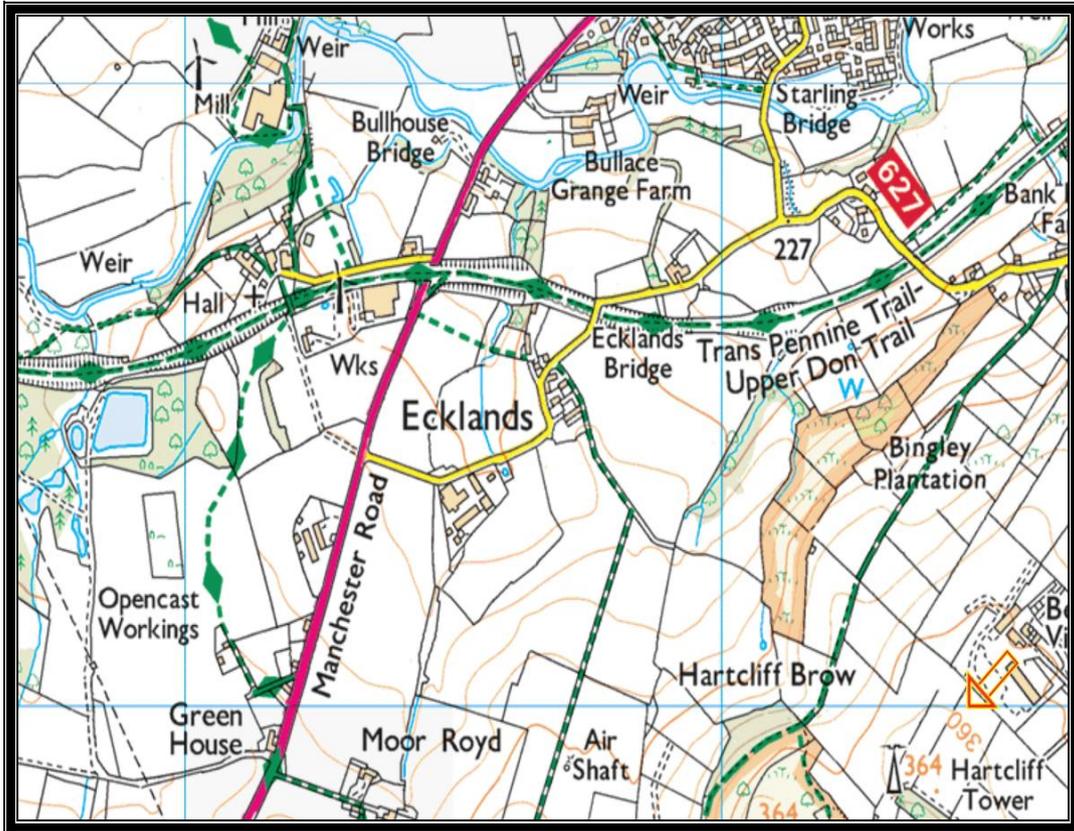


Report No: C765

Date: May 2025

**COAL MINING RISK ASSESSMENT**  
For land at  
**LILEY FARM, LILEY LANE, MILLHOUSE GREEN,  
SHEFFIELD, SOUTH YORKSHIRE, S36 9NG**



Prepared for  
**Marsdens Farms Ltd**

Prepared by  
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|                       |  |                       |       |
|-----------------------|--|-----------------------|-------|
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| <b>REPORT TYPE:</b>   | Coal Mining Risk Assessment  |                       |       |
| <b>REPORT DATE:</b>   | May 2025   |                       |       |
| <b>SITE:</b>          | Liley Farm, Liley Lane, Millhouse Green, Sheffield, South Yorkshire, S36 9NG |                       |       |
| <b>PREPARED FOR:</b>  | Marsdens Farms Ltd   |                       |       |
| <b>PREPARED BY:</b>   | G Swinbourne BSc. (Hons)<br>MSc. DIC, FGS                                    |                       |       |
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## **Introduction**

G&M Consulting Ltd (G&M) was instructed by Marsdens Farms Ltd to carry out a coal mining risk assessment (CMRA) for land at Liley Farm, Liley Lane, Millhouse Green, Sheffield, South Yorkshire, S36 9NG.

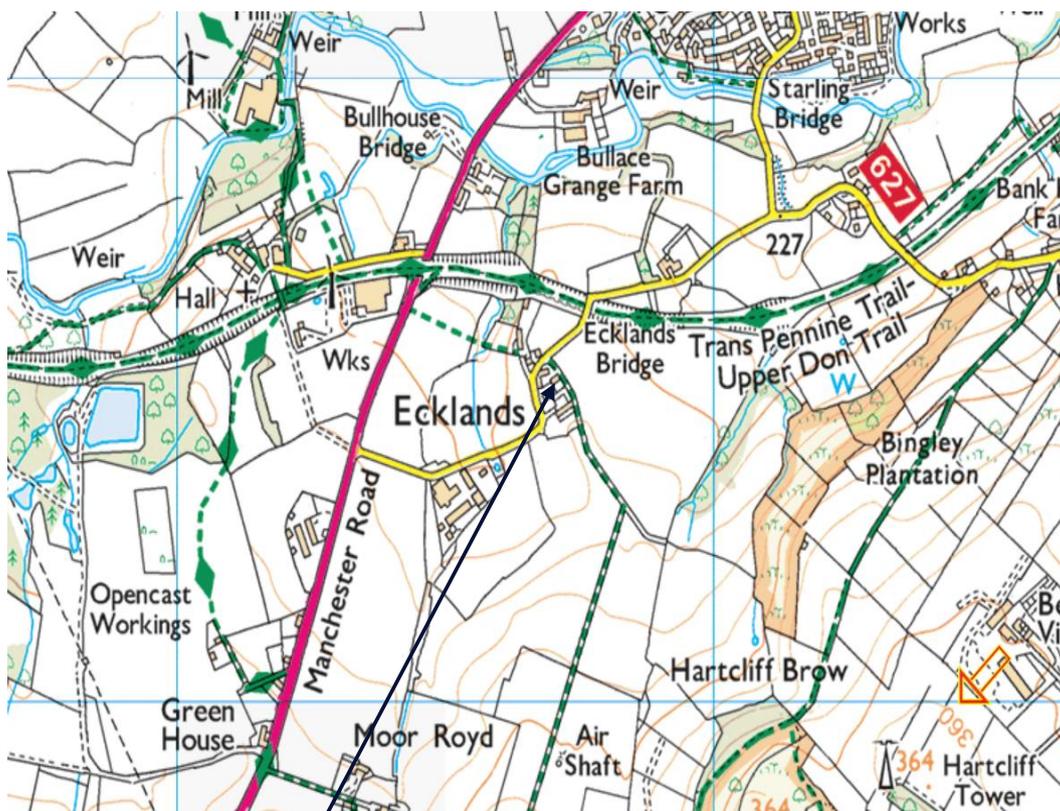
It is understood that a planning application is being prepared for the construction of two holiday let properties at the site.

A Coal Mining Risk Assessment is required for the proposals in order to competently address the mining legacy for the site and determine what impact this may have had upon the land. The assessment is intended to be included as a supporting document to a future planning application to the local authority.

## **Site Location and Description**

The site is on the southern and eastern side of Liley Lane approximately 850 m south west of the village of Millhouse Green. The approximate grid reference for the site is SE 216 025

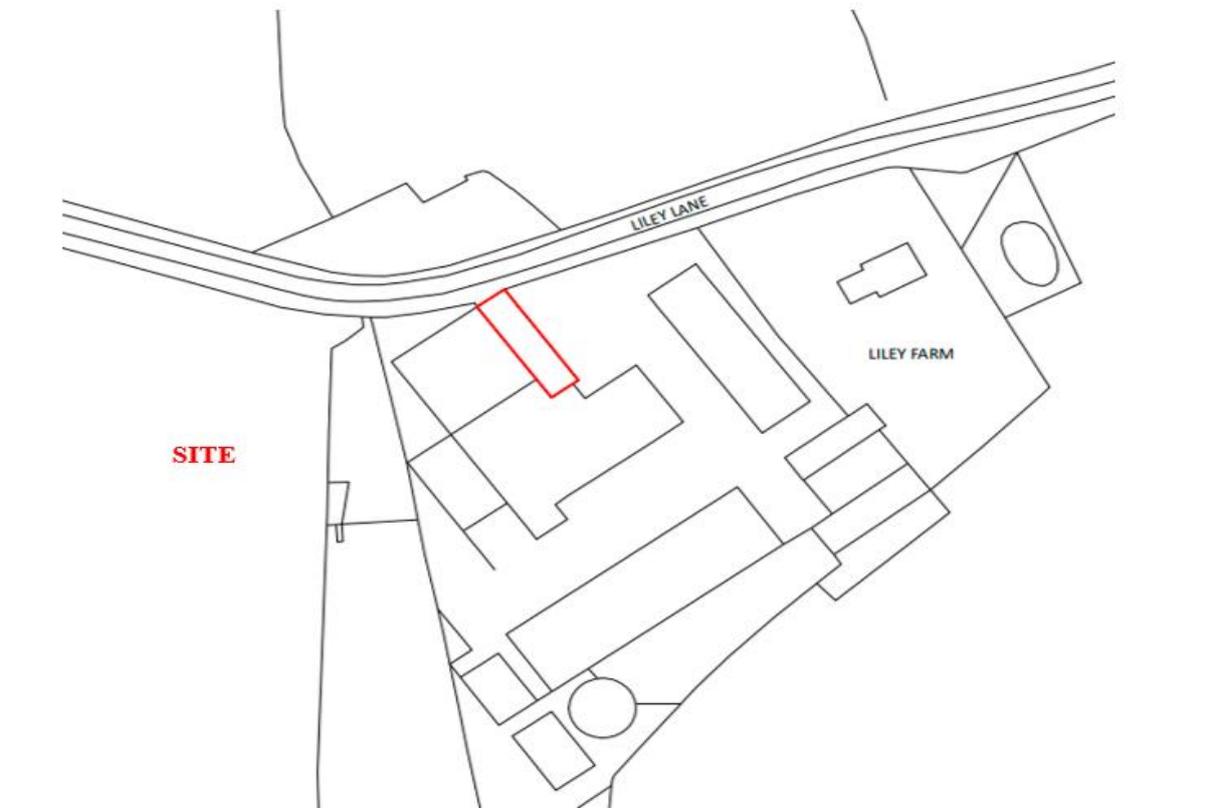
The site location is shown below.



**The Site**

**Figure 1**

The location of the proposed new holiday lets is shown below



### **Scope of the Coal Mining Risk Assessment**

This coal mining risk assessment is compiled in accordance with the guidance given in the Coal Authority publication *Risk Based Approach to Development Management Guidance for Developers Version 4 2017 (updated 2021)*.

This publication sets out the scope for a CMRA as follows:

- Present a desk-based review of all available information on coal mining issues which are relevant to the application site;
- Use that information to identify and assess the risks to the proposed development from coal mining legacy, including cumulative impact of issues;
- Set out appropriate mitigation measures to address coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development; and
- Demonstrate to the Local Planning Authority that the application site is, or can be made safe and stable to meet requirements of national planning policy with regard to development on unstable land.

### **Sources of Information**

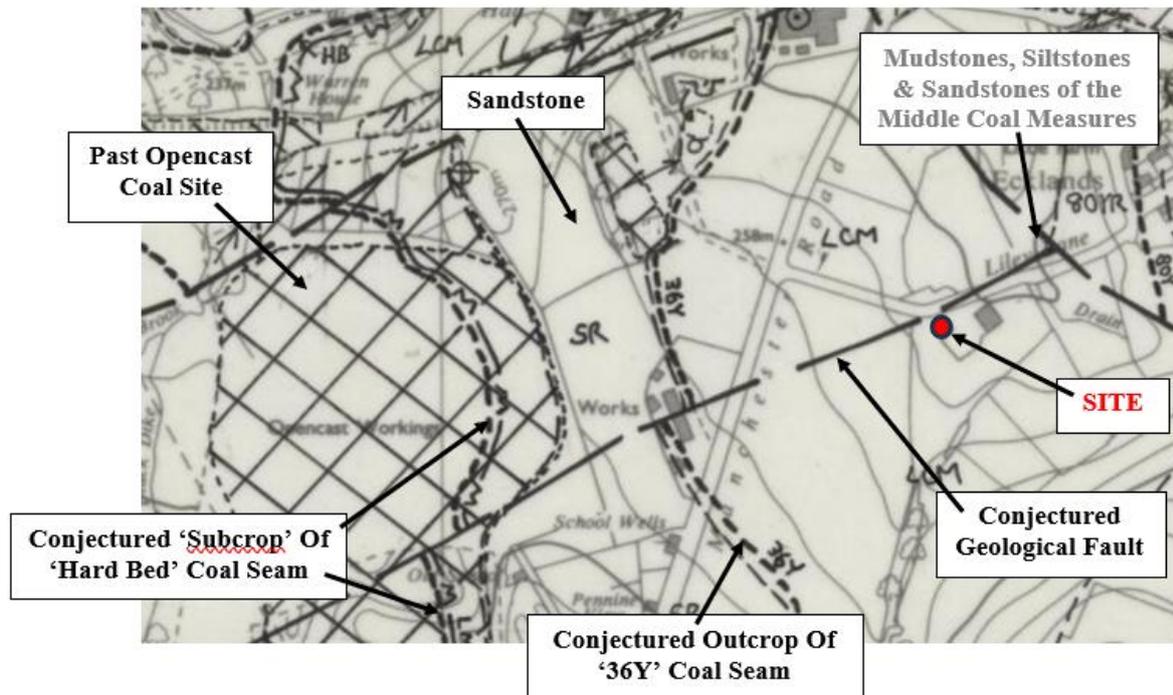
In compiling the CMRA information has been obtain from various sources, including the British Geological Survey (BGS):

- British Geological Survey Map Sheet SE20SW 1989 Edition
- British Geological Survey – Geology Of Britain Viewer
- Coal Authority Interactive Viewer and Mine Abandonment Plans
- Historical Mapping – old-maps.co.uk

## **Published Geology**

### **Surface Geology (inc. any superficial deposits)**

Records indicate the site to be located on mudstones, siltstones and sandstones of the Pennine Lower Coal Measure series from the Carboniferous formation. No superficial deposits are shown in the vicinity of the site. Strata are shown to dip towards the north-east in this vicinity at around 5° (1 in 12). A summary of the surface geology is illustrated on the image below which is an extract from the BGS SE20SW 1989 Edition:



### **Fault Planes or Fissures**

A geological fault is conjectured to pass close to the north of the site as indicated above, travelling roughly in a WSW to ENE direction; which throws the strata down by a few meters or so to the south. No fissuring is known in this vicinity and given the anticipated geology the likelihood of such is considered low.

### **Coal Seam Outcrops**

As shown above, the '36Y' coal seam is conjectured to outcrop some 260m away to the south-west which will dip beneath the site at around 20m deep should the conjectured detail be accurate (given the lay of the land combined with strata dip). Very little information is known about this coal seam which is not detailed in mining records in these parts; indicating that the coal is very likely to be of thin/inferior in nature.

The 'Hard Bed' coal seam, also known as the 'Halifax Hard' or 'Ganister' coal seam,

is shown to 'sub-crop' some 500m away to the south-west as indicated. The 'sub-crop' relates to the remaining unworked edge of the coal seam at the base of the former opencast workings as detailed below. Local historic mining details suggest that underground workings of this strata consisted in the region of 1m of coal along with around 0.4m of underlaying fireclay (ganister). The former 'Bullhouse Colliery' shafts, some 330m away to the NNE (north-north-east) recorded the Hard Bed at 56m deep at that location. Given the details, the Hard Bed seam is considered to be at a similar depth beneath this site; i.e. around 50m deep or so.

### **Made Ground/Opencast Coal Workings**

No made ground or former opencast coal sites are known within 150m of the site. The closest opencast site is shown on BGS records over 300m away to the west, which appears to relate to workings of the Hard Bed coal seam at that location; however, according to the Mining Remediation Authority's (MRA) information they do not show that area as a past opencast site; reflecting an element of uncertainty as to the BGS records.

### **Underground Coal Workings - Deep**

Deep coal mining (over 30m deep) has taken place beneath the site in the Hard Bed (Halifax Hard) coal seam from the former Bullhouse Colliery in the late 1800's at circa 50m deep. All settlement from which will be long complete and as no coalfields now exist, the site should remain stable from the deep coal mining perspective for the foreseeable future.

### **Underground Coal Workings - Shallow**

According to the MRA interactive viewer information the site lies in an area of 'probable shallow coal workings', although from the details mentioned above, it is unclear as to what coal seam this will relate to. The Hard Bed workings will be considered too deep to be of effect (from a void migration aspect), and it is considered very unlikely that any associated risks will be present in relation to the '36Y' seam, given its depth and anticipated inferior quality/thickness. A review of the former 'Oxpring Boring' borehole from 1919 some 6km away to the east shows that a coal seam known as the 'Hard Bed Band' seam, lies above the Hard Bed (Ganister) seam by 51m at that location. The borehole indicated a seam thickness of the Hard Bed Band as only around 0.25m, but it also details some 1.8m thickness of 'White Carr Clay' fireclay beneath the coal. As such, if this seam is at a similar distance above the Hard Bed (Ganister) seam beneath this site, then it would be expected very close or at the surface. Considering this a slight potential will be present for underground workings of this coal and fireclay which could compromise stability for the development if present.

### **Mine Entries**

No known mine entries are shown within the site or to 20m of its boundary. Given the geological and mining information only a slight risk will exist for discovering other mine entries of which there are no records. Grey circular areas of fill material within natural bedrock would be an indication of an old mine shaft for example.

### **Fugitive Gases**

As far as we are aware, no evidence of coal mining related fugitive gas emissions are known within 250m of the site. However, given the likely presence of faulted bedrock (to create a credible pathway), relatively shallow coal workings (50m deep) and slight

potential for a thin shallow coal seam, the potential for such should not be discounted.

**Coal Mining Risk Assessment  
(based on the above).**

| <b>Coal Seam / Coal Mining Issue</b>        | <b>Risk Assessment<br/>(VeryHigh/High/Moderate/Low/VeryLow)</b> |
|---|---|
| Underground coal mining (at shallow depths) | <b>Low to Moderate</b>  |
| Mine entries (shafts and adits)             | <b>Low</b>  |
| Geological faulting                         | <b>High</b>   |
| Geological fissures                         | <b>Moderate</b>   |
| Fugitive gas emissions                      | <b>Moderate to Low</b>  |
| Surface mining (opencast workings)          | <b>Low</b>  |
| Aggressive ground                           | <b>Low to Moderate</b>  |
| Coal exposed / near foundation level        | <b>Low to Moderate</b>  |

**Defined Risk Assessment  
(Where 'Underground Coal Mining' above = Very High to Moderate)**

|  |   |
|--|---|
| Extent of known underground mining in this/these shallow coal seam/s in the wider vicinity                                     | (Extensive / Much / Occasional / None Known)<br><b>Much to Occasional</b> |
| Intrusive Site Investigation of Coal Seam / Mines of Coal (given nature of proposals).   | (Required / Recommended / Unnecessary)**<br><b>Required</b>               |
| Advised critical depth beneath foundation/rock-head level to investigate considering geology and nature of the shallow coal/s* | <b>25m</b>  |

**Key:**

*\* The critical depth is calculated according to Ciria C758D guidance which details that for the land to be regarded as stable from any voided mineworkings, then a suitable section of competent rock cover above the workings should be proved that is equal or greater than ten times the 'in-tact' coal seam thickness. The advised critical depth to investigate to in this report takes into account the available geological information, any nearby mining records and may include a contingency for the seam to be of a slightly greater thickness than anticipated. Due care and diligence should be employed on-site to ensure that sound information is gathered of the in-tact seam thickness, particularly if concluding that old workings are outside the critical depth of affecting stability for the proposed development.*

\*\* Where :

|                    |  |
|--------------------|--|
| <b>Required</b>    | <i>Intrusive Site Investigation <b>required</b> of the shallow coal/s and/or mine entries to determine any necessary stabilisation works for the given development.</i>  |
| <b>Recommended</b> | <i>Intrusive Site investigation <b>recommended</b> – given a lower level of risk in relation to the nature of proposed development some proposals may reduce the risk to an acceptable level via suitable design considerations.</i> |
| <b>Unnecessary</b> | <i>Intrusive Site Investigation deemed <b>unnecessary</b> – given geological/mining information.</i>   |

### **Mining Remediation Authority**

Prior written permission from The Mining Remediation Authority is required for intrusive activities which will disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits). Further information on The Coal Authority's permissions process can be found at:

[www.coal.gov.uk/services/permissions/index.cfm](http://www.coal.gov.uk/services/permissions/index.cfm)

### **CONCLUSIONS**

- 1) The site can be regarded as stable from the **Deep Coal Mining** perspective, and as no coal fields now remain this position should continue for the foreseeable future.
- 2) Regarding the **Shallow Coal Mining** position, namely that the site is located in a MRA area of 'probable shallow coal workings', it would be prudent to undertake a limited number of water flush rotary boreholes to confirm that no shallow mining issues are present to affect stability. A minimum number of 3 boreholes to a maximum of 25m deep beneath rock-head would be considered adequate in the first instance; more may be required depending on the findings at the time of the investigation and to the advice of the appointed geotechnical/mining engineer. It should be noted that a permit from the Mining Remediation Authority would be required to facilitate any investigation of their interests – coal seams and/or mine entries.
- 3) A watching brief should be employed during future ground/foundation works for any signs of geological faulting or disturbed/weak bedrock. Foundations may need to be suitably strengthened/designed accordingly, and prior ground treatment works may be required in severe instances.
- 4) Any exposed coal in future excavation/foundation work should be removed and blinded off using a sulphur resistant concrete to help mitigate from

the risk of spontaneous combustion and chemical attack; with foundations sited on firm strata beneath the coal seam.

- 5) Given the relatively shallow coal workings, geological faulting and possible shallow coal, ground gas mitigation measures (such as a methane membrane for example; which could also address radon issues if required) would be a prudent consideration within future foundation designs - unless a period of gas monitoring proves that this is not required.
- 6) Although a low risk, a watching brief should be employed during any future grounds works for any signs of unrecorded mine entries; circular areas of grey fill within natural ground/bedrock would be an indication. If suspected the Coal Authority (as owners) should be notified immediately for appropriate deliberations.

**Notes:** should there be any uncertainty of actual conditions during future ground works, G&M Consulting or indeed the Mining Remediation Authority themselves can be further consulted for on site assessment if necessary. This assessment is based upon the current proposals – further assessments would be required should it change. This assessment does not consider other geo-environmental aspects such as contamination.

A suitably qualified and competent professional should be employed to use this report to determine the conditions on site, and ultimately advise on what action, if any, is necessary to safeguard the development. It should be noted that any future works to investigate any coal seam, mines of coal or associated mine entries will need the prior consent of the Mining Remediation Authority via their permitting procedure.