site History*

The site remained undeveloped throughout history until a warehouse was constructed on site, which first appeared on historical maps in 1988. Another small building was erected in the south western corner of the site which was established by 2001.

Historical maps show no evidence for past coal mining on, or in the immediate vicinity of the site. No shafts, pits, collieries or coal mining features have been recorded on the historical maps.

3.3 *Geology*

A summary of the geology underlying the site is discussed below:

Made Ground

Made Ground is not indicated beneath the site on the relevant geological plans. However, is likely to exist due to the sites historical development.

Superficial Deposits

Hummocky Glacial deposits are indicated to underlie the site comprising Clay, Sand and Gravel.

Solid Geology

The solid geology is the Trencherbone Rock Sandstone which forms part of the Pennine Lower Coal Measures.

Geological Faults

Faults are present circa 130m north east and circa 150m south of the site trending approximately north west – south east. The site is shown to be on the downthrown side of both faults. The surrounding area is heavily faulted.



Trencherbone (Oldham Great) Coal

The Trencherbone seam is described in the memoir as economically one of the finest coal seams in the western area that shows little variation in its quality. It is also stated to be subject to washouts from the overlying Trencherbone Rock Sandstone.

The Trencherbone coal is described as a first rate house coal and has been exhaustively mined with a workable thickness between 3ft and 6ft.

BGS Records

The nearest BGS boreholes record is located approximately 15m south of the site and the following sequence was recorded:

- *Topsoil – 0.4m bgl*
- *Loose to Medium dense yellow brown clayey SAND – 1.8m bgl*
- *Firm grey brown silty sandy CLAY with some laminations and silt bands – 5.3m bgl*
- *Medium dense brown fine and medium SAND – 5.5m bgl*
- *Firm/stiff dark brown silty sandy CLAY with fine and medium subrounded gravel – 9.0m bgl.*

A further BGS borehole record is located circa 80m east of the site and the following sequence was recorded:

- *Backfill – 2.0m bgl*
- *Sand and Gravel – 33.0m bgl*
- *Marl – 34.0m bgl*
- *Sandstone/Marl – 42.0m bgl*
- *Sandstone – 76.0m bgl*
- *Sandstone/Marl – 80.0m bgl*
- *Marl with Sandstone bands – 89.0m bgl*

Other BGS borehole records in the area to the west of the site do not record any bedrock being encountered up to a depth of 13.0m bgl.

The BGS borehole records are presented in *Appendix 2*.

4.0 COAL AUTHORITY MINING REPORT

The site lies in an area where the Law Society and Coal Authority recommends a mining search is undertaken due to past or current mining possibly affecting the site.

A search has been carried out through the Coal Authority and Mining Report is presented in *Appendix 3*. A summary of the main findings is outlined below.

Past Underground Mining

The property is not within a surface area that could be affected by any past recorded underground coal mining. However, the property is in an area where the Coal Authority believes there is coal which may have been worked at some time in the past.

Present Mining

The site is not within the zone of influence of any present underground coal workings.

Future Mining

The property is not in an area where the Coal Authority are determining whether to grant a licence to remove coal by underground workings.

The property is not in an area likely to be affected at the surface by any planned underground workings.

Reserves of coal exist in the local area that may be worked in the future.

No notice of the risk of land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

Mine Entries

There are no records of any mine entries on or within 20m of site boundary.

Coal Mining Geology

The Authority is not aware of any damage arising due to geological faults or lines of weakness that have been affected by coal mining.

Opencast Coal Mining

The property is not in an area affected by past or present coal mining extracted by opencast methods. The property is also not in an area affected by a proposed opencast coal mine.

Subsidence

The Coal Authority has not received a damage notice or claim for the subject property or within 50m since 31 October 1994.

Mine Gas

There is no record of mine gas emission requiring action by the Coal Authority within the boundary of the property.

Withdrawal of Support

The property is not in an area which notice of entitlement to withdraw support has been published.

5.0 COAL AUTHORITY INTERACTIVE MAP

The Coal Authority Interactive Map has been consulted to obtain any further information with regard to historic coal mining at the site. The information is summarised in the following section:

Development High Risk Area

The southern half of the site, to the south of the coal seam bisecting the site is indicated to be within the Development High Risk Area.

Past Shallow Coal Mine Workings

None indicated.

Probable Unrecorded Shallow Workings

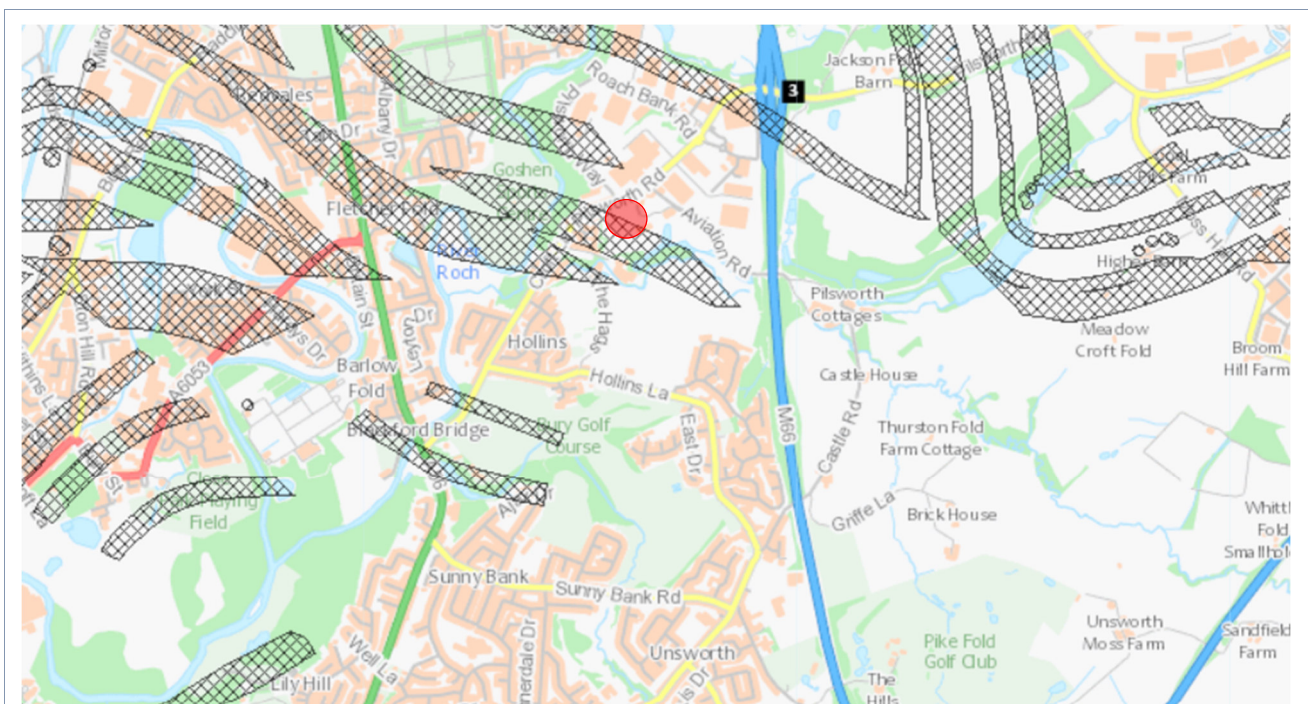
Probable unrecorded shallow coal mine workings are indicated in the south of the site in the area indicated to be within the Development High Risk Area.

Mine Entries

There are no recorded coal mine entries on, or within 1km of the site.

Outcrop/Subcrop

A coal seam subcrop is indicated running across the site trending north west to south east.

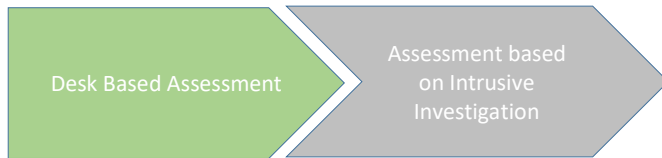


Coal Authority Interactive Map - Development High Risk Areas



6.0 COAL MINING RISK ASSESSMENT

The Coal Mining Risk Assessment presented on the following pages has been compiled to assess the risks associated with historic coal mining based on the information obtained from all sources.



- The table below represents the second stage in the risk assessment process based on a **Desk Based Assessment**.
- In order for a development site to be deemed 'suitable' the level of risk needs to be reduced to an acceptable level. The purpose of each stage of risk assessment is to establish if there is a requirement for additional stages of assessment in order to have sufficient confidence that the surface of the site is stable for development.

Coal Mining Risk Assessment for a residential development at New Office

Issue	Hazard	Site Affected - Yes/ No	Consequence	Recommended Mitigation Measures
Recorded Coal Workings	• Ground subsidence. • Ground instability.	No – No workings are recorded beneath the subject sit by the Coal Authority Report.	Not Applicable	No Action Required
Recorded Mine Entries	• Catastrophic collapse of mine entry leading to ground instability or voids at the ground surface. • Settlement of the ground surface above/adjacent to the mine entry. • Generation of crown holes at the ground surface. • Mines gas emissions.	No – No mine entries are recorded on or within the vicinity of the site.	Not Applicable	No Action Required
Unrecorded Coal Workings	• Ground subsidence. • Ground instability.	Yes – Probable shallow unrecorded coal workings are indicated to be present underlying the south of the site from the Coal Authority Interactive Map. A coal seam is present subcropping beneath the site and is anticipated to extend beneath the southern area of the site	Ground subsidence associated with historic mine workings can give rise to levels of damage to the built environment that may affect both serviceability and design life of a structure.	The depth to bedrock is not known as no records are present on the site. An intrusive investigation is recommended to assess the risk from

Coal Mining Risk Assessment for a residential development at New Office

Issue	Hazard	Site Affected - Yes/ No	Consequence	Recommended Mitigation Measures
		which is within an identified Development High Risk Area. The seam is anticipated to be either the Blenfire Coal or Trencherbone Coal both of which are recorded as being worked in the BGS memoir. The Coal Authority report no records of subsidence claim due to mining.		possible unrecorded workings - Action Required. A watching brief should also be maintained during the groundworks for evidence of Made Ground.
Unrecorded Mine Entries	• Catastrophic collapse of mine entry leading to ground instability or voids at the ground surface. • Settlement of the ground surface above/adjacent to the mine entry. • Generation of crown holes at the ground surface. • Mines gas emissions.	Yes – If unrecorded workings are present subject to the depth of superficial deposits, unrecorded mine entries may be present..	Ground subsidence associated with historic mine workings can give rise to levels of damage to the built environment that may affect both serviceability and design life of a structure.	There is a possibility of unrecorded workings beneath the site and unrecorded mine entries cannot be ruled out at this stage. The risk will be further assessed when the ground conditions are determined during the Ground Investigation.
Coal Mining Geology (fissures)	• Ground subsidence. • Mixtures of noxious of explosive gases reaching the ground surface via faulted/broken strata and entering buildings,	No – The Coal Authority has no record of damage due to geological faults or other lines of weakness that have been affected by coal mining.	Not Applicable	No Action Required

Coal Mining Risk Assessment for a residential development at New Office

Issue	Hazard	Site Affected - Yes/ No	Consequence	Recommended Mitigation Measures
	structures, confined spaces etc., when an explosive or asphyxiating hazard may be generated. Stepped rockhead profiles where there has been subsidence across faults, impacting settlement. Of proposed structures.	There is only a risk of reactivation of faults from significant longwall mining, which is there is no evidence of beneath the site.		
Records of mine gas emissions	Mixtures of noxious of explosive gases reaching the ground surface via superficial deposits, faulted/broken strata or poorly filled mine entries and entering structures, confined spaces etc., when an explosive or asphyxiating hazard may be generated.	No – Hummocky Glacial deposits are indicated to be present between any potential workings and the surface of the site. The nearest BGS boreholes has recorded a substantial thickness of cohesive Clay deposits. The Coal Authority Report outlined that no records of claims relating to mine gas emissions were recorded in the surrounding area.	Mine gases may be present within historic workings and mine shafts which could potentially migrate into proposed buildings underlain by historic mine workings.	If unrecorded workings are present beneath the site, the overlying cohesive superficial deposits will act as a barrier for mine gas migration. The risk from mine gases from unrecorded workings is currently considered low. This requires confirmation by intrusive investigations, gas monitoring is proposed in shallow installations. There will only be a risk if unrecorded workings are encountered and associated unrecorded shafts are present which may act as a pathway for gas migration. No Action Required at this stage.



Coal Mining Risk Assessment for a residential development at New Office

Issue	Hazard	Site Affected - Yes/ No	Consequence	Recommended Mitigation Measures
-------	--------	-------------------------	-------------	---------------------------------

Surface mining (opencast workings)	• Potential of a ground gas source and/or migration pathway. Potential settlement problems. • Combustible material left behind after historic opencast workings may ignite if in the vicinity of excessive heat such as utility cables.	No.	Not Applicable	No Action Required.
------------------------------------	--	-----	----------------	---------------------

APPENDIX 1 - Plans



GROUNDTECH
CONSULTING



CLIENT
JD SPORTS
PROJECT TITLE
NEW OFFICE BLOCK, BURY
PLAN TITLE
PROJECT LOCATION PLAN

DATE
JANUARY 2022
SCALE
NTS
PLAN NUMBER
GRO-21438-P01

Rev.	Details	Date

Status	
Preliminary	
Draft	
Issued	●
For Comment	
Approved	

Notes
● - Site Location



APPENDIX 2 – BGS Borehole Records

Norwest Holst Soil Engineering Ltd.

Borehole No.

5

Contract No. F4767

BOREHOLE LOG

Location Pilsworth - Bury

Sheet 1 of 1

Client Metropolitan Borough of Bury SDO NW 215

Chainage

Method of Boring Percussion

Ground Level 79.7 m.A.O.D.

Diameter of Borehole 150 mm

Date 2/12/80

8148 0856

Description of Strata	Legend	Depth Below G.L. (m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/R.Q.D.%	Daily Progress
TOPSOIL.		0.40	79.3				
Loose to medium dense yellow brown clayey SAND.		1.80	77.9		0.50 1.50	9 15	
Firm grey brown very silty sandy CLAY with some laminations and silt bands.		5.30	74.4		2.50 3.50 4.50		
Medium dense brown fine and medium SAND.		5.50	74.2		5.50		
Firm/stiff dark brown silty sandy CLAY with fine and medium sub rounded gravel.		9.00	70.7		6.50 7.60 8.50		

Type of Sample

- ☒ S.P.T. ☒ Undisturbed
☒ C.P.T. ☒ Vane
☒ Jar ☒ Water
☒ Bulk ☒ Piezometer

Remarks (Observations of Ground Water etc.)

Water seepage from 5.30 m casing at 3.00.
Chiselling 1 hr from 7.20 to 7.60.

D. STRATA LOG			
Geological Classification	Description of Strata	Thickness	Depth
(BGS only)		M	M
	Backfill	2	0 - 2
	Sand and gravel	31	2 - 33
	Marl	1	33 - 34
	Sandstone/marl	8	34 - 42
	Sandstone	34	42 - 76
	Sandstone/marl	4	76 - 80
	Marl with narrow sandstone bands	9	80 - 89
Other Comments			

FOR OFFICIAL USE ONLY

FILE: CONSENT NO: BGS REF. NO:
 LICENCE NO: USE OF BH: NGR:

APPENDIX 3 - Coal Authority Mining Report



The Coal
Authority

CON29M

coal mining report

1 PILSWORTH WAY, BURY, BL9 8RE



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Mine entries	Page 5



Further action

No further reports from the Coal Authority are required. Further information on any next steps can be found in our Professional opinion.

For more information on our reports please visit
www.groundstability.com



Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. In view of the coal mining circumstances we would recommend that any planned or future development should follow detailed technical advice before beginning work on site. Please see **page 3** for further details on **Future development**.

Your reference: **ORD-21438-2207**
Our reference: **51002823864001**
Date: **21 December 2021**

Client name:
James Doyle

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk



The Law
Society

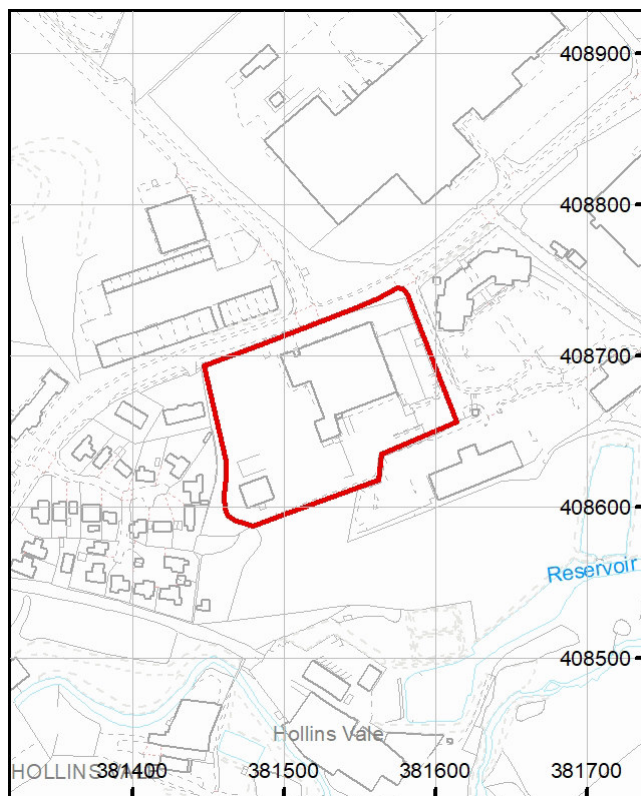
Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is
on the coalfield



Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2018. All rights reserved.
Ordnance Survey Licence number: 100020315.

This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.



Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@coal.gov.uk.

Professional opinion



Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed.

If you are looking to develop, or undertake works, within a coal mining development high risk area your Local Authority planning department may require a Coal Mining Risk Assessment to be undertaken by a qualified mining geologist or engineer. Should you require any additional information then please contact the Coal Authority on **0345 762 6848** or email **cmra@coal.gov.uk**.

Detailed findings

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

The Coal Authority owns the copyright in this report and the information used to produce this report is protected by our database rights. All rights are reserved and unauthorised use is prohibited. If we provide a report for you, this does not mean that copyright and any other rights will pass to you. However, you can use the report for your own purposes.

1 Past underground coal mining

The property is not within a surface area that could be affected by any past recorded underground coal mining.

However the property is in an area where the Coal Authority believes there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered, particularly prior to any site works or future development activity, as ground movement could still be a risk. Your attention is drawn to the Professional opinion sections of the report.

2 Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3 Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4 Mine entries

There are no recorded coal mine entries known to the Coal Authority within, or within 20 metres, of the boundary of the property.

This information is based on the information that the Coal Authority has at the time of this enquiry.

Based on the Coal Authority's knowledge of the mining circumstances at the time of this enquiry, there may be unrecorded mine entries in the local area that do not appear on Coal Authority records.

5 Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6 Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8 Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9 Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

10 Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11 Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

12 Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13 Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14 Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Statutory cover



Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.

www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call **01623 646 333**. Further information can be found on our website: www.gov.uk/coalauthority.

Glossary



Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

payments to owners of former copyhold land - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

shaft - vertical entry into a mine

site investigation - investigations of coal mining risks carried out with the Coal Authority's permission

stop notice - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

subsidence claim - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

withdrawal of support - a historic notice informing landowners that the coal beneath their property was going to be worked

working facilities orders - a court order which gave permission, restricted or prevented coal mine workings

APPENDIX 4 - Limitations

Limitations

This contract was completed by Groundtech Consulting on the basis of a defined programme and scope of works and terms and conditions agreed with the client. This report was compiled with due skill and care, taking into consideration the project brief provided, project objectives, agreed scope of works, prevailing site conditions and budget allocation.

Other than that defined in the paragraph above, Groundtech Consulting provides no other accountability or warranty whether express or implied, is made in relation to the services. Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted industry practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon, or transferred to, by any other party without the written agreement of a Director of Groundtech Consulting. A third party who relies on this report, does so at their own and sole risk and no liability to such parties is provided by Groundtech Consulting.

It is the understanding of Groundtech Consulting that this report is to be used for the intended purpose as set out in the introduction. The purpose was instrumental in determining the scope and level of the services provided. Should the purpose of the report or the proposed end use of the site change, this report will no longer be directly applicable, and its validity readdressed. No reliance upon the report in the revised situation should be assumed by the client without the permission of Groundtech Consulting.

The report was written in 2022, later changes in legislation, statutory requirements and industry best practices have not been considered and this should be allowed for. Ground conditions can also change and should be investigated if there is any significant delay in acting on the findings of this report. The period of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions in this report should not be relied upon in the future without the written confirmation from Groundtech Consulting that it is safe to do so.

The observations and conclusions outlined in this report are based exclusively on the services that were provided as set out in the agreement between the client and Groundtech Consulting.

Groundtech Consulting are not liable for the existence of any condition, the discovery of which would require additional investigation outside the agreed scope of works or core competency. The services provided are based upon Groundtech Consulting observations of existing physical conditions at the site gained from site reconnaissance together with interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and Groundtech Consulting assume the information to be correct.

No responsibility can be accepted for errors for third party information presented in this report. Groundtech Consulting were not authorised to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the services. Groundtech Consulting are not liable for any inaccurate information, misrepresentation of data or conclusions, which may inform the scope of investigation undertaken by Groundtech Consulting and forms the contract with the client.

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable due to its heterogeneous properties and as investigation exploratory locations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report, particularly between exploratory holes. The extent of the limited area depends on the soil and groundwater conditions, together with other constraints such as the position of any existing structures and underground utilities. Geo-Environmental testing was carried out for a limited number of parameters [as stipulated in the contract] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The groundwater level often has not had time to reach equilibrium and a monitoring period is required. Furthermore, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawings provided in this report are not meant to be an accurate base plan, but are preliminary and used to present the general relative locations of features on, and surrounding, the site.

