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Our Ref: GRM/P9816/CMRA.1

Date: 28th September 2021

Mr David Raybould
David Raybould & Associates Ltd.
23a West Street
Swadlincote
South Derbyshire
DE11 9DG

Dear David,

RE: Proposed Residential Development at 8 Mill Close, Midway, Swadlincote, DE11 7NU.

We have as requested carried out a Coal Mining Risk Assessment in accordance with guidance provided by the Coal Authority (CA) and as required by the Local Authority as part of the planning process.

The result of our assessment is detailed below:

1.0 Introduction

We have been informed that the Client proposes to develop the site with a single residential dwelling with associated infrastructure. The proposed end use includes gardens and soft landscaping.

Recommendations will be made as to how the risks associated with coal mining can be mitigated.

A proposed site plan is included in Appendix A. The Coal Authority Consultants mining report included in Appendix B.

2.0 Sources of Information

The following sources of information have been used:-

- CA Consultants Coal Mining Report
- BGS Geological Mapping
- BGS Memoirs
- BGS Borehole Records
- Historic OS Mapping
- Coal Authority Interactive Online Mapping



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3.0 Identification and assessment of site specific risks

The Coal Authority (CA) Consultant's report confirms that the site is in the likely zone of influence from recorded workings beneath or adjacent to the property in seven seams of coal at depths of between 130m and 246m begl, last mined in 1916. Given the depth of the recorded workings, the risk posed to the ground surface from recorded workings is assessed as **negligible**.

The CA states that the site lies within an area where they believe there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep). Accordingly the risk posed to the ground surface from any unrecorded workings in shallow coal seams is assessed as **high**.

The CA confirms that the site lies within 500m of an area from which coal has been removed in the past by opencast (surface) methods, or within 500m of either the licence area, site boundary, excavation area (high wall) or coaling area. Therefore, the risk from current, future or past opencast workings is assessed as **high**.

The CA confirms that there are no known coal mining entries within, or within 100 metres of the boundary of the site. Therefore the risk to surface stability from recorded mine entries is assessed as **negligible**.

There may exist in the local area mine entries of which the Coal Authority have no knowledge and if shallow unrecorded workings are present beneath the site, the risk of unrecorded mine entries should be increased to **high**.

The CA states that there are three records of mine gas emissions within 500m of the boundary of the site, that required actions by the CA. The mining report indicates that the Coal Authority have remediated the effects of the emissions and therefore it is reasonable to conclude that the risk to the proposed development from mine gas emissions from recorded workings is **negligible**. There remains a potential risk from unrecorded workings and mine entries.

Where coal measures strata lies close to the ground surface foundations could potentially penetrate or encounter coal seams within their excavation. There is therefore a potential for spontaneous combustion where coal measures strata are present. The risk from spontaneous combustion from near surface coal seams is generally assessed as **low** but some form of precautionary mitigation might be required.

4.0 Further Assessment Including BGS and Coal Authority Information

The information sources noted in Section 2.0 suggest the following:

- Historically the site is recorded as open fields to the east of Eureka Lodge until the map of 1960. From 1960 the site is recorded as rear gardens for 8 and 9 Mill Close, Swadlincote.
- The site is not recorded to be underlain by superficial deposits. The solid geology is recorded as the Pennine Middle Coal Measures Formation. Local information includes a ground investigation completed on the former Eureka Lodge recorded 2-5m of Glacial Till overlying light and dark grey mudstone.
- The geological map and CA Report indicates a general dip direction towards the south east and south west, however localised faulting in the area may have altered the dip angles.

- The Upper Kilburn coal seam is recorded on the BGS map to outcrop approximately 30m west of the site.
- The BGS map records a mine entry immediately west of the site boundary.

The Upper Kilburn coal seam, recorded to be 30m west of the site is recorded on the BGS map to be up to 1.37m thick. The Upper Cannel coal (0.9m thick) is recorded to outcrop 120m north west of the site and is recorded on the BGS column to be c.32m below the Upper Kilburn coal, and therefore is not considered likely to be a risk to the site. The BGS column suggests that the Block (1.2m to 1.6m thick) and the Yard (1.37m thick) coal seams will be approximately 20m below the Upper Kilburn coal seam, between the Upper Kilburn and Upper Cannel coals, and should therefore also have sufficient cover to not be a risk to the site if worked.

The former Eureka Lodge investigation, reported by Tier Environmental Ltd in July 2017 (report reference TE1005GIR1) and listed on the local Planning Portal, completed five rotary boreholes to maximum depths of between of 20m and 25m below ground level. The investigation recorded solid ground throughout the boreholes and did not encounter any workings, or ground conditions considered indicative of collapsed workings. The fourth borehole, closest to the site, recorded rock head at 3m depth and a coal seam at 15.5m depth. The seam was recorded as intact and 0.5m thick.

Given the lack of workings within the seams immediately up dip to the west of the site, the location of rockhead and seam thickness, it is considered suitable to reduce the risk from unrecorded mine workings from high to **very low**.

According to historic reports completed for the development of the Eureka Lodge, the mine shaft recorded on the BGS maps was researched and found to be an underground shaft in excess of 100m below ground level. It was consequently removed from the Coal Authority records and is not considered to be a risk to the ground surface and proposed development. As the coal seams encountered adjacent to the site have been shown to not have been worked, and given the lack of unrecorded shallow mine workings on the adjacent up dip site, it is considered unlikely that there will be unrecorded mine entries on site. Therefore the risk from unrecorded mine entries is considered to be **very low**.

The risk from mine gas is assessed as **very low**.

The Coal Authority report indicates that an opencast mine is present within 500m of the site. The associated map records the mine to be approximately 380m south east of the site boundary, currently named used as 'Swadlincote Woodlands and Park'. Given that the opencast is historic and the intervening land uses include approximately 250m of residential housing, the risk to the proposed development is considered to be **negligible**.

There are not likely to be any coal seams present at or close to proposed foundation depths, that could present a risk to structures due to the potential for combustion within the seam creating sufficient volume change to affect foundations. Therefore there is not considered to be a risk from spontaneous combustion. However, the following advice should be followed in case any shallow seams are encountered at a later date:

- A cover of mudstone / clay of 0.5m thickness be maintained between the shallow coals and the base of the foundations. A thickness of at least 0.5m of clay should also be maintained above coals out cropping in garden areas.

- Poor quality or thin coals < 0.5m in thickness are not considered to be a risk.
- Foundations that are likely to have less than 0.5m of cover will have to be deepened through the coal.

5.0 Conclusions

The risks amended in line with section 4.0 above can be summarised as follows:

Recorded Workings – **Negligible.**

Unrecorded Workings – **Very Low.**

Opencast Workings – **Negligible.**

Recorded Mine Entries – **Negligible.**

Unrecorded Mine Entries – **Very low.**

Mine gas emissions – **Very low.**

Spontaneous combustion – **Negligible.**

We trust that the information provided is sufficient for your current requirements. If you require any additional information or clarification of the contents of this letter then do not hesitate to contact us.

Yours faithfully, on behalf of GRM Development Solutions Ltd,

Prepared by

Russell Hurcombe MGeoSci (Hons) FGS
Senior Engineering Geologist

Approved by

Geoff Becket BSc CGeol
Director

6.0 Appendices

Proposed Development Layout
Coal Authority Consultants Mining Report

Appendix A
Appendix B

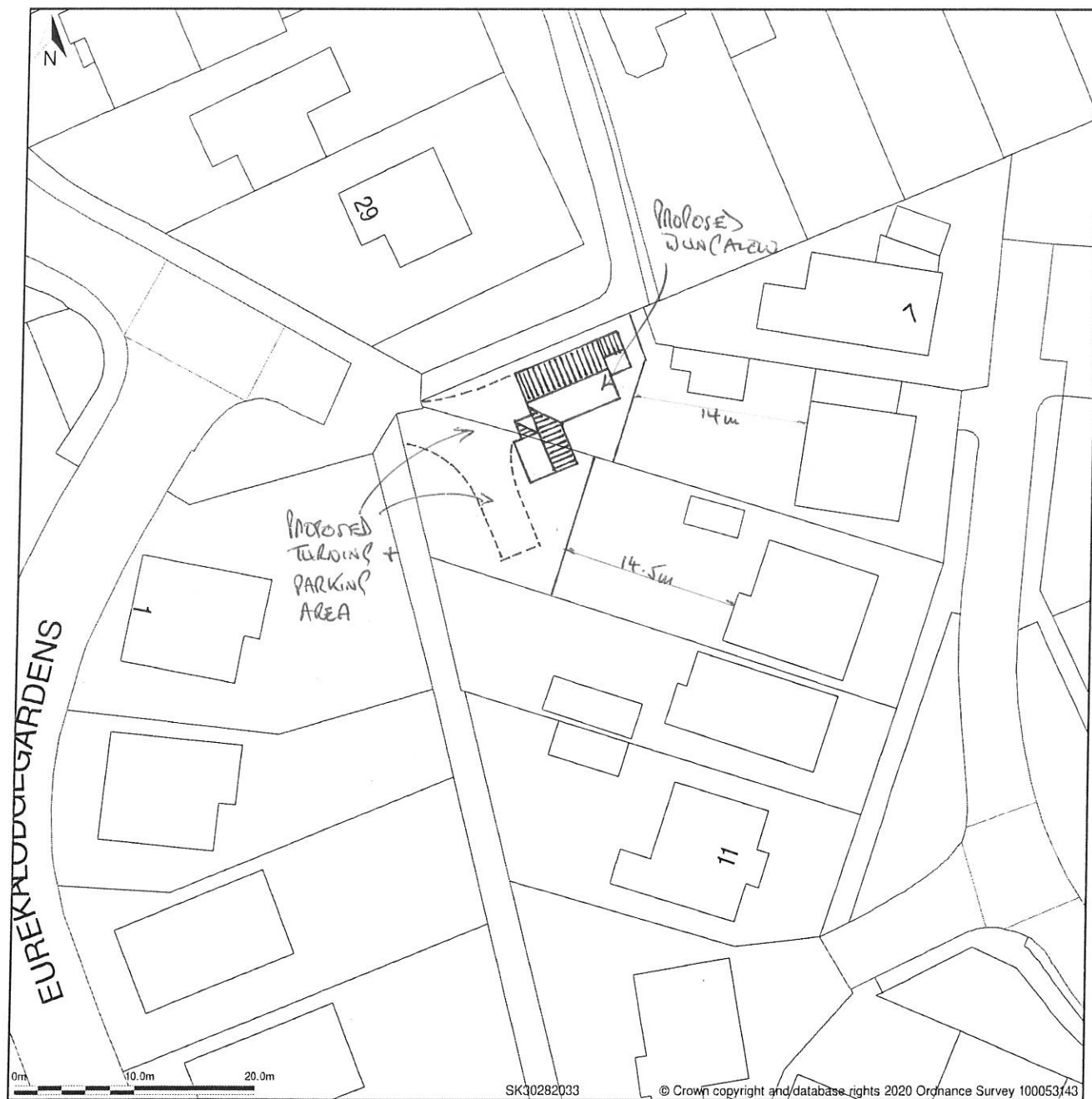


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8, Mill Close, Midway, Swadlincote, Derbyshire, DE11 7NU



Block Plan shows area bounded by: 430238.32, 320286.09 430328.32, 320376.09 (at a scale of 1:500), OSGridRef: SK30282033. The representation of a road, track or path is no evidence of a right of way. The representation of features as lines is no evidence of a property boundary.

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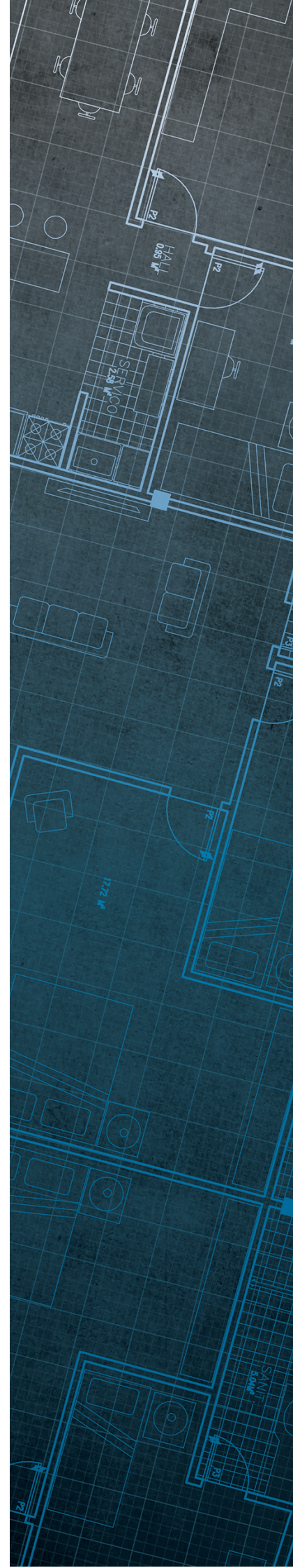


The Coal
Authority

Consultants Coal Mining Report

8 Mill Close
Midway
Swadlincote
Derbyshire
DE11 7NU

Date of enquiry:	8 September 2021
Date enquiry received:	8 September 2021
Issue date:	8 September 2021
Our reference:	51002654054001
Your reference:	P9816



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

GRM DEVELOPMENT SOLUTIONS LIMITED

Enquiry address

8 Mill Close
Midway
Swadlincote
Derbyshire
DE11 7NU

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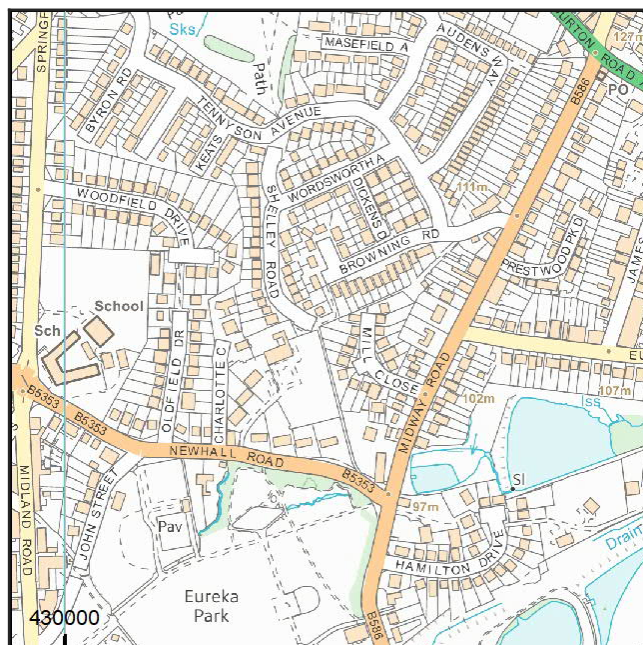
www.groundstability.com

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 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
GRANVILLE	LITTLE	Coal	4UI5	130	West	6.3	South-East	150	1852
GRANVILLE	LITTLE KILBURN	Coal	4U14	131	North-West	6.3	South-East	85	1916
GRANVILLE	MAIN COAL	Coal	4UIB	154	South-West	6.3	South-West	200	1844
CARTWRIGHT	WOODFIELD	Coal	4UIF	204	West	6.3	South-West	137	1876
CARTWRIGHT	STOCKINGS	Coal	4UIG	210	West	6.3	South-West	137	1903
CARTWRIGHT	EUREKA	Coal	4UIH	229	South-West	6.3	South-West	107	1895
CARTWRIGHT	STANHOPE	Coal	4UII	246	West	6.3	South-West	107	1880

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

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

11973	EM60	5818
3586A	3640	3586
EM753	11977	241

Our records show we have more plans than those shown above which could affect the enquiry boundary.

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
UPPER KILBURN	Coal	Yes	29.5	West	359

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

Please refer to the "Summary of findings" map (on separate sheet) for details of any opencast areas 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

Distance to site investigation (m)	Direction
3.7	West

See Section 4 for further information.

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

Distance to gas incident/remediation (m)	Direction
417.0	South-West
393.9	South-West
453.4	South-West

See Section 4 for further information.

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

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

Mine gas remedial works

The site is within an area of previous interest. It is close to where the Coal Authority has investigated and subsequently remediated the effects of mine or ground gas emissions following specific reported hazards.

The site requires further investigation and may influence your risk assessment. We recommend that you order the **Coal Authority Mine Gas Emission Report**, which will include more information about the hazard.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

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.

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.

