

Environmental
Geotechnical
Specialists



COAL MINING RISK ASSESSMENT REPORT

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Report on a Coal Mining Risk Assessment

Location: 35 St John's Road,
Huddersfield, HD1 5DX.

For: Northern Design Partnership

Report No. C5076/25/E/7735

Report date: March 2025

For and on behalf of **Rogers Geotechnical Services Ltd**

REDACTED

REDACTED

Imran Sakoor BEng FGS
Geo-environmental Engineer

Tobias Merry MSci (Hons), FGS
Geo-environmental Engineer

1. Introduction

It is understood that as part of the planning application at the site, a Coal Mining Risk Assessment has been requested by the planning authority. Consequently, a desktop study was commissioned in order to assess the risk to the development from coal mining. This report presents the findings of the study.

2. Geological Desk Study

The geological desk study has been undertaken using the following sources of information.

- British Geological Survey (BGS) map sheet¹.
- British Geological Survey *Geology of Britain Viewer*².
- Coal Authority Consultants Coal Mining Report³.
- British Geological Survey *Borehole Records*⁴.

¹ Sources: British Geological Survey (NERC) Map Sheet 77; Huddersfield Solid and Drift Edition.

² Sources: British Geological Survey (NERC) Onshore GeolIndex [online resource from www.bgs.ac.uk]

³ Coal Authority Reference: 510034865001 dated 19th March 2025.

⁴ Sources: British Geological Survey (NERC) Borehole Records [online resource from <http://www.bgs.ac.uk/>]

2.1 British Geological Survey Maps and Viewer

The appropriate map sheet for the site and the geology viewer has been examined and the following table presents the indicated geology:

Table 1: Geological Data for the Site			
Strata Type	Strata Name ⁵	Previous Name ⁶	Description
Superficial Geology	None recorded	-	-
Solid Geology	Soft Bed Flags	Crawshaw Sandstone	The Soft Bed Flags are generally fine grained, thinly bedded and cross-bedded to flaggy, sandstone interbedded with mudstone.
	Pennine Lower Coal Measure Formation	Lower Coal Measures	Interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.

The geological map indicates that with the exception of the south-western part of the site, the majority of the development site is underlain by the Soft Bed Flags. The outcrop of the Soft Bed coal is indicated to bisect the south-western corner of the site, with undifferentiated strata of the Pennine Lower Measures Formation being present beneath the remainder of the development area.

There is one local coal seam that is shown to outcrop within the local area. This seam is summarised as follows:

Table 2: Summary of Coal Seams Within the Vicinity of the Site			
Seam Name	Seam Thickness ^{5*}	Outcrop Distance from Site ^{5*}	Anticipated Depth below Site
Soft Bed Coal (SB)	0m – 0.8m	Beneath SW corner of the site	At or near to surface.

*All distances are given as approximations only. It should be noted that coal seam thicknesses vary over relatively short distances.

On the basis of the generalised vertical section of the geological map, the Soft Bed Flags is located stratigraphically below the outcrop of the Soft Bed coal seam. The Soft Bed coal seam is shown to be the last coal seam within the Pennine Coal Measures Formation. The underlying geology comprises the Millstone Grit Group, which includes few coals throughout.

2.2 Coal Authority Mines Report

As part of this study a Coal Authority Consultants Coal Mining Report has been obtained. The report is presented as Appendix 2 and for the purposes of discussion has been summarised below:

⁵ Sources: British Geological Survey (NERC) Map Sheets 77; Huddersfield; Solid and Drift Edition, and Onshore GeoIndex [online resource from www.bgs.ac.uk]

⁶ Sources: British Geological Survey (NERC) Lexicon of Named Rock Units [online resource from www.bgs.ac.uk]

Table 3: Summary of the Consultant's Coal Mining Report

Mining Feature	Comments
Underground Coal Mining	No past mining recorded.
Probable Unrecorded Shallow Workings	Yes
Spine Roadways at Shallow Depth	No spine roadway recorded at shallow depth.
Mine Entries	Adit reference 414417-001 indicated beneath SW part of the site. Treatment details unknown.
Abandoned mine plans	Plans of abandoned mine workings below the site are suggested to be available by the Coal Authority.
Outcrops	Halifax Soft outcrop – On site.
Geological Faults	No faults, fissures or breaklines recorded.
Opencast Mines	None recorded within 500 metres of the enquiry boundary.
Coal Authority Managed Tips	None recorded within 500 metres of the enquiry boundary.
Site Investigations	None recorded within 50 metres of the enquiry boundary
Remediated Sites	None recorded within 50 metres of the enquiry boundary.
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 31st 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.
Mine Gas	None recorded within 500 metres of the enquiry boundary.
Mine Water Treatment Schemes	None recorded within 500 metres of the enquiry boundary.
Future underground mining	For further information please see section 3 of the Consultant's Coal Mining Report.
Coal mining licensing	
Court orders	
Section 46 notices	
Withdrawal of support notices	
Payments to owners of former copyhold land	

2.3 Geological Survey Borehole Records

The British Geological Survey (NERC) keeps borehole records from across Britain which are available for public viewing through their website⁷. As part of this study, the records in the area around the site have been reviewed in order to assist in establishing the geological conditions.

Unfortunately, in this instance, there are no borehole scans available within the vicinity of the site that will assist with this assessment. These are not anticipated to represent comparable ground conditions to those anticipated to be present below the site.

3. Risk Assessment

The risk to the stability of the proposed residential development has been evaluated from the data obtained and with reference to the following ratings and definitions:

- Low - The possibility of instability is unlikely therefore no further action is necessary.
- Moderate - The possibility of instability is likely and further investigation or remedial action may be required.
- High - The possibility of instability is highly likely and further investigation or remedial action will be necessary.

Table 4: Development Specific Risk Assessment

Item	Risk attributed to	Feature(s) Considered	Risk Rating
3.1	Shallow coal workings	Soft Bed Coal (SB)	Low
3.2	Coal workings at depth	The Coal Authority report indicates that no underground mining is recorded.	Negligible
3.3	Mine gas	Shallow coal workings	Moderate
3.4	Mine Adits	Adit number:414417-001	Moderate

3.1 Risks Posed by Shallow Coal Workings

On the basis of all of the information provided above, one seam of coal is anticipated to be present below the south-western part of the site. However, it is noted that an adit is shown within the same part of the site, which is oriented away from the outcrop and into the hillside. Given the conjectured position of the adit, it is considered that the mine entry is targeting the Soft Bed coal seam. As such, it is considered unlikely that any workings are present below the site itself as the orientation of the mine entry is away from the site. As such, a low risk has been deemed with respect to the risks to the site from shallow coal workings.

3.2 Risks Posed by Coal Workings at Depth

In regard to deeper mining which could affect the site, the property is not within a surface area that could be affected by past underground mining. Indeed, the Soft Bed coal seam is the final seam within the Pennine Coal Measures Formation and the underlying Millstone Grit Group includes few coals throughout.

3.3 Risks Posed by Mine Gas

This assessment has concluded that there a limited potential for shallow mine workings to be present beneath the site. However, the Consultants Mining Report does indicate an adit (reference: 414417-001) to be present below the south-western part of the site. As such, it is considered that this feature represents a potential source of ground gas. As such, a moderate risk rating has been assigned, and a detailed ground gas risk assessment should be commissioned (usually undertaken as part of a Phase 1 Desk Study). Such assessments may stipulate that a regime of gas monitoring is undertaken to quantify the risks posed by mine gas. Alternatively, in a scenario where gas monitoring has not been considered, suitable gas protection measures may be required. It should

be appreciated that such measures could be designed in accordance with BS8485: 2015 +A1: 2019: *Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings*. It should be noted that in any event, the above will need to be agreed with the local authority prior to construction, as they are the final arbiters on these matters.

3.4 Risks Posed by Mine Adits

The Consultants Mining Report makes reference to one adit (reference: 414417-001) present below the south-western part of the site. In the context of the guidance given by CIRIA SP32 – *Construction over abandoned mine workings* it should be appreciated that the minimum distance for siting structures from open or poorly filled adits depends primarily on the nature and thickness of the surface deposits. This would presumably be on the basis that a significant ground collapse within intact rock would be improbable, therefore the crater associated with a collapsed mine entry would be located within the soils above the rock.

It should be noted that the location of the adit given by the Coal Authority has been given a departure of 10m radius from the given coordinates. As such, whilst the general topography of the area would suggest the adit is most likely set into the hillside, there remains the possibility that the adit is present below the new building footprint. Therefore, a moderate risk rating has been assigned to the site with respect to mine entries.

4. Conclusions

In light of the potential risks of instability at the site from the presence of the adit (reference: 414417-001), it cannot be recommended that development takes place without further investigation to conclusively determine the presence and condition of this mine entry.

In this case, it is considered that a grid of dynamic probes could be undertaken across the site in order to establish the depth to bedrock across the development. Should the adit be present below the site, it is anticipated that probes could extend to greater depths within this area. If the probes suggest the presence of an adit below the development area, the dynamic probing should be followed up by undertaking trial pitting in order to physically expose the adit, and assess the condition of the mine entry treatment (if any).

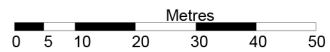
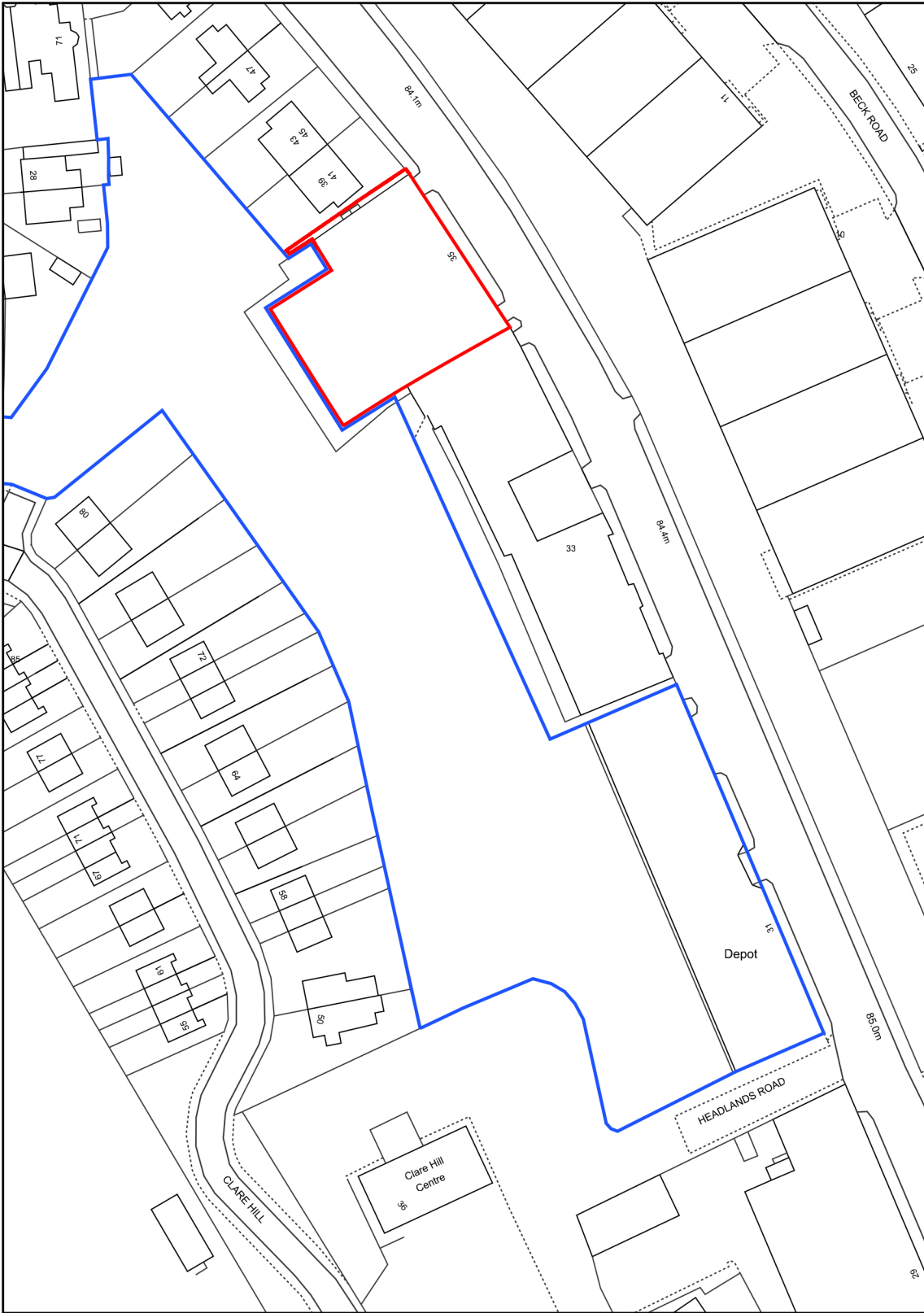
In any event, it is considered that approval should be sought with the Local Authority as to the efficacy of this approach.

It is of note that Rogers Geotechnical Services would be happy to assist in any further intrusive investigation that may be required.



Appendix 1

Site Plan



Map Information

Scale: 1: 1250
Date: 06/06/2024
Reference: 2308
Order No: 4599500





Appendix 2

Consultants Mining Report



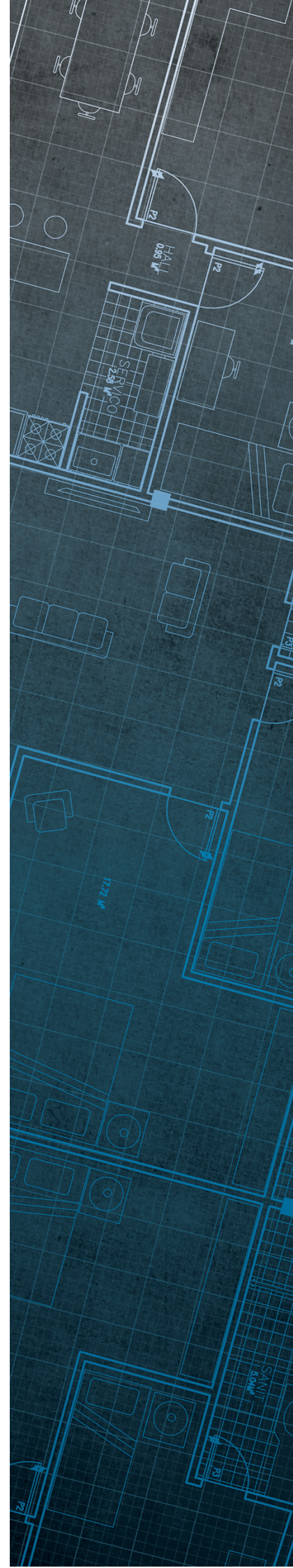
The Coal
Authority

Consultants Coal Mining Report

35 St John'S Road
Huddersfield
Kirklees
HD1 5DX

Date of enquiry: 19 March 2025
Date enquiry received: 19 March 2025
Issue date: 19 March 2025

Our reference: 51003486365001
Your reference: C/5076/25/E/7735 - PO-
3255



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

ROGERS GEOTECHNICAL SERVICES LTD

Enquiry address

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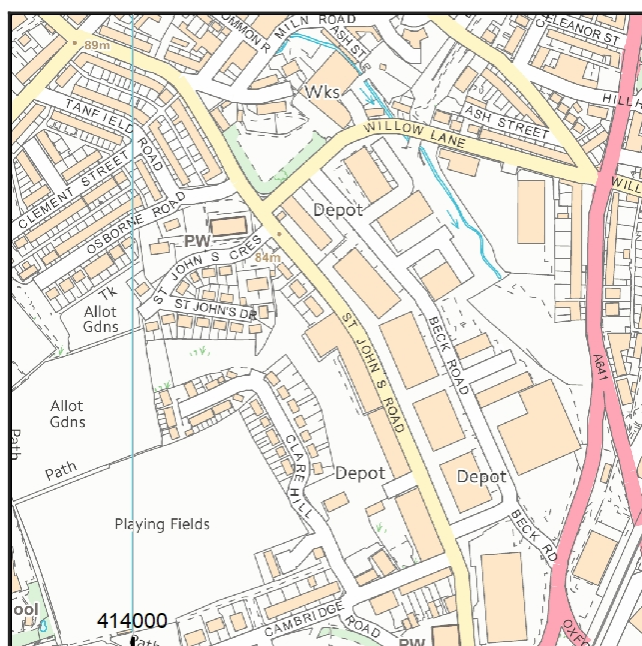
www.groundstability.com

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 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	414417-001	414201 417597	Treatment details unknown.*	Coal	

*For your information, before the coal industry was nationalised in 1947, there was no requirement for a mine operator to record mine entry treatment details when a mine was abandoned. Therefore, it is not unusual for us to have no treatment details for many of the 176,000 recorded mine entries on our database. Despite this lack of information, please be assured that the fact we have no treatment recorded does not necessarily mean that the mine entry was left untreated when abandoned.

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

18393 (NR 400045471)		
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Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
HALIFAX SOFT	Coal	Yes	Within	N/A	143

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

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.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

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.

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.

Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

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.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. 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. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

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 50 metres 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.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices




Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

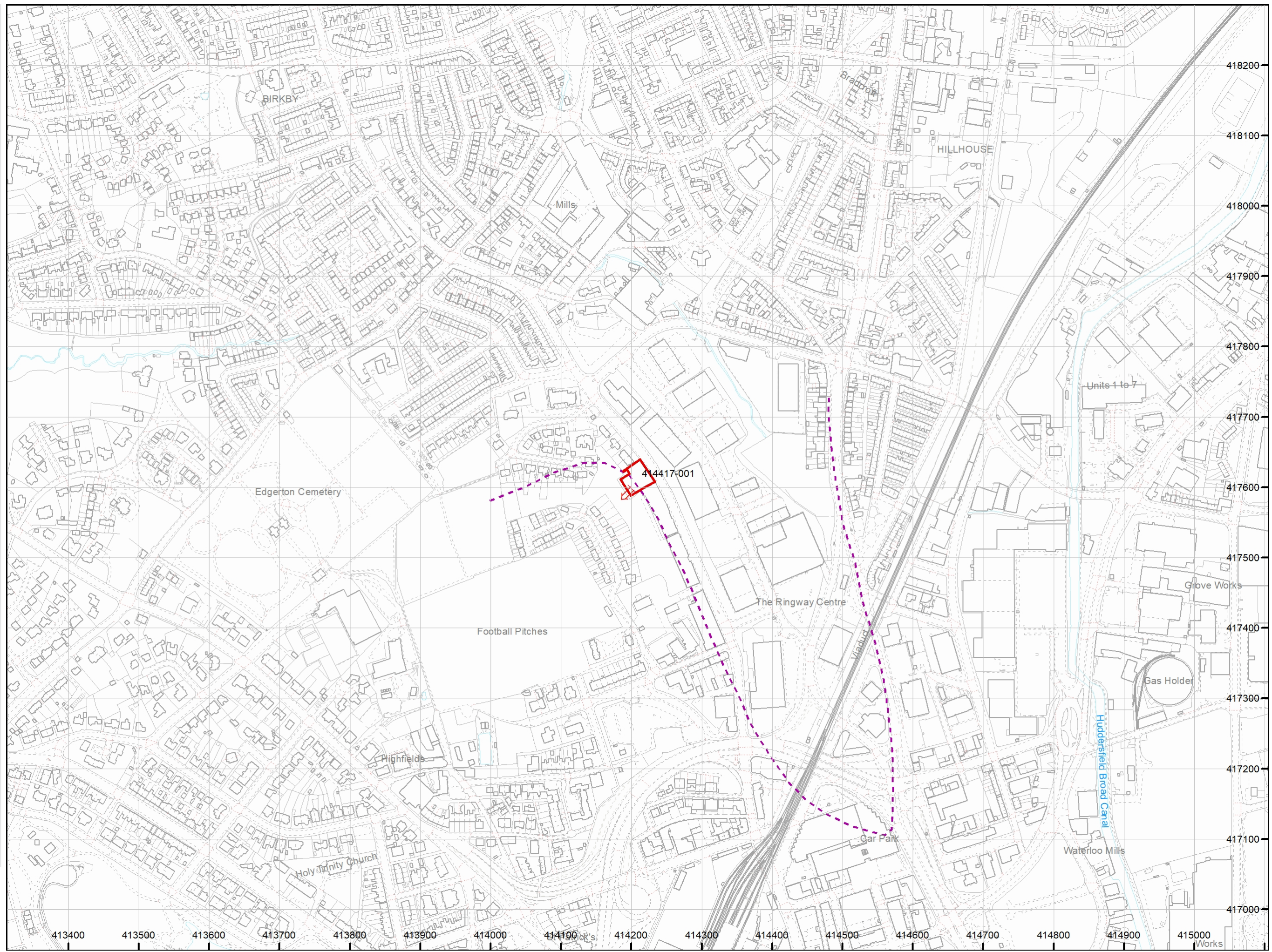
Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

- Approximate position of the enquiry boundary shown 
- Disused adit 
- Outcrop (Conjectured) 



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