Environmental Geotechnical Specialists

RGS

COAL MINING

RISK ASSESSMENT REPORT

job number	C3797/23/E/5754
date	25.09.2023
site address	26 Foster Park Road, Denholme, Bradford, West Yorkshire, BD13 4BE
written by	S. Alexander
checked by	R. Palmer
issued by	S. Alexander

Please consider the environment before printing this report.

Contents

Appendices

Report on a Coal Mining Risk Assessment

Location:	26 Foster Park Road, Denholme Bradford, West Yorkshire, BD13 4BE		
For:	Darren Barnes		
Report No.	C3797/23/E/5754	Report date:	September 2023

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

Scott Alexander BSc FGS Geo-environmental Engineer	**Rob Palmer** MSc FGS ACIEH 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 (BGS) map sheet[1].
- British Geological Survey *Geology of Britain Viewer*[2].
- Coal Authority Consultants Coal Mining Report[3].
- British Geological Survey *Borehole Records*[4].

[1] Sources: British Geological Survey (NERC) Map Sheet 69; Bradford Solid and Drift Editions
[2] Sources: British Geological Survey (NERC) Geology of Britain Viewer [*online resource from www.bgs.ac.uk*]
[3] Coal Authority Reference: 51003379000001 dated 20th September 2023.
[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]	Parent Unit[6]	Description
Superficial Geology	Glacial Till	-	Till is unsorted and unstratified drift, generally overconsolidated, deposited directly by and underneath a glacier without subsequent reworking by water from the glacier. It consists of a heterogenous mixture of clay, sand, gravel, and boulders varying widely in size and shape (diamicton).
Solid Geology	Pennine Lower Coal Measures Formation (Undifferentiated)	-	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.

On the geological map, there is one dip indicator relevant to the site (i.e. within the same fault block) that suggests the solid geology beneath the site dips 4° to the south-east.

The published geological records indicate that the 36 Yard Coal (36YC) outcrops at the north-eastern boundary of the site.

The geological mapping indicates that a normal fault is present approximately 40m east of the site with downthrow towards the north-east throwing the younger 48 Yard sandstone against older undifferentiated Lower Coal Measures Formation. A second normal fault is present 35m south of the site with downthrow towards the south which downthrows the younger Elland Flags against the older 48 Yard Rock sandstone member. This fault is also unlikely to affect developments on the surface of the site.

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
36 Yard Coal	0.0m – 0.6m	On Site	At or close to surface.

*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 36 Yard Coal seam is anticipated to be present at depths of less than 30m below the surface of the site.

[5] Sources: British Geological Survey (NERC) Map Sheets 69; Bradford; Solid and Drift Edition, and Geology of Britain 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*]

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:		
Mining Feature	**Yes/No**	**Comments**
Underground Coal Mining	Yes	Halifax Hard Coal (Hard Bed) – 53m depth – Beneath site – 1.00m thickness – last worked 1850.
Probable Unrecorded Shallow Workings	No	-
Spine Roadways at Shallow Depth	No	No spine roadway recorded at shallow depth.
Mine Entries	No	None recorded within 100m of the enquiry boundary.
Abandoned mine plans	Yes	Plans of abandoned mine workings below the site are suggested to be available by the Coal Authority.
Outcrops	No	No outcrops recorded.
Geological Faults	No	No faults, fissures or breaklines recorded.
Opencast Mines	No	None recorded within 500 metres of the enquiry boundary.
Coal Authority Managed Tips	No	None recorded within 500 metres of the enquiry boundary.
Site Investigations	Yes	47.2m north-west of site.
Remediated Sites	No	None recorded within 50 metres of the enquiry boundary.
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.
Mine Gas	No	None recorded within 500 metres of the enquiry boundary.
Mine Water Treatment Schemes	No	None recorded within 500 metres of the enquiry boundary.
Future underground mining	No	For further information please see section 3 of the Consultant's Coal Mining Report.
Coal mining licensing	No	
Court orders	No	
Section 46 notices	No	
Withdrawal of support notices	No	
Payments to owners of former copyhold land	No	

It should be noted that the recorded depths of workings within the Hard Bed is roughly corroborated by seam level data where the site is located approximately 280m AOD and the seam level is approximately 220m AOD provided by the Coal Authority online Viewer data[7].

[7] Coal Authority Online Viewer, Online Resource*: https://mapapps2.bgs.ac.uk/coalauthority/home.html*

2.3 Geological Survey Borehole Records

The BGS (NERC) keeps borehole records from across Britain which are available for public viewing through their website[8]. 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. The logs of the boreholes can be viewed through the BGS website however the most pertinent features are summarised below:

Table 4: Notable Geological Features

Borehole	Approx. Distance from Site	Depth of Borehole (m)	Notable Features
SE03SE144-153[9]	50m – 125m NW	16.0-16.5m	Sandstone and mudstone with thin clay bands (all locations to borehole termination)

Other borehole scans were available, however, these were felt to be of limited value due to the quality of logging and/or shallow depth obtained by the boreholes.

The borehole data presents that the coal seam thought to be present to the north of the site may indeed be locally absent as this has not ben recorded in the published borehole records. Indeed this coal seam may have been completely weathered to comprise one of the clay bands noted in the borehole logs. However as the boreholes only penetrate to a maximum depth of 16.50m below the surface there exists a remote possibility that any coal seams may be at a greater depth than those proven in the borehole records.

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 5: Development Specific Risk Assessment

Item	Risk attributed to	Feature(s) Considered	Risk Rating
3.1	Shallow coal workings	36 Yard Coal (36YC)	Moderate
3.2	Coal workings at depth	Hard Bed (HB)	Low
3.3	Mine gas	Shallow and underground coal workings	Low/Moderate
3.4	Mine shafts	No shafts within influencing distance of surface of site	N/A

[8] Sources: British Geological Survey (NERC) Onshore Geoindex [*online resource from https://mapapps2.bgs.ac.uk/geoindex/home.html*]
[9] Sources: BGS Borehole Scan SE11NW218 *online resource from https://api.bgs.ac.uk/sobi-scans/v1/borehole/scans/items/41221*

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 within 30m of the surface at the site. This seam is named as the 36 Yard Coal with potential thickness between 0.00m and 0.60m. Although the nearby borehole records indicate this seam may be absent, this seam may be present beneath the site. Historic coal mining activity is evident in the nearby area and has been recorded beneath the site at great depth, 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 seams, the table below suggests the thickness of competent overburden required above each seam to mitigate instability at the surface.

Table 6: Required Thickness of Competent Overburden

Seam Name	Seam Thickness	Anticipated Depth Below Site	Required Thickness of Competent Overburden
36 Yard Coal (36YC)	0.0m – 0.6m	5m to 10m	6.60m

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 should the coal seam and workings be present. Therefore, a moderate risk rating has been assigned to the identified seam, and further investigation is recommended to prove or disprove the presence of illicit mining activity. From the Published Geological Records there are not expected to be any other coal seams, recorded or unrecorded, which may be at risk from shallow workings beneath the site where the next named coal seam, Hard Bed Coal (HB) has been recorded to have been worked at significant depth beneath the site i.e. in excess of 30m.

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 and has been characterised as low risk.

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 low to 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.

Whilst underground workings at depth are recorded beneath the site, these are at a significant depth (>50m) below the surface of the site and no significant pathways to developments on the site can be determined. Inferred faults exist outside the site boundary, however these outcrop topographically below the level of the site thus it is extremely unlikely that ground gas would migrate uphill towards the site and would instead prefer to migrate downhill towards the east and south away from the site.

Should no evidence of shallow underground workings be proven then the site may be reclassified as low risk.

4. Conclusions

In light of the above information there appears to be discrepancy between the Coal Authority information and the British Geological Survey data and the recorded borehole records for the local area. The British Geological Survey published map records indicate that a coal seam is inferred to outcrop on the north-east corner of the proposed development area. This seam is named as the 36 Yard Coal and is anticipated to sub-crop beneath the site at a shallow depth. The Coal Authority Coal Mining Data supports this and also shows a coal outcrop (with reference NY225K) which is inferred to outcrop across the centre of the proposed development area. This seam reference is thought to represent the 36 Yard Coal Seam. The Coal Authority 1:25,000 mapping records indicate that the coal seam is inferred to outcrop approximately 10m to the west of the site and sub-crop away from the site.

However, the Consultants Coal Mining Report does not indicate the presence of any coal outcrops within 100m of the surface of the site, which does not correlate either with the Coal Authority Planning or Mineral Data or the British Geological Survey published geological maps. It is also of note that the *BGS 1:50,000 solid and drift Sheet 69, Bradford,* indicates that the 36 Yard Coal seam has a seam thickness of between 0.0m and 0.60m however the local *BGS 1:10,000 map SE03SE* indicates the 36 Yard coal seam has a seam thickness of between 0.10m and 0.30m. From the available information this coal seam may have been omitted from the Consultants Coal Report because the published data suggest this seam may not be of sufficient thickness and/or quality to prove economic for working.

The Coal Authority data does not indicate the site is located within an area of possible shallow coal mining workings or within a high risk development area. A high risk development area and area of possible shallow coal mining workings are attributed to the coal seam which is shown to outcrop to the west of the development area which is thought to correlate to the coal seam inferred to outcrop to the north-east of the site in the BGS data. Therefore, should the coal seam be further east than suggested by the Coal Authority then the high risk development and area of possible shallow coal mining workings shall also be extended to encompass up to the north-eastern corner of the site to correlate with the BGS data.

In the most conservative and risk averse solution it shall be presumed that the coal seam is present in line with the British Geological Survey records and is inferred to outcrop to the north-east of the site, therefore it cannot be recommended that development takes place without further investigation to conclusively determine the presence of such coal seam. This work should include physical drilling methods to explore the ground conditions and to prove/disprove the presence of this coal seam and determine the presence of any shallow coal workings which may also be present.

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 shallow 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 say 15m below the top of the rockhead, with one or two other boreholes proving the depth and continuity of the coal seam if proven. 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

Notes:

PLANNING DRAWING

NOTES

- THIS DRAWING AND THE COPYRIGHTS AND PATENTS THEREIN ARE THE DESIGNERS PROPERTY AND MAY BE USED OR REPRODUCED ONLY UNDER CONTRACT.
- ALL WORK TO BE CARRIED OUT IN STRICT ACCORDANCE WITH THE BUILDING REGULATIONS AND TO THE SATISFACTION OF THE LOCAL AUTHORITY TOWN / COUNTRY PLANNING, BUILDING CONTROL AND DRAINAGE DEPARTMENTS.
- APPOINTED CONTRACTOR RESPONSIBLE FOR NOTIFYING LOCAL AUTHORITY BUILDING CONTROL DEPARTMENT UPON COMMENCEMENT OF BUILDING WORKS ON SITE.
- THESE PLANS HAVE BEEN PREPARED FOR SUBMISSION TO THE LOCAL AUTHORITY FOR TOWN & COUNTRY PLANNING AND / OR BUILDING REGULATION PURPOSES ONLY AND DO NOT CONSTITUTE FULL WORKING DRAWINGS. INFORMATION NOTED ON THE PLANS OR ACCOMPANYING DOCUMENTS / DETAILS IS NOT EXHAUSTIVE, AND CONTRACTOR TO CHECK WITH CLIENT AS TO ANY ADDITIONAL WORK NOT SPECIFICALLY NOTED OR IMPLIED. AND THEREFORE ALL FORMS OF CONSTRUCTION AND DETAILS ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR
- ALL MATERIALS ARE TO BE USED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURERS
- ANY WORK COMMENCING ON SITE PRIOR TO BUILDING REGULATIONS APPROVAL IS NOT RECOMMENDED AND IS ENTIRELY THE RESPONSIBILITY OF THE CLIENT.

Revisions

CONVERSION OF GARAGE & NEW BUILD DWELLING

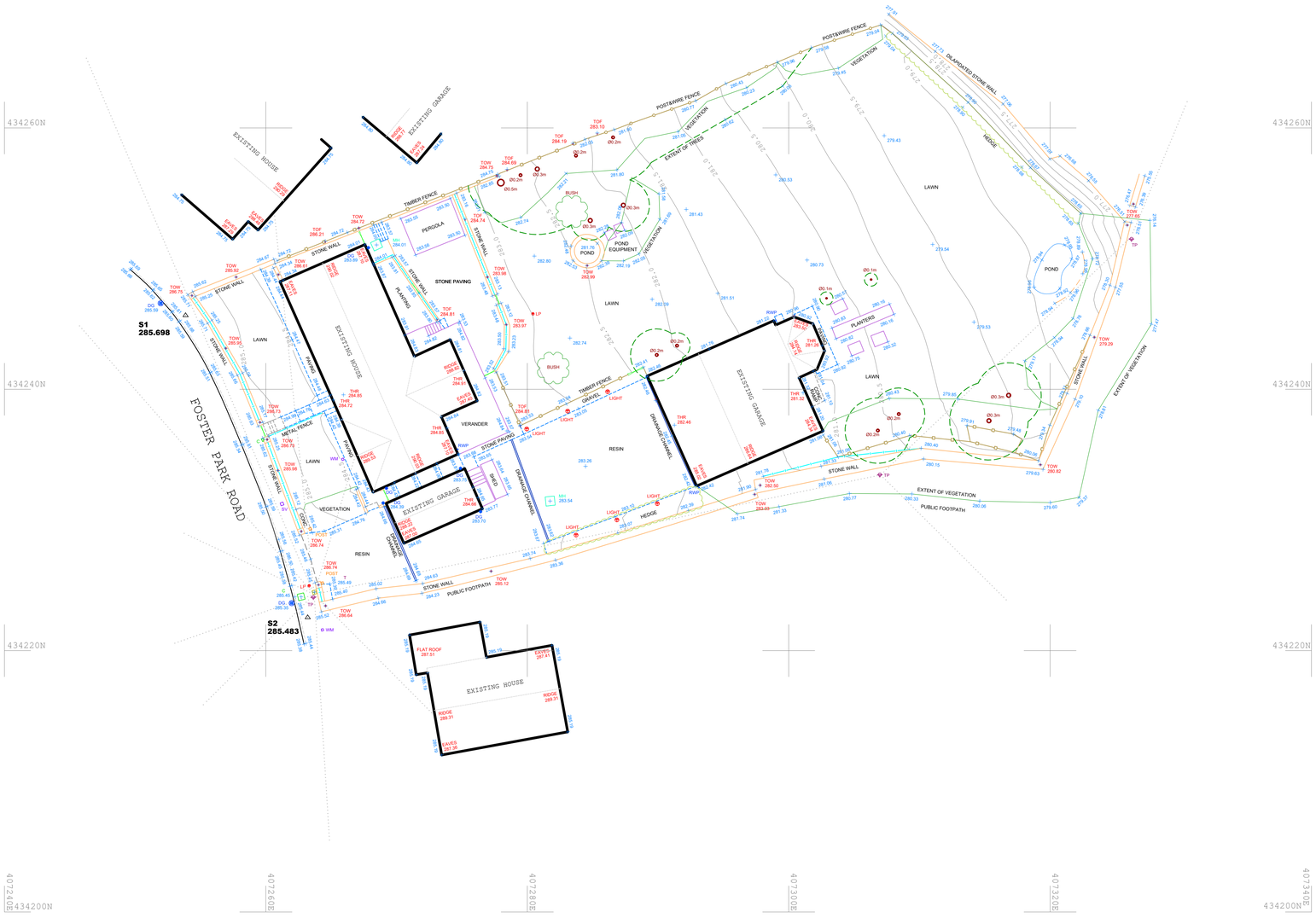
FOSTER PARK ROAD

PROPOSED SITE PLAN

Drawn:	MH	Scale:	1:200 @ A2
Date:	July 23	Checked:	

mark@ternionarchitecture.co.uk
07859 250 318
tom@ternionarchitecture.co.uk
07715 276 311
www.ternionarchitecture.co.uk
Ternion Architecture
Design Consultant | Project Management

Dwg No: 016/01(02)005 #



Notes

Direction of North

GRID

OS NATIONAL GRID.
Using the OS GPS Network and applying OSTN15 transformation and then removing the scale factor for true distances.

DATUM

OS LEVEL DATUM.
Using the OS GPS Network and applying OSGM15 National Geoid Model to obtain local area corrections.

STATION LISTING

Station	Easting	Northing	Level
S1	407253.853	434245.657	285.698
S2	407263.201	434222.542	285.483

TOPOGRAPHICAL SURVEY KEY

DRAINAGE & WATER SERVICES

DG	Drain/Gully
KO	Kerb Outlet
MH	Circular Manhole
MH	Square Manhole
MH	Triangular Manhole
RE	Rodding Eye
FH	Fire Hydrant
ST	Stop Tap
SV	Stop Valve
TAP	Tap
WO	Wash Out
WM	Water Meter
WV	Water Valve
AV	Air Valve

STREET FURNITURE & GEOTEC

MAIL	Post Box
BUS	Bus Stop
BOL	Bollard
SIGN	Sign
TL	Traffic Light
CCTV	Camera
LP	Lamp Post
LIGHT	Light
COL	Column
V	Vent
BM	Bench Mark
M	Marker Post
	Trial Pit
BH	Borehole

SERVICES

G	Gas Valve
IC	Inspection Cover
C	Cable TV Cover
C	Cable TV Supply
E	Electric Cover
EP	Electricity Pole
ER	Earth Rod
T	Telecoms Cover
TP	Telegraph Pole
GAS	Gas Riser Pipe
RWP	Rainwater Pipe
SVP	Soil Vent Pipe

ABBREVIATIONS

CL	Cover Level
IL	Invert Level
UTR	Unable To Raise
THR	Threshold Level
TOF	Top Of Fence
TOH	Top Of Hedge
TOW	Top Of Wall
U/S	Underside
WC	Window Cill Level
WH	Window Head Level
DH	Door Head Level

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CLIENT
Ternion Architecture

SITE
26 Foster Park Road
Denholme, Bradford

DRAWING TITLE
2D Topographical Survey

DRAWING REF (LAYOUT TAB)	SCALE@A1
1498-102_2D (A1)	1/200
PROJECT REF	REV
1498-102	Ø

SURVEYED	MT	DRAWN	MT
CHECKED	WS	DATE	23 / 06 / 2023

REV	DATE	DRAWN	DESCRIPTION	CHECKED
-	-- / -- / ----	--	--	--

Appendix 2

Coal Authority Report

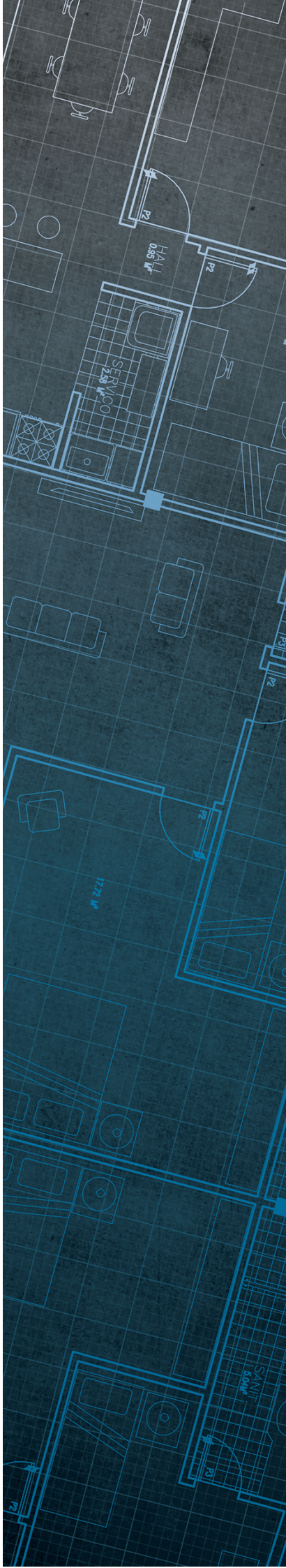
The Coal Authority

Consultants

Coal Mining Report

26 Foster Park Road
Denholme
Bradford
West Yorkshire
BD13 4BE

Date of enquiry:	**20 September 2023**
Date enquiry received:	**20 September 2023**
Issue date:	**20 September 2023**
Our reference:	**51003379000001**
Your reference:	**C/3797/23/E/5754**



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

26 Foster Park Road
Denholme
Bradford
West Yorkshire
BD13 4BE

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
HALIFAX	HALIFAX HARD	Coal	6G6G	53	Beneath Property	1.6	South	100	1850

Probable unrecorded shallow workings

None.

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:

7047	FGB457	PO0
FGB458	7044	

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

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

Distance to site investigation (m)	Direction
47.2	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.

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.

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. 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 Coal Authority

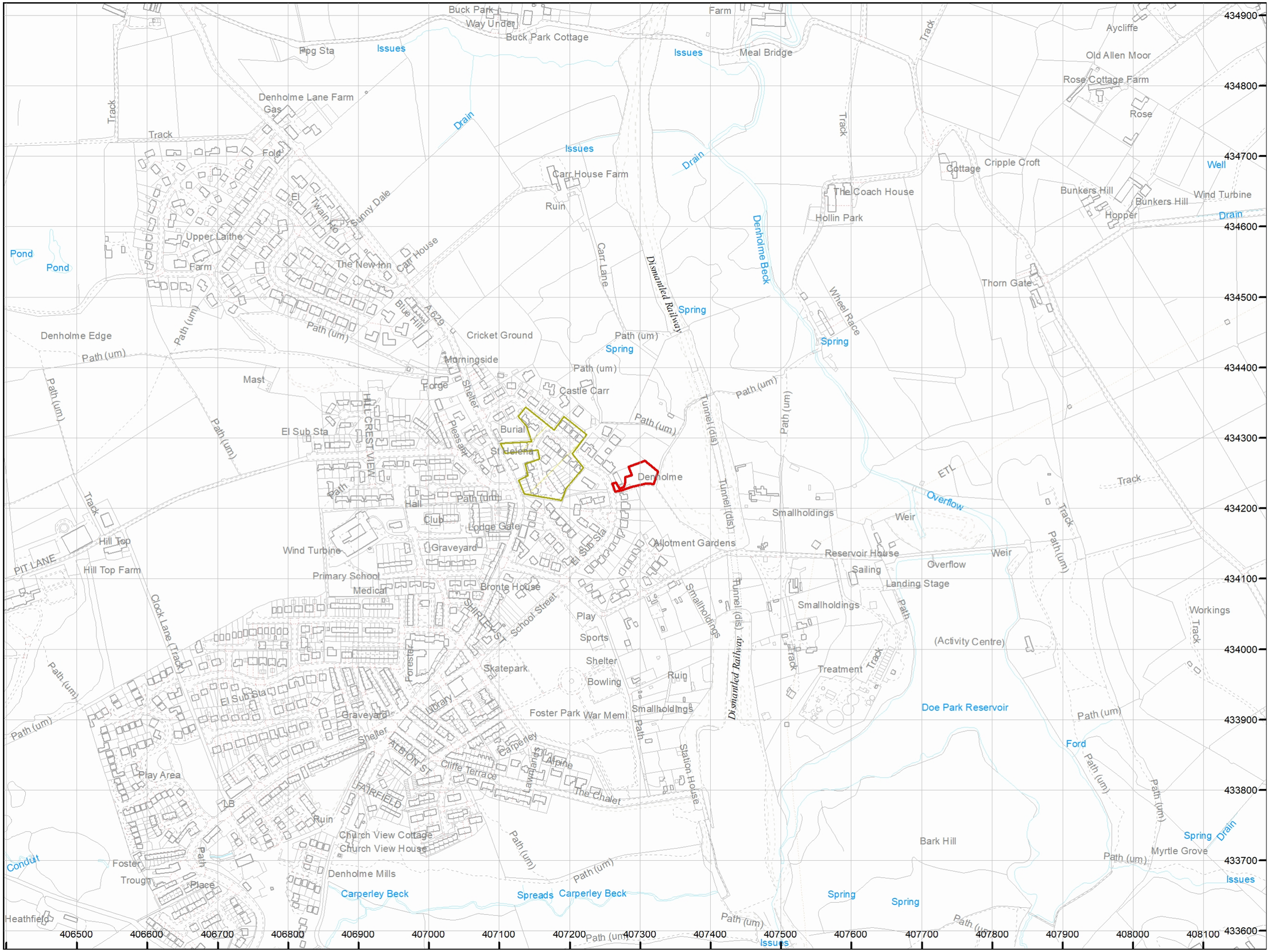
Summary of findings

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

Site investigations



How to contact us
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com

Appendix 3

BGS Borehole Records

Se03se 144 0725-8429

D7

HETS

WEST YORKSHIRE HIGHWAYS ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

RECORD OF DRILLING

Proposed Housing Development

SITE Foster Park Road, Dennaline BOREHOLE NO. 1

TYPE OF DRILL Holman Rotary Percussive ORDNANCE DATUM LEVEL Existing GL

SIZE OF DRILL 75 mm STANDING WATER LEVEL -

DATE COMMENCED 9.2.88 DATE COMPLETED 9.2.88

DEPTH m	DESCRIPTION OF STRATA	THICKNESS m	REMARKS
0.0 - 1.0	Soil and clay traces	1.0	Poor returns
1.0 - 3.0	Sand with sandstone fragments and small pebbles	2.0	Soft
3.0 - 5.0	Sandy mudstone	2.0	
5.0 - 11.0	Sandstone with intermittent bands of mudstone and thin clays	6.0	
11.0 - 16.5	Sandstone and mudstone traces	5.0	Poor returns

SE03SE 145 0722-3431

HETS

WEST YORKSHIRE HIGHWAYS, ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

0722 3431

RECORD OF DRILLING

Proposed Housing Development

SITE Foster Park Road, Denholme BOREHOLE NO. 2

TYPE OF DRILL Holman Rotary Percussive ORDNANCE DATUM LEVEL Existing GL

SIZE OF DRILL 75 mm STANDING WATER LEVEL -

DATE COMMENCED 3.2.88 DATE COMPLETED 9.2.88

DEPTH m - m	DESCRIPTION OF STRATA	THICKNESS m	REMARKS
0.0 - 1.2	Soil and clay traces	1.2	Soft Poor returns
1.2 - 3.5	Sand with sandstone fragments and pebbles		
3.5 - 4.5	Sandy mudstone	1.0	
4.5 - 15.5	Sandstone and mudstone bands with intermittent thin clays	11.0	

SE03SE 146 0720-3432

HETS

WEST YORKSHIRE HIGHWAYS, ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

RECORD OF DRILLING

0720 3432

Proposed Housing Development

SITE Foster Park Road, Denholme BOREHOLE NO. 3

TYPE OF DRILL Holman Rotary Percussive ORDNANCE DATUM LEVEL Existing GL

SIZE OF DRILL 75 mm STANDING WATER LEVEL -

DATE COMMENCED 9.2.88 DATE COMPLETED 9.2.88

DEPTH m	DESCRIPTION OF STRATA	THICKNESS m	REMARKS
0.0 - 0.5	Fill	0.5	No returns
0.5 - 3.6	Sand with sandstone fragments and small pebbles	3.1	
3.6 - 4.3	Sandy mudstone	0.7	
4.3 - 16.5	Sandstones and mudstones with intermittent thin clay bands	12.2	

SE03SE 147 0720-3428

HETS

WEST YORKSHIRE HIGHWAYS ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

0720 3428

RECORD OF DRILLING

Proposed Housing Development

SITE Foster Park Road, Denholme BOREHOLE NO. 4

TYPE OF DRILL Holman Rotary Percussive ORDNANCE DATUM LEVEL Existing GL

SIZE OF DRILL 75 mm STANDING WATER LEVEL -

DATE COMMENCED 9.2.88 DATE COMPLETED 9.2.88

DEPTH m m	DESCRIPTION OF STRATA	THICKNESS m	REMARKS
0. 0 - 1.0	Soil and clay traces	1.0	Poor returns
1.0 - 3.1	Sand with sandstone fragments and small pebbles	2.1	
3.1 - 16.5	Sandstones and mudstones with thin clay bands	13.4	

SE03SE 148 0718-3426

HETS

WEST YORKSHIRE HIGHWAYS ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

0718 3426

RECORD OF DRILLING

Proposed Housing Development

SITE Foster Park Road, Denholme BOREHOLE NO. 4a

TYPE OF DRILL Holman Rotary Percussive ORDNANCE DATUM LEVEL Existing GL

SIZE OF DRILL 75 mm STANDING WATER LEVEL -

DATE COMMENCED 9.2.88 DATE COMPLETED 9.2.88

DEPTH m m	DESCRIPTION OF STRATA	THICKNESS m	REMARKS
0.0 - 1.0	Soil and clay traces	1.0	Poor returns
1.0 - 3.0	Sand, sandstone fragments and clay traces with small pebbles	2.0	Soft Poor returns
3.0 - 15.5	Sandstones and mudstones with thin clay bands	12.5	

SE03SE 149 0716-3428

HETS

WEST YORKSHIRE HIGHWAYS, ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

RECORD OF DRILLING

0716 3428

Proposed Housing Development

SITE Foster Park Road, Denholme BOREHOLE NO. 5

TYPE OF DRILL Holman Rotary Percussive ORDNANCE DATUM LEVEL Existing GL

SIZE OF DRILL 75 mm STANDING WATER LEVEL -

DATE COMMENCED 9.2.88 DATE COMPLETED 9.2.88

DEPTH m	DESCRIPTION OF STRATA	THICKNESS m	REMARKS
0.0 - 1.0	Soft ground	1.0	No returns
1.0 - 2.6	Clay, sand and pebble traces	1.6	Soft Poor returns
2.6 - 15.5	Sandstones and mudstones with thin clay bands	12.9	

SE03SE 150 0720-3424

HETS

WEST YORKSHIRE HIGHWAYS, ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

0720 3424

RECORD OF DRILLING

Proposed Housing Development

SITE Foster Park Road, Denholme BOREHOLE NO. 6

TYPE OF DRILL Holman Rotary Percussive ORDNANCE DATUM LEVEL Existing GL

SIZE OF DRILL 75 mm STANDING WATER LEVEL -

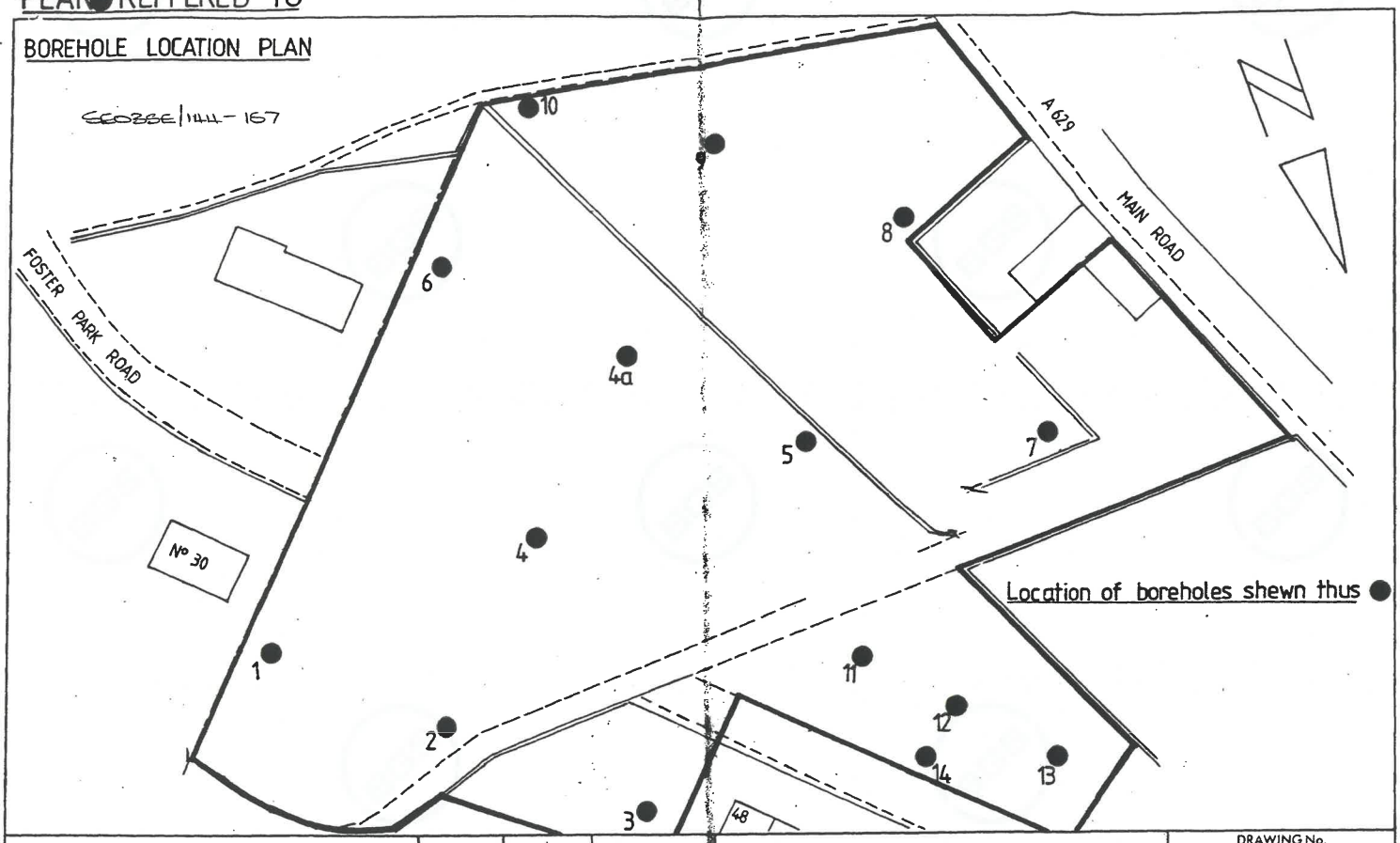
DATE COMMENCED 9.2.88 DATE COMPLETED 9.2.88

DEPTH m m	DESCRIPTION OF STRATA	THICKNESS m	REMARKS
0.0 - 1.1	Soil and clay	1.1	
1.1 - 2.8	Sand with sandstone fragments and small pebbles	1.7	Soft
2.8 - 15.5	Sandstones and mudstones with thin clay bands	12.7	

PLAN REFERRED TO

BOREHOLE LOCATION PLAN

SE03SE/HILL-167



Location of boreholes shewn thus ●

Proposed Housing Development Foster Park Road Denholme		INITIALS / DATE	SCALES
	DRAWN BY	AD Feb 88	1/500
	CHECKED BY	AD Feb 88	
	TRACED BY		
	CHECKED BY		

HETS
WEST YORKSHIRE HIGHWAYS, ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

Materials Laboratory, Horbury Road, Ossett, Wakefield WF5 0BZ.
Wakefield (0924) 260621

DRAWING No. 88/11

DATE 10th February 1988

SE03SE ISI 0715-3426

HETS

WEST YORKSHIRE HIGHWAYS, ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

0715 3426

RECORD OF DRILLING

Proposed Housing Development

SITE Foster Park Road, Denholme BOREHOLE NO. 8

TYPE OF DRILL Holman Rotary Percussive ORDNANCE DATUM LEVEL Existing GL

SIZE OF DRILL 75 mm STANDING WATER LEVEL -

DATE COMMENCED 10.2.88 DATE COMPLETED 10.2.88

DEPTH m m	DESCRIPTION OF STRATA	THICKNESS m	REMARKS
0.0 - 1.2	Soil and clay	1.2	
1.2 - 1.6	Clay and sandstone fragments	0.4	
1.6 - 2.7	Sand with sandstone fragments and small pebbles	1.1	
2.7 - 16.0	Sandstones and mudstones with thin clay bands	13.3	

SE03SE 152 0717-3424

HETS

WEST YORKSHIRE HIGHWAYS, ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

0717 3424

RECORD OF DRILLING

Proposed Housing Development

SITE Foster Park Road, Denholme BOREHOLE NO. 9

TYPE OF DRILL Holman Rotary Percussive ORDNANCE DATUM LEVEL Existing GL

SIZE OF DRILL 75 mm STANDING WATER LEVEL -

DATE COMMENCED 10.2.88 DATE COMPLETED 10.2.88

DEPTH m	DESCRIPTION OF STRATA	THICKNESS m	REMARKS
0.0 - 3.5	Clay, sandstone fragments, sand and small pebbles	3.5	Soft Poor returns
3.5 - 16.0	Sandstones and mudstone with thin clay band	12.5	

SE03SE 153 0719-3422

HETS

WEST YORKSHIRE HIGHWAYS, ENGINEERING AND TECHNICAL SERVICES JOINT COMMITTEE

RECORD OF DRILLING

0719 3422

Proposed Housing Development

SITE . Foster Park Road, Denholme BOREHOLE NO. . 10

TYPE OF DRILL Holman Rotary Percussive ORDNANCE DATUM LEVEL Existing GL

SIZE OF DRILL 75 mm STANDING WATER LEVEL -

DATE COMMENCED 10.2.88 DATE COMPLETED 10.2.88

DEPTH m	DESCRIPTION OF STRATA	THICKNESS m	REMARKS
0.0 - 3.5	Clay and sand with sandstone fragments and small pebbles	3.5	
3.5 - 16.5	Sandstones and mudstones with thin clay bands	12.5	