

Mark Boyd  
Urbana Town Planning  
Steel City House  
West Street  
Sheffield  
S1 2GQ

CAT/GCB/45175-001

15 July 2020

Dear Mark,

## **Bank End Road, Barnsley Coal Mining Risk Assessment**

We write regarding the possibility of shallow coal mining affecting the above site. Our comments are based on a review and our interpretation of geological maps, memoirs and Ordnance Survey maps, as well as a Coal Authority mining report specific to this site. We have not visited the site.

### **The Site**

The site has an area of approximately 0.4 hectares and is located to the north of Bank End Road, approximately 2.4 km south east of Barnsley town centre. The site is approximately rectangular in shape and is centred on grid reference 435931, 404296.

The site slopes relatively steeply at a gradient of approximately 1 in 3 from around 117 m AOD in the north to around 103 m AOD in the south and is covered by mature woodland. The southern boundary is formed by a low drystone wall in varying states of disrepair adjoining Bank End Road with residential properties beyond. The remaining boundaries typically adjoin the gardens of residential properties. The only exception to this is the northern part of the eastern boundary which appears to comprise a continuation of the woodland.

It is proposed to redevelop the site with low-rise residential housing.

### **Geological Review**

The British Geological Survey (BGS) map sheet SE30SE (1:10,000 scale), Sheet 87 (1:50,000 scale), the BGS online viewer and the geological memoir for Barnsley have been reviewed.



The site is indicated to be underlain by strata of the Pennine Middle Coal Measures Formation. The southern half of the site, approximately parallel with Bank End Road, is shown to comprise undifferentiated strata comprising interbedded mudstone, siltstone and sandstone. Whereas the northern half is underlain by the Woolley Edge Rock, a named sandstone unit. Strata are indicated to dip to the north east at around 5°.

No superficial deposits are shown to overlie the site and no faults, fissures or other lines of weakness are recorded in the vicinity.

The Meltonfield Coal (aka Woodmoor or Wathwood Coal) is shown to outcrop across the southern third of the site just below, and parallel to, the boundary between the Woolley Edge Rock and the underlying undifferentiated strata. The 1:10,000 scale map indicates the thickness of the seam to range between around 1.1 m and 1.3 m. However, the geological memoir notes the seam to be around 0.91 m thick in the area, often with a thick dirt parting. The seam is noted to have been worked locally at crop and also at several collieries in the area.

The next recorded seam on the generalised vertical section is the Two Foot Coal (aka Royston or Half Yard Coal) shown to outcrop around 70 m south west of the site. The vertical section indicates the seam to lie around 14 m below the Meltonfield Coal. The thickness is shown to range between around 0.9 m and 1.45 m on the generalised vertical section. However, the geological memoir indicates this is likely to be closer to 0.6 m. The seam is not considered to be of great importance but is of some worth and is likely have been worked occasionally in the area.

The next seam in the succession is the Abdy Coal (aka Winter Coal). The coal is indicated to range between around 0.8 m and 0.9 m thick and separated from the Two Foot coal by around 11 m of measures.

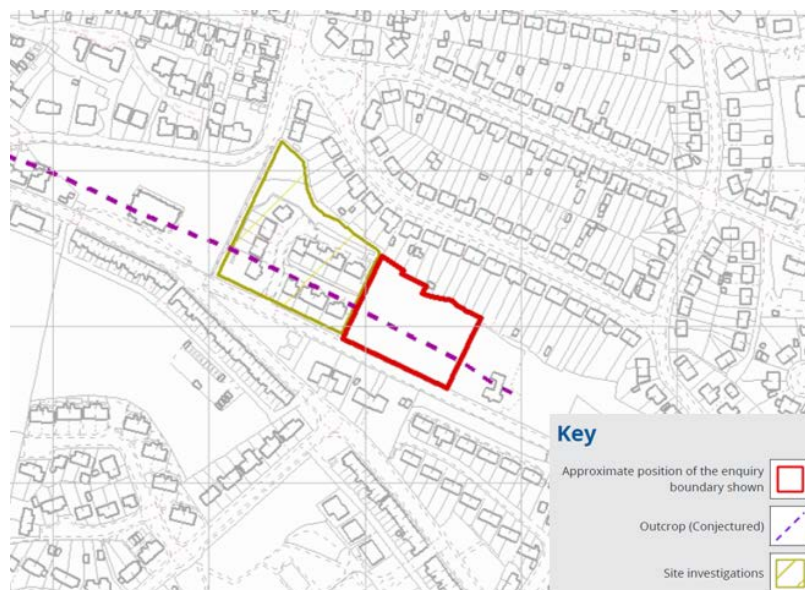
### **Coal Authority Mining Report**

A Coal Authority consultants mining report has been obtained for the site and a copy is appended to this letter. The Coal Authority state the site is within a surface area that could be affected by underground mining in six seams of coal (Barnsley, Lidgett, Top Fenton, Parkgate, Middleton Main and Silkstone) between 158 m and 540 m depth, last worked in 1970. The dips recorded within the coal seams beneath the site typically range between 4° and 5° to the north east.

The Coal Authority also believe there to be coal close to the surface which could have been worked via unrecorded mining in the past.

There are no recorded mine entries within 100 m of the site boundary. The Coal Authority only provide records of known entries, therefore the presence of unrecorded mine entries on site cannot be discounted.

The Meltonfield Coal is conjectured to outcrop on site as shown on the map extract below;



The Coal Authority note the Meltonfield Coal as workable.

There are no faults, fissures or breaklines recorded to cross the site at surface.

No open cast mines or Coal Authority managed tips are recorded within 500 m of the site.

The Coal Authority record the land to the west of the site to have previously undergone site investigation.

There are no remediated sites, damage notices or claims recorded on or within 50 m of the site. There are no current Stop Notices delaying the start of remedial or repair works to the property. The property is not in an area where a notice to withdraw support has been given.

There are no records of mine gas or mine water treatment schemes within 500 m of the site boundary.

No future underground mining or coal mining licenses have been authorised within 200 m of the site.

## **Risk Assessment**

The Meltonfield Coal is expected to outcrop on site. Given the dip of strata, and the steeply sloping topography of the site, the seam is expected to reach a maximum depth of around 13 m at the northern boundary. The seam has reportedly been worked locally at crop and from below ground in the wider area. Given the expected workable thickness of around 0.9 m, any workings within this seam would likely pose a significant risk to the surface stability of the site. The only exception to this may be at the northern periphery of the site where sufficient competent cover may exist. Any underground workings within influencing distance of the surface would require treatment.

The underlying Two Foot Coal is expected between around 10 m below ground level (bgl) at the southern boundary and 28 m bgl in the north. Based on the workable seam thickness of around 0.6 m, any workings within the seam are unlikely to pose a significant risk to the proposed development.

The Abdy Coal is expected between around 21 m and 39 m below the southern and northern boundaries, respectively. Given the expected workable thickness of between 0.8 to 0.9 m, any workings within the seam are considered to be overlain by sufficient competent cover even if the overlying seams have been worked also. Therefore, any workings within this seam are not expected to pose a significant risk to the surface stability of the proposed development.

The potential presence of unrecorded mine entries cannot be discounted at this stage.

## **Conclusion**

The Meltonfield Coal is expected to outcrop in the southern part of the site, dipping beneath to the north east. The seam may have been worked at outcrop or below ground in the past. Given the anticipated depths and workable thickness of the seam, workings (if present) are not expected to be overlain by sufficient cover, except for the extreme northern extremities of the site. Therefore, any workings within the seam would likely pose a significant risk to the surface stability of any proposed development and would require treatment prior to development of the site.

A rotary borehole investigation is recommended to establish the depth, thickness and condition of the Meltonfield Coal. During the works, it would be prudent to confirm that sufficient competent cover exists over the underlying Two Foot Coal and Abdy Coal seams, respectively.



The outcrop of the Meltonfield Coal should also be investigated via trial pitting methods to determine if workings have taken place at or close to crop.

If underground workings are identified within influencing distance of the surface remedial works such as drilling and grouting may be required prior to development of the site. Any surface workings may require the need for deeper or alternative foundation solutions.

An allowance should be made to treat any previously unidentified mine entries if found.

The site is currently covered by mature woodland with no obvious means of access for plant or machinery. It is anticipated that significant vegetation clearance and some degree of regrading and/or allowance for special access equipment will be required to form suitable access for investigation.

We trust that the above is satisfactory, however if you have any comments or queries please do not hesitate to contact us. This risk assessment should be submitted to the regulators for their review.

Yours sincerely,

A handwritten signature in purple ink that reads 'C. Topliss'.

**Catherine Topliss**

Enc. Coal Authority Mining Report



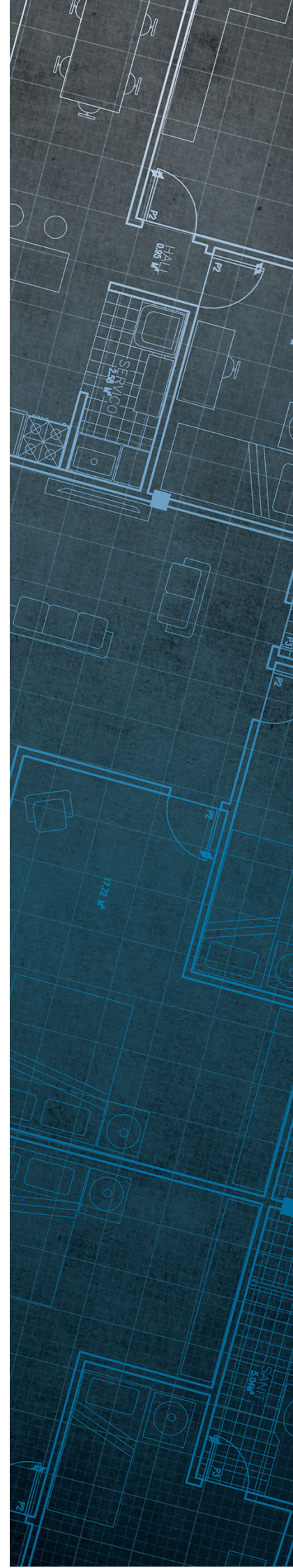
The Coal  
Authority

# Consultants Coal Mining Report

Bank End Road  
Worsbrough Dale  
Barnsley  
S70 4FB

Date of enquiry: 23 June 2020  
Date enquiry received: 23 June 2020  
Issue date: 23 June 2020

Our reference: 51002287098001  
Your reference: 45175



# 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

EASTWOOD & PARTNERS (CONSULTING ENGINEERS) LTD

## Enquiry address

Bank End Road  
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Barnsley  
S70 4FB

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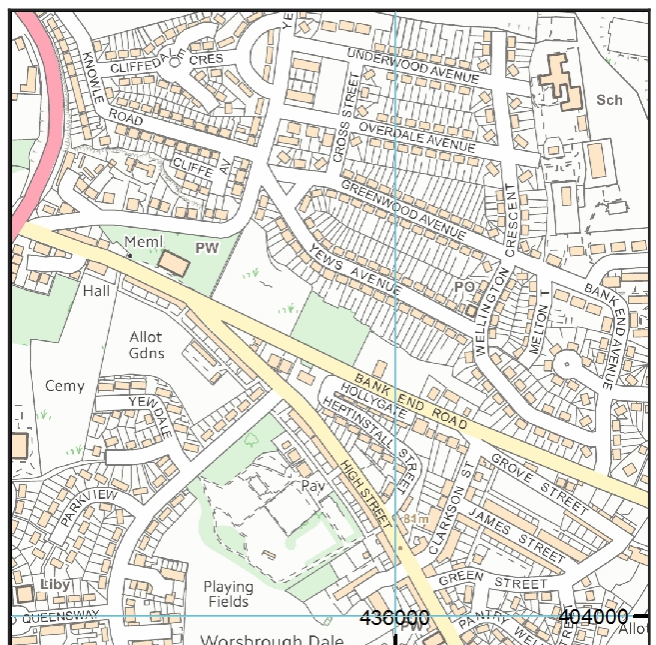
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Approximate position of property



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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
unnamed	BARNSLEY	Coal	6IA4	158	South-East	4.7	North-East	262	1856
unnamed	BARNSLEY	Coal	6Z8A	161	Beneath Property	4.6	North-East	252	1877
unnamed	BARNSLEY	Coal	6IA6	174	East	3.5	North-East	262	1860
BARROW	LIDGETT	Coal	6Z8B	274	Beneath Property	3.7	North-East	119	1967
unnamed	LIDGETT	Coal	6IAC	275	East	4.2	North-East	122	1967
BARROW	TOP FENTON	Coal	6Y3A	378	South	4.6	North-East	102	1946
BARROW	TOP FENTON	Coal	5QRG	382	South	4.0	North-East	100	1944
unnamed	TOP FENTON	Coal	6Z8H	396	Beneath Property	4.2	North-East	96	1950
BARNSLEY	PARKGATE	Coal	5QRD	400	South	3.3	North-East	142	1934
unnamed	TOP FENTON	Coal	6IAE	402	East	4.2	North-East	99	1949
BARROW	PARKGATE	Coal	6Y3B	405	South	4.7	North-East	175	1836
BARNSLEY	PARKGATE	Coal	6Z8N	412	Beneath Property	4.4	East	155	1934
BARNSLEY MAIN	PARKGATE	Coal	6IAK	417	East	4.0	North-East	142	1934
BARROW	MIDDLETON MAIN	Coal	6Z8U	432	Beneath Property	4.4	East	132	1928
BARROW	MIDDLETON MAIN	Coal	6Y1C	433	South	4.8	North-East	132	1942
unnamed	MIDDLETON MAIN	Coal	6IAQ	441	East	1.1	North-East	137	1925
BARROW	SILKSTONE	Coal	6Y8C	473	South	3.8	East	90	1910
BARROW	SILKSTONE	Coal	6Z91	474	South-West	4.6	North-East	200	1909
BARROW	SILKSTONE	Coal	6Y5C	482	South	4.7	North-East	200	1909
unnamed	SILKSTONE	Coal	6IAT	484	East	5.2	North-East	86	1923
BARROW	SILKSTONE	Coal	6Z92	486	Beneath Property	4.8	North-East	96	1970
BARROW	SILKSTONE	Coal	5QI6	540	South	4.9	North-East	90	1919

### Probable unrecorded shallow workings

Yes.

### Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

### Mine entries

None recorded within 100 metres of the enquiry boundary.

### Abandoned mine plan catalogue numbers

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

NE1075	R294	NE873
CT70	13713	PO0
14372	NE662	

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

### Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
MELTONFIELD	Coal	Yes	Within	N/A	124

### 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
2.2	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.

### 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](mailto: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](mailto:groundstability@coal.gov.uk)**.

### Past underground coal mining

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

### Probable unrecorded shallow workings

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

### Spine roadways at shallow depth

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

### Mine entries

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

### Abandoned mine plan catalogue numbers

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

### Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

### Geological faults, fissures and breaklines

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

### **Opencast mines**

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

### **Coal Authority managed tips**

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

### **Site investigations**

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

### **Remediated sites**

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

### **Coal mining subsidence**

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

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

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

### **Mine gas**

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

### **Mine water treatment schemes**

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

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

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

### **Future underground mining**

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

### **Coal mining licensing**

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

### **Court orders**

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

### **Section 46 notices**

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

### **Withdrawal of support notices**

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




### **Payment to owners of former copyhold land**

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

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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 
- Outcrop (Conjectured) 
- Site investigations 

**How to contact us**  
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