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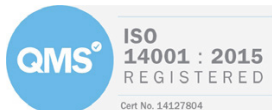


COAL MINING RISK ASSESSMENT REPORT

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Rogers Geotechnical Services Ltd
Offices 1 & 2 Barncliffe Business Park, Near Bank, Shelley, Huddersfield, HD8 8LU
☎ 01484 604354 Company No. 5130864

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Report on a Coal Mining Risk Assessment

Location:	Land at Leak Hall Road Denby Dale, Huddersfield, West Yorkshire, HD8 8RY	
For:	Castlehill Damage Restoration Ltd	
Report No.	C5655/25/E/8754	Report date: November 2025

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

Steven Hale BSc FGS
Geo-environmental Engineer

Scott Alexander BSc FGS
Senior 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 map sheet¹.
- British Geological Survey *GeoIndex Onshore Viewer*².
- Coal Authority Consultants Coal Mining Report³.
- British Geological Survey *Borehole Records*⁴.

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:

¹ Sources: British Geological Survey (NERC) Map Sheet 86; Glossop Solid and Drift Editions

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

³ Coal Authority Reference: 51003539525001 dated 21st November 2025.

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

Table 1: Geological Data for the Site

Strata Type	Strata Name ⁵	Parent Unit ⁶	Description ³
Superficial Geology	-	-	None recorded.
Solid Geology	Penistone Flags	Pennine Lower Coal Measures Formation.	Sandstone.

On the geological map, there are multiple dip and strike indicators present within the local area that suggest there is much variation in the rock. It should be appreciated that in general these markers suggest the regional geology dips towards the southwest and southeast at angles of between 3° and 15°.

There are two local coal seams that are shown to outcrop within the local area. These seams are 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
Cumberworth Thin Coal (CT)	0 – 0.4m	Indicated to outcrop on the western side of the site.	At or near to the surface.
Whinmoor (Cumberworth Thick) Coal (W)	1.3m	15m	Not anticipated to underlie the site.

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

In light of the above and taking into account the regional structural geology and the topography of the area, the Cumberworth Thin Coal seam is anticipated to be present at near surface towards the western edge of the site. It should be appreciated that the Whinmoor Coal seam is present stratigraphically above the Cumberworth Thin, as such, it is not anticipated to underlie the site.

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:

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

Has the report highlighted evidence or potential of:			
Ref	Mining Feature	Yes/No	Comments
1	Underground Coal Mining	No	None recorded.
2	Probable Unrecorded Shallow Workings	Yes	No further information given.

⁵ Sources: British Geological Survey (NERC) Map Sheets 86; Glossop; Solid and Drift Edition, and GeoIndex Onshore Viewer [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]

3	Spine Roadways at Shallow Depth	No	No spine roadway recorded at shallow depth.
4	Mine Entries	Yes	Eight mine entries are indicated to be present in close proximity to the, northwest, west and southwest of the site. All except one of these are indicated to be adits travelling in between the directions of west and north. The mine shaft and four of the adits have been investigated, located and found to be treated. No details are given for the remaining adits.
5	Abandoned mine plans	Yes	Plans of abandoned mine workings below the site are suggested to be available by the Coal Authority.
6	Outcrops	Yes	The Low Whinmoor coal seam (Cumberworth Thin) is indicated to outcrop on the western part of the site.
7	Geological Faults	No	No faults, fissures or breaklines recorded.
8	Opencast Mines	No	None recorded within 500 metres of the enquiry boundary.
9	Coal Authority Managed Tips	No	None recorded within 500 metres of the enquiry boundary.
10	Site Investigations	Yes	Three investigations are indicated to have been undertaken between 0.7m and 33.3m to the northwest of the site.
11	Remediated Sites	No	None recorded within 50 metres of the enquiry boundary.
12	Coal Mining Subsidence	No	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.
13	Mine Gas	No	None recorded within 500 metres of the enquiry boundary.
14	Mine Water Treatment Schemes	No	None recorded within 500 metres of the enquiry boundary.
15	Future underground mining	No	For further information please see section 3 of the Consultant's Coal Mining Report (ref 51003539525001).
16	Coal mining licensing	No	
17	Court orders	No	
18	Section 46 notices	No	
19	Withdrawal of support notices	No	
20	Payments to owners of former copyhold land	No	

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. Whilst there are borehole scans present within 500m to the northeast of the site, these boreholes are anticipated to be situated on outcrops stratigraphically 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	Coal Seam(s) Considered	Risk Rating
3.1	Shallow coal workings	Cumberworth Thin (CT)	Moderate
3.2	Coal workings at depth	The Coal Authority report indicates that the property is not within a surface area that could be affected by past underground mining.	Low
3.3	Mine gas	Shallow coal workings	Moderate
3.4	Mine shafts	Eight shafts recorded within search radius of site.	Low

3.1 Risks Posed by Shallow Coal Workings

On the basis of all of the information provided above, one coal seam is anticipated to be present at near surface at the site. Whilst this seam may be of limited thickness, the possibility of this seam being worked below the site cannot be ruled out. Historic coal mining activity is evident in the nearby area, and therefore it is considered that if coal was known to be close to ground level it could have been removed illicitly via shallow mining methods with relative ease.

It may be noted that guidance available from both the NHBC and the CIRIA publication, SP32 - *construction over abandoned mine workings*, suggests that competent overburden thickness above a coal seam should be greater than 10 times the thickness of a seam plus seam thickness in order that the collapse of workings would pose a low risk to surface structures.

On this basis, assuming a maximum thickness of the coal seam, the table below suggests the thickness of competent overburden required to mitigate instability at the surface.

Table 5: Required Thickness of Competent Overburden

Seam Name	Seam thickness	Anticipated depth below site	Required thickness of competent overburden.
Cumberworth Thin Coal (CT)	0 – 0.4m	At or near to the surface	4.40m

Based on the above information, it is considered that there may not be a sufficient thickness of competent overburden above the shallowest seam in order to prevent the risk of instability posed by the presence of any illicit workings. Therefore, a moderate risk rating has been placed on these seams, and further investigation is recommended to prove or disprove the presence of illicit mining activity.

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.

3.3 Risks Posed by Mine Gas

This assessment has identified that there is potential for shallow mine workings to be present beneath the proposed development. Whilst the Consultants Coal Mining Report has not reported any incidents of mine gas within the vicinity of the development, shallow mining activity represents a credible source of ground gas. As such, a moderate risk rating has been assigned, and further assessment may be required.

Should evidence of workings be proven via further intrusive works, it is strongly recommended that a detailed gas risk assessment is undertaken in accordance with relevant guidance. The risk assessment should take into consideration the current site conditions, and should be subject to reassessment after the formulation and/or completion of any remedial measures and proposed foundation solution. These documents should be prepared by a suitably experienced and qualified specialist.

3.4 Risks Posed by Mine Shafts

The Consultants Mining Report refers to one shaft and multiple adits within close proximity to 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 shafts 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 collapse shaft would be located within the soils above the rock.

Assuming that the mine shaft is approximately 55m northwest and the adits are all noted to face away from the site, it is reasoned that there is sufficient standoff distance between the development and the mine entries, such that the risks posed by collapse can be considered low.

4. Conclusions

In light of the potential risks of instability at the site from the working of shallow coal, it cannot be recommended that development takes place without further investigation to conclusively determine the presence of such workings. This work should include physical drilling methods to explore the ground conditions.

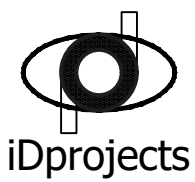
General practice is to undertake rotary openhole boreholes at three locations across the site to mitigate against the potential for drilling through intact columns associated with pillar and stall workings. Furthermore, it is normal to investigate the ground to 30m below ground level; any workings below this depth are unlikely to result in significant instability. However, in this case, the risk of instability is due to near surface workings, therefore, drilling to these depths may not be

necessary and the objective should be to ensure that the shallow seams are un-worked or have sufficient competent cover. It may therefore be possible, in the first instance, to undertake one borehole to 10m below the top of the rockhead, with the remaining boreholes proving the depth and continuity of the coal seam(s). It is considered that the boreholes should be targeted to the western portion of the site where the outcrop of the coal seam is shown to cross the site. 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



SITE LOCATION PLAN

PROPOSED HOUSING DEVELOPMENT
LEAK HALL ROAD, DENBY DALE, HD8 8GJ
DWG No. 694-A10 rev--
SCALE 1:1000@A4 NOVEMBER 2025

REV DATE ITEM

AUTH



Appendix 2

Coal Authority Report



The Coal
Authority

Consultants Coal Mining Report

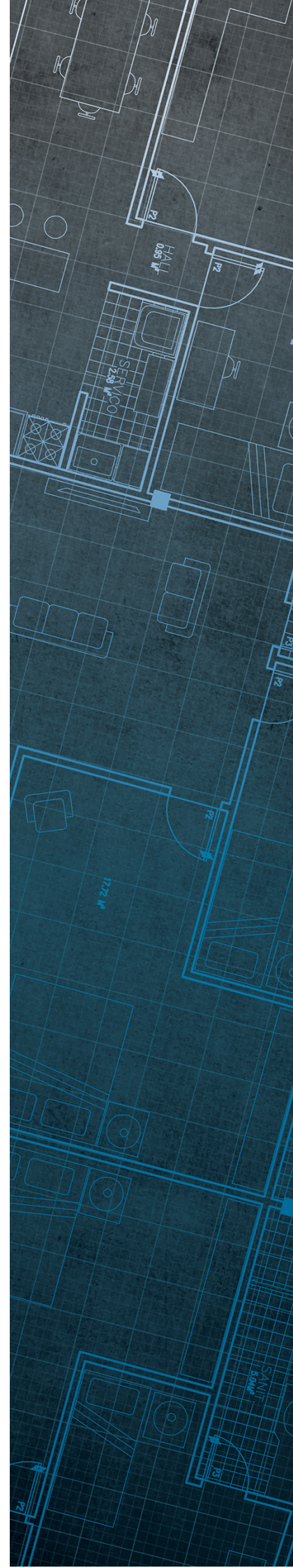
Leak Hall Road
Denby Dale
Huddersfield
Kirklees
HD8 8RY

Date of enquiry:
Date enquiry received:
Issue date:

21 November 2025
21 November 2025
21 November 2025

Our reference:
Your reference:

51003539525001
C/5655/25/E/8754 - PO-
3625



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

Leak Hall Road
Denby Dale
Huddersfield
Kirklees
HD8 8RY

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

reports@miningremediation.gov.uk



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
Shaft	422408-016	422945 408710	Located by trenching in 2018 and found to be filled.	Coal	
Adit	422408-024	422974 408684	Searched for by trenching and a series of probe holes in 2018 but not located. It is thought the feature may have been wholly or partially removed during extensive groundworks to create development platforms.	Coal	
Adit	422408-025	422973 408668	Partially located during a search by trenching in 2018 and thought to have been encountered during drill and grout ground treatment works in 2020.	Coal	
Adit	422408-026	422979 408652	A partial search by trenching in 2018 for development to the northwest did not locate the adit.	Coal	
Adit	422408-027	422974 408655	Located by trenching in 2018.	Coal	
Adit	422408-028	422960 408635	Treatment details unknown.*	Coal	
Adit	422408-029	422903 408626	Treatment details unknown.*	Coal	
Adit	422408-030	422922 408607	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 entries were 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:

SY244	OM12632	PO0
SY253	9730	SY225
SY250		

For assistance in identifying the specific abandoned mine plans relevant to your requirements, **please contact us at InformationManagers@MiningRemediation.gov.uk**.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
LOW WHINMOOR	Coal	Yes	Within	N/A	11
LOW WHINMOOR	Coal	Yes	Within	N/A	355

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
0.7	North-West
33.3	North-West
1.9	North-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

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

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

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.

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.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please email us at reports@miningremediation.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 **email us at reports@miningremediation.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.

345 762 6848 (UK)
44 (0)1623 637 000 (International)
reports@miningremediation.gov.uk