



SHADBOLT ENVIRONMENTAL

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Mr David Jones
Quarry House Farm
Penistone Road
High Flatts
Denby Dale
HD8 8XY

3rd August 2026

3270 Wind Turbine Quarry House Farm

Coal Mining Risk Assessment

Dear David,

Further to recent communications we have carried out a desk based Preliminary Coal Mining Risk Assessment on land adjacent to Quarry House Farm, Penistone Lane, Low Common, West Yorkshire, HD8 8XY, approximate grid reference 421894:406914, in support of a planning application for proposed wind turbine improvement. This report has been prepared in accordance with the appointment. Report conditions and the terms and conditions of the agreement. The report conditions are presented in **Appendix A**.

The proposed development comprises the redevelopment of the existing 50kW wind turbine on site to a 225kW wind turbine at the same location on Low Common.

The site is located approximately 250m east of the Quarry House Farm complex adjacent to the A629 Penistone Lane, approximately 2km southwest of Denby Dale, West Yorkshire. The area surrounding the site currently comprises open agricultural land dipping gently to the southeast.

On review of published BGS geological mapping (sheet 86, Glossop solid and Drift) the site is underlain by the Penistone Flags member of the Lower Pennine Coal Measures Formation or undifferentiated Mudstones, Siltstones and Sandstones with no superficial deposits indicated. In the following assessment we have assumed competent bedrock to be present at a depth between 1.5m bgl and 2.50m bgl.

The solid geology underlying the site comprises interbedded mudstone, siltstone, sandstone and thin coal seams (Cumberworth Thin, Lower Penistone and Crow). The BGS mapping indicates the site is located on top of strata dipping 4° to east northeast.

Continued

A Coal Authority Consultants Report (51003585587001 dated 29th July 2026) for the site was obtained by Shadbolt Environmental in preparation of this report.

Risk Assessment

Table 1 presents a preliminary risk assessment based on published data including the Coal Authority Consultants Mining Report obtained for the site, BGS mapping and the Coal Authority's online map viewing system.

It is noted that the Coal Authority has recently rebranded as the Mining Remediation Authority but their reporting does not currently reflect this change.

Coal Mining Issue	Risk Factor?	Risk Assessment
Underground Coal Mining (recorded at shallow depths)	No	No past underground mining recorded within the site boundary.
Probable unrecorded shallow workings	Yes	The Coal Authority considers the site to be within an area where unrecorded shallow mine workings may be present. Shallow seams include the Cumberworth Thin the Lower Penistone and the Crow seams. The thickness of the seams are not recorded. The Risk to the development at the site from unrecorded shallow mine workings is considered to be LOW.
Recorded Workings	No	There are no recorded workings within the site boundary
Spine Roadways at Shallow Depth	No	The Coal Authority have no records of any Spine Roadways at shallow depth within the site boundary. The risk to developments at the site from recorded roadways is LOW.

Mine entries	No	Coal Authority Mining Report and geological plans states there no mine entries within 100m of the site boundary.
Record of past mine gas emissions	No	There are no records of past mine gas emissions within 500m of the site. The risk to developments at the site from mine gas emissions is considered to be LOW.
Recorded coal mining subsidence	No	The Coal Authority has not received damage notice or any claim within 50m of the site boundary since October 1994. There is no current Stop Notice delaying the start of remedial works or repairs to a property. The CA is not aware of any request having been made to carry out preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.
Geological faults, fissures and breaklines	No	There are no faults, fissures or breaklines recorded in the vicinity of the site.
Opencast mines	No	The Coal Authority indicates that there are no recorded opencast mines within 500m of the site.

Table 1: Potential Risk Factors arising from Coal Mining (Preliminary Risk Assessment).

The Coal Authority Consultants Coal Mining Report is presented in **Appendix B**.

Known Workings

There are no known workings below the site.

Unrecorded Workings

A search of the British Geological Survey website indicated 1 No. historical boreholes. The historical borehole is not reported in the Coal Authority Coal Mining Report. SE20NW11 (drilled September 1974), located approximately 260m to the southwest of the site, indicated an unnamed coal seam at 24.50m bgl with a recorded thickness of 0.20m. The High Flatts borehole (SE20NW5) drilled in January 1947 is located 1km west of the site and intersects 2 No. seams that are present beneath the site.

The historical boreholes are presented in Appendix C.

Table 2 below presents a summary of recorded coal seams underlying the site that are shown on the BGS mapping. No details of seams or suspected workings are presented in the Coal Authority Coal Mining Report.

Coal Seam	Geological Formation	Notes
Lower Penistone Coal	Lower Coal Measures	Recorded to be 0.0m to 0.3m thick, outcrops in the vicinity of the turbine location.
Better Bed Band Coal or Crow Coal (Borehole SE20NW11)	Lower Coal Measures	Recorded to be thin, outcrops to the west and dips below the site but displaced by faulting. Recorded 0.08m thick with 0.08m fireclay below in High Flatts borehole, 1 km west of the site. Indicated by BGS mapping in the vicinity of Cat Hill approx. 3.5km ESE of the site to lie approximately 30m below the Lower Penistone Coal / Ground Level.
Better Bed Coal	Lower Coal Measures	Recorded to be 0.0m to 0.3m thick, outcrops to west and south west of site and dips below site but displaced by faulting. Recorded 0.30m thick and 16m (46m BGL) below the Better Bed Band Coal in High Flatts borehole, 1 km west of the site.

Table 2: Anticipated Coal Seams Below the Site

Mine Entries

No shafts or adits are recorded within 100m of the site boundary.

There are no recorded opencast mines recorded within 500m of the site boundary.

However, there are a number of quarries in the area for the extraction of rock from the Penistone Flags formation which may also have encountered coal seams.

The Coal Authority would generally regard seams of greater than 0.30m to be workable, however, the seams recorded by the BGS and within boreholes show the shallow seams at the site to be of marginal thickness at best and are not anticipated to be extensively worked.

From Table 2 above the Lower Penistone Coal (LPC) would be expected to be close to the surface in the vicinity of the turbine, but if mudstone is encountered at the turbine location then this would be stratigraphically below the LPC. The Better Bed Band Coal is recorded as thin (<0.10m) along with a thin fireclay noted in one historic borehole. Taking this as a combined 0.20m thickness then approximately 150x the seam thickness of competent rock may be anticipated and negligible risk presented to the proposed turbine. The Better Bed Coal has a recorded thickness of 0.30m but at a depth in the order of 46m bgl this would give competent rock cover also in the order of 150x the seam thickness.

Following the review of the published and freely available data, the Coal Authority Report and the above Preliminary Coal Mining Risk Assessment, the risk arising from unrecorded underground mine workings is considered to be **VERY LOW**.

It is not envisaged that any intrusive works will be required in order to prove the depths to the seams at depth, however, should coal be encountered within the foundation pad excavation then further consultation would be required.

We trust this is sufficient for your needs at present, however, should you require any further information please do not hesitate to contact us.

Kind regards,

Redacted

Iain McLean
Associate Director

Redacted

Appendix A - Report Condition

Appendix B - Coal Authority: Consultants Coal Mining Report

Appendix C – Historical Borehole Records

APPENDIX A

REPORT CONDITIONS

REPORT CONDITIONS

GEO-ENVIRONMENTAL GROUND INVESTIGATION

*This report is produced for the benefit of **Mr David Jones** in accordance with the terms of the appointment.*

This report has been prepared in accordance with the terms and conditions of the appointment and relates to the condition of the site at the time of the report. No warranty is provided as to the possibility of future changes in the condition of the site.

Whilst the information assessment detailed within this report reflects our view of the mining risk, Shadbolt Environmental takes no responsibility for unreported conditions below the site and are unable to give categoric assurances that they will be accepted by authorities or funds without question.

This report is prepared and written for the purposed uses stated in the report and should not be used in a different context without reference to Shadbolt Environmental. In time, improved practices or amended legislation may necessitate a re-assessment.

The report is limited to the Coal Mining Risk Assessment detailed within the report and is necessarily restricted.

APPENDIX B

COAL AUTHORITY: CONSULTANTS COAL MINING REPORT



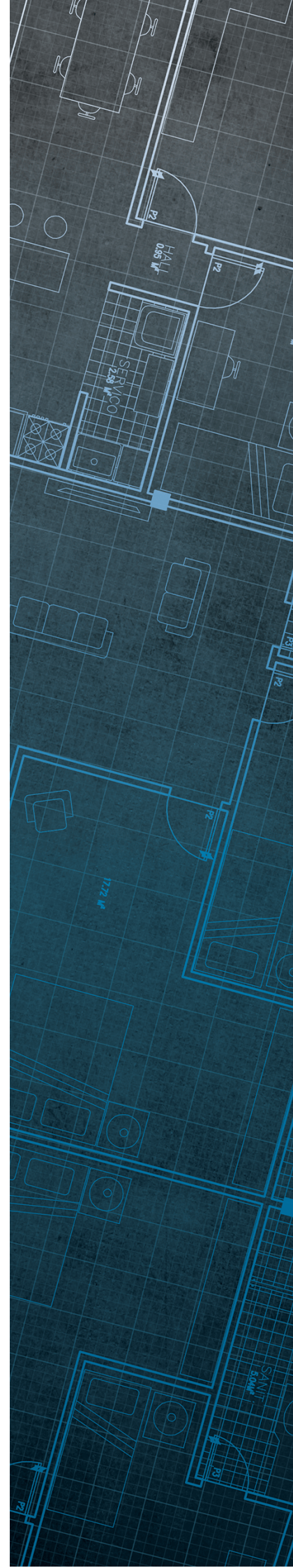
The Coal
Authority

Consultants Coal Mining Report

Penistone Lane
West Yorkshire
HD8 8XY

Date of enquiry:	29 July 2026
Date enquiry received:	29 July 2026
Issue date:	29 July 2026

Our reference:	51003585587001
Your reference:	Quarry House Turbine



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

Iain McLean

Enquiry address

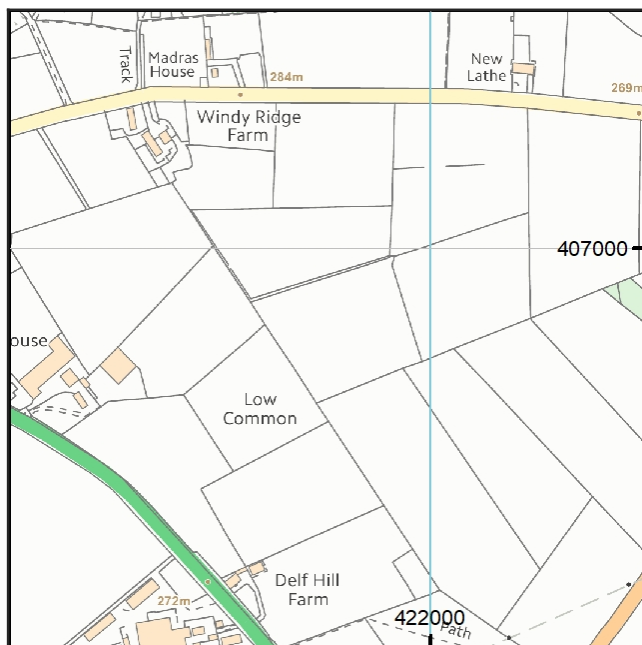
Penistone Lane
West Yorkshire
HD8 8XY

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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

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

None available.

Outcrops

No outcrops recorded.

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 **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.

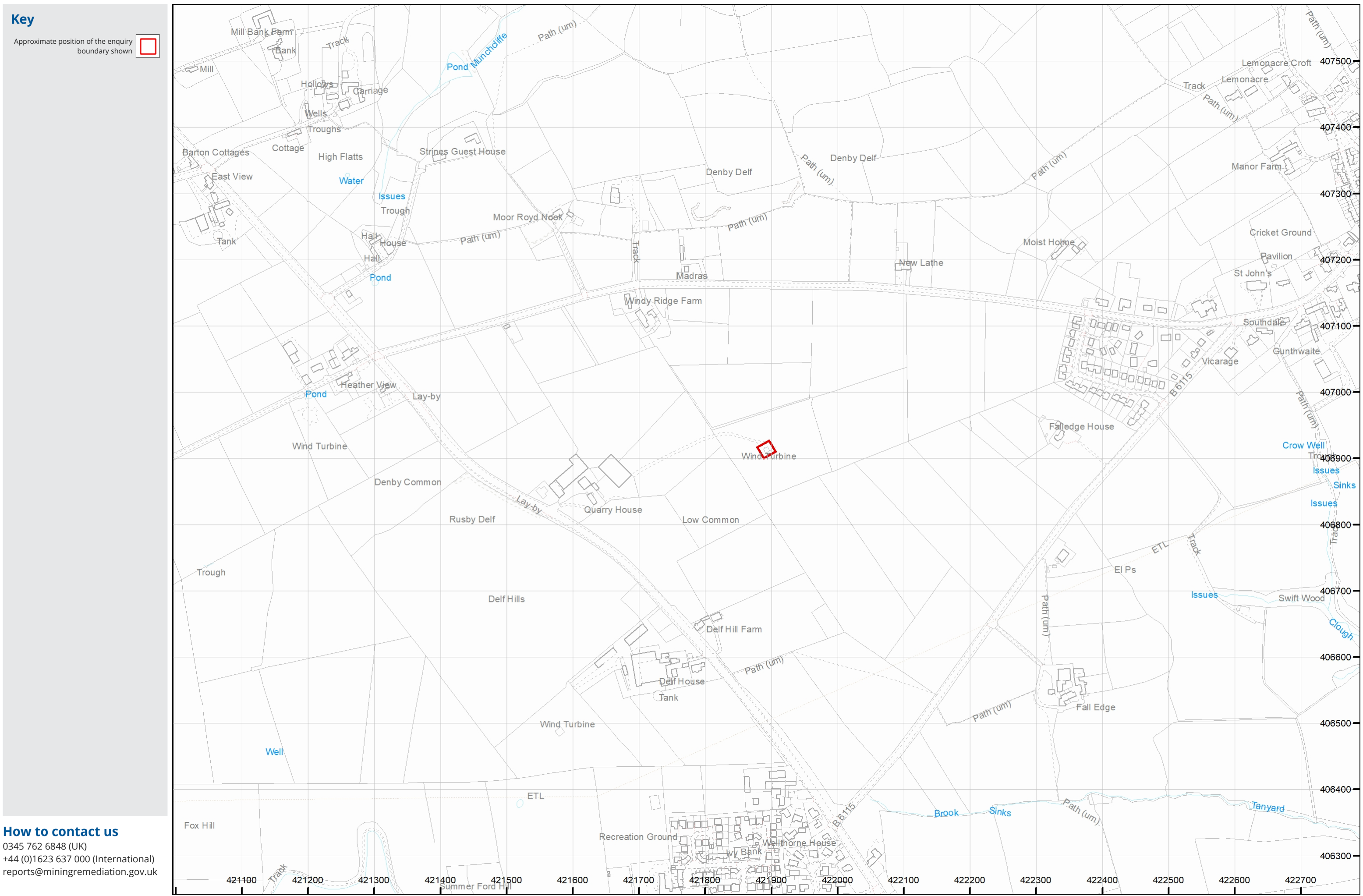
Withdrawal of support notices

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.

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



APPENDIX C

HISTORIC BOREHOLES LOG



Central HS
Yorkshire NRA

86 GLASSOP Redacted

86 SE20/39

FORM WR-38

National Rivers Authority

..... Region

BOREHOLE RECORD

NRA
No.

B779

(Please type)

A. SITE DETAILS

SE20NW 11

Borehole drilled for G.P. B. HOLMES LTD.
Location DELPH HOUSE, FARM, DENBY HUNDERSFIELD.
NGR (8 fig.) SE 218 067 SE 2170 0658 Please attach site plan
Ground Level (if known) ..
Drilling Company MALKAC CONSTRUCTION LTD.
Date of drilling Commenced: 22.7.91 Completed: 20.8.91

B. CONSTRUCTION DETAILS

Borehole datum (if not ground level)..... G.L. above
(point from which all measurements of depth are taken eg flange, edge of chamber, etc) m below GL
Borehole drilled diameter 140 mm from 9.30 to 91.00 m/depth
..... mm from to m/depth
..... mm from to m/depth
Casing material Steel diameter 147 mm from 0 to 9.30 m/depth
and type (eg plain steel, plastic slotted)
..... diameter mm from to m/depth
..... diameter mm from to m/depth
..... diameter mm from to m/depth
Grouting details
Water struck at 56.80 m (depth below datum - mbd)
..... m (depth below datum - mbd)
Rest water Level on completion 35.52 mbd

C. TEST PUMPING SUMMARY (Please supply full details on Forms WR-39)

Test Pumping Datum 0.41 above
(if different from borehole datum) m below borehole datum (mbd)
Pump Suction Depth 52.00 mbd
Water Level (Start of Test) 36.04 mbd
Water Level (End of Test) 38.22 mbd
Pumping rate 4.143 m³/d : 1/s
for 24 days/hours
Recovery to 36.25 mbd in 2 mins : hrs : days
(from end of pumping)
Date(s) of measurements 23.11.94
Please Supply Chemical Analyses If Available

NGDC
ACCESSION
NUMBER

22229

RECEIVED
6-11-95

Redacted



SE20 NW11
SE20/39

FORM WR-38 (cont.)

NRA No.	1779
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(Please type)

D. STRATA LOG

Geological Classification	Description of strata	Thickness	Depth
(BGS only)		m	m
Superficial deposits	TOP SOIL	0.40	0.40
	Clay Brown	2.40	2.80
	SANDSTONE BROWN	0.60	3.40
	MUDSTONE GREY	18.30	21.70
	MUDSTONE DARK GREY	1.90	23.60
	MUDSTONE GREY.	0.70	24.30
	COAL.	0.20	24.50
	MUDSTONE GREY	4.30	28.80
	SANDSTONE GREY.	15.40	44.20
	MUDSTONE, SANDSTONE BANDS GREY	25.60	69.80
	SANDSTONE GREY.	18.20	88.00
	MUDSTONE GREY.	3.00	91.00
[continue on separate page if necessary]			
Other Comments (eg gas encountered, saline water intercepted, etc)			

Lower Coal Measures
Depth A. Longthorpe

Paleo.
Coal
Coal

Paleo. Greenish
sandstone

Paleo. Greenish
Rock

RA
5/9/97

FOR OFFICIAL USE ONLY

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

SURVEY OF EXISTING BOREHOLES



I.G.S. Ref. No. N.G.R. SE 217 065

Licence No. 2-27-5-180

OWNERS NAME G. P. D. Hodge Ltd
ADDRESS Delph House Farm, Derby, Nottingham

App No. b571
Authorised Abstraction
2.285 tcma
2.7 cu m/d
4.2 cu m/h

STRATA DETAILS	THICK.	DEPTH
Top Soil	0.4m	0.4m
Brown Clay	2.4m	2.8m
S. & Brown	0.6m	3.4m
Grey Mottled	18.3m	21.7m
Dark Grey Mottled	1.9m	23.6m
Grey Mottled	0.7m	24.3m
Coal	0.1m	24.5m
Grey Mottled	4.3m	28.8m
Grey Sandstone	15.4m	44.2m
Mottled / St Bed	25.6m	69.8m
Set Grey Mottled Grey	18.1m	88m
Mottled Grey	3m	91m

Dia. 100mm
Depth 91m
Lining Steel 10 x 3m
Well Sinker Mottled Grey
Date 20.9.02
R.W.L. 26.04 MSL
P.W.L. (38.22 MSL)

1063 Wt. 22438/0384 10m 7/45 (51) F.&S.

RECORD OF WELL (SHAFT OR BORE)

At Green Lane (Field 816)

Town or Village *Hogt & Lulls (Parish of Denby)*

County Yates Six-inch quarter sheet 873 NW 1/4

For Mr. Co. Boro of Barnsley
Town Hall, Barnsley

Exact site of well

SE 2062 0676

Level of ground surface

above sea-level (O.D.) 955.5 ft. 07

If well-top is not at ground level, state how far ...

(above; Nil ft.
(below: Nil ft.

SHAFT _____ ft. : diameter

ft. Details of headings

BORE 550 ft.; diameter of bore: at top 21 ins.; at bottom 15 ins. Lengths,
diameters, perforations, etc., of lining tubes 0-84 ft. 18" Solid Tubes

84-300-78 S. Collect tubes
below & below 300 ft

Water struck at depths, below well top, of (feet) *unknown*

Rest-level of water 80 ft. ~~above~~ below well-top. Suction at 300 ft. Yield on 14 ~~hours~~ days ⁶⁰ pump ~~per~~ gal.

per 9,000 gph with depression to 26.5 ft. below well-top. Capacity of pump 90,000 g.p.h. Recovery to

rest level in $10 \pm$ ^{days} mins. Date of measurements Jan. 1967 Date of well 2/4/66

Permanently pumping a groundwater monitoring network installed (June 1968).
Quality of water (attach copy of analysis if available)

Well made by **Redacted**

Information from Barnes by Carl. Walter Red June 1948 Cons. Approved Redacted

Additional notes in space overleaf.

(For Survey use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH		
		Feet	Ins.	Feet	Ins.	
	If measurements start below ground surface, e.g., from bottom of an existing shaft, state how far					
	Slimy yellow clay	0	91.3	0	3	0
	Shale & clay	0	46.1	6	4	61.3
	Loose sandy shale		1	6	6	01.8
	Brown shale	1	83.6	0	12	03.6
	Gray shale	4	27.4	0	26	07.9
	Dark shale	1	83.6	0	32	09.25
	COAL	0	0.8	3	32	37.8
	Fireclay	0	0.8	3	32	69.9
+ about 76'	Light gray shale		33	6	66	02.6
	Dark gray shale		19	0	84	03.6
GRENSIDE SST. COAL	COAL (12" min)	0	30.1	0	85	08.9
	Gray sandy clay with pebbles and with ironstone nodules towards the base	0	61.2	0	87	08.52
GRENSIDE SANDSTONE	Fine gray and buff sandstone medium to coarse grained, folio bedded in part, and with abundant mica and certain bedding planes	54	9	14.1	94.2	
	Dark gray shale with ironstone bands and scattered muschell		28	3	170	051.82
	Dark gray silty mudstone	0	30.1	0	171	052.12
	Continued over leaf					

Continued over leaf

GEOLOGICAL SURVEY AND MUSEUM,
SOUTH KENSINGTON,
LONDON, S.W.7

Date received

Correspondence File No.

N.S. Map
No.

U.S. Map
No.

File mark:
on 1" May

(use symbol:
on 11 Mar

54

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