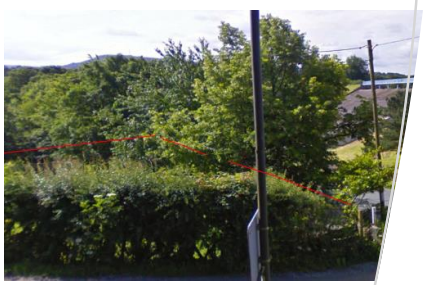


Earth Environmental
& Geotechnical

Coal Mining Risk Assessment

Reservoir Road

Whaley Bridge

June 2016

On behalf of

Mr. Grant Ford

Earth Environmental & Geotechnical Ltd
Houldsworth Mill Business & Arts Centre
Houldsworth Street
Stockport, SK5 6DA

Tel : 0161 9756088

Email info@earthenvironmental.co.uk
www.earthenvironmental.co.uk

RESERVOIR ROAD

WHALEY BRIDGE

COAL MINING RISK ASSESSMENT

FOR

MR. GRANT FORD

Earth Environmental & Geotechnical Ltd
Houldsworth Mill Business & Arts Centre
Houldsworth Street
Stockport
SK5 6DA
Tel 0161 9756088

Report No. A1484/G/1 **June 2016**

Report Title:	**Reservoir Road, Whaley Bridge Coal Mining Risk Assessment**
Report Reference:	**A1484/G/1**
Client:	**Mr. Grant Ford**
Issue Date:	**29th June 2016**
Drafted By:	**E Czarnecki**
Reviewed By:	**E Czarnecki**
Authorised By:	**A Czarnecki**

CONTENTS

APPENDICES

FIGURES

1.0 INTRODUCTION

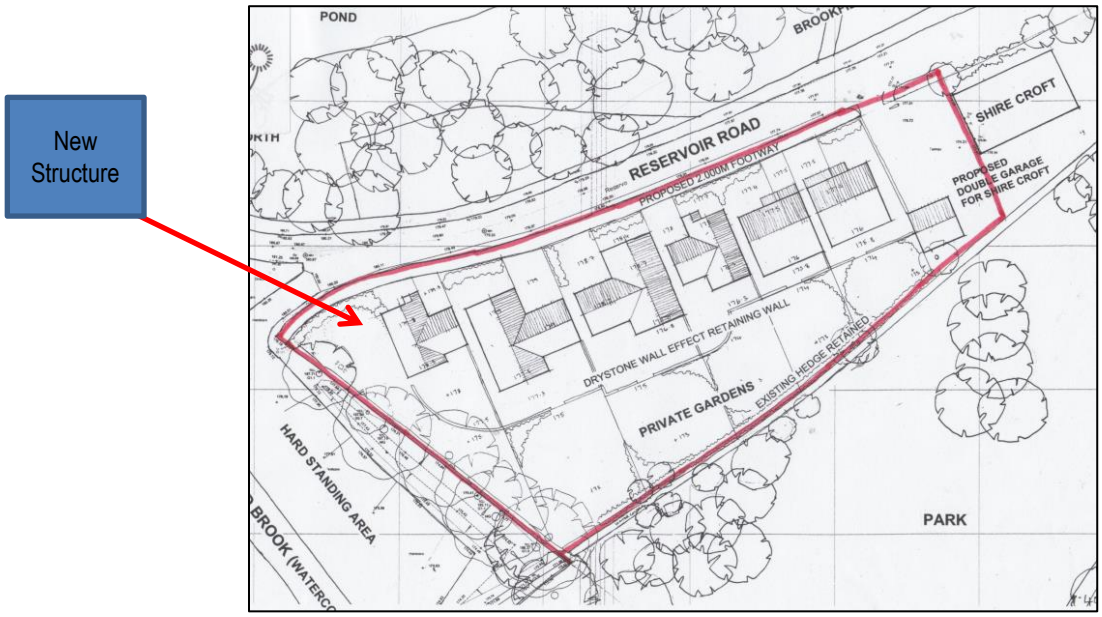
Appointment

1.1 Earth Environmental & Geotechnical Ltd was commissioned by Mr. Grant Ford (the client) to undertake a Coal Mining Risk Assessment for a proposed development at Reservoir Road, Whaley Bridge.

Proposed Development

1.2 The proposal is to erect six new residential dwellings with gardens and integral garages. Figure 1 (below) shows a development layout plan provided by the client.

Figure 1 Development Layout Plan



1.3 A Coal Mining Risk Assessment is required to support a planning application (A/13/7809) to High Peak Borough Council and to assist with the design process.

Objective

1.4 The purpose of the Coal Mining Risk Assessment is to collate available geological, mining and historical data in order to assess the potential for the site to be affected by underground mining. This report has been drafted in accordance with the Coal Authority Coal Mining Risk Assessment Template, January 2011.

Sources of Information

1.5 The Coal Mining Risk Assessment comprises of a review of the following information sources:

- Online British Geological Survey maps and data.
- Geological Survey of England & Wales, SK08SW, 1/10,560 scale, edition of 1965.
- Geological Survey of England & Wales Sheet 99 Chapel en le Frith, 1/50,000 scale.

- Coal Authority Consultants Mining Report, dated 29th June 2016.
- Coal Authority Interactive Map Viewer.
- British Geological Survey online borehole records.
- Google Earth imagery.
- Online Historical Ordnance Survey maps.

2.0 SITE LOCATION AND DESCRIPTION

2.1 The site is located within a residential area and the approximate National Grid Reference for the centre of the site is SK00852 81191, at postcode SK23 7BW.

2.2 The site is located approximately 400m north west of Whaley Bridge village centre and lies at an elevation of approximately 180-184mAOD.

2.3 The site is approximately 0.28ha and located to the south of Reservoir Road, approximately 300m from the junction with the A6.

2.4 The land has a regular gradient fall from the northern (Reservoir Road) boundary down to the south east boundary (Whaley Bridge Park) of approximately 4.5m. Reservoir Road is approximately 1.50m above the site, along the northern boundary.

2.5 A location plan showing the surrounding area is shown below as Figure 2, with a photograph of the site frontage as Figure 3.

Figure 2 Site Location Plan

2.6 It is understood that the site has previously not been developed and has been used for the husbandry of horses and chickens.

Figure 3 Site Photograph

3.0 ASSESSMENT OF DATA

Geological Information

3.1 The geology of the site has been determined from acquisition of geological maps for the area and examination of Coal Authority records.

3.2 The British Geological Survey (BGS) Sheet and online maps shows glacial drift Devensian deposits to be present on the site, with rocks of Pennine Lower Coal Measures Formation consisting of mudstone, siltstone and sandstone with coal seams, present from the surface.

3.3 An extract from the geological map is shown in Figure 4 and shows the inferred outcrop of the Red Ash coal seam (0.58m thick) on the south west boundary of the site.

Figure 4 Extract from Geological Map

3.4 The BGS boreholes database reveals an absence of information that could allow for further interpretation of the local geology and mining regime.

3.5 The geology map shows strata in the area dipping at an angle of inclination of ten degrees from the horizontal, with a dip direction to the east, implying that the Red Ash coal seam underlies the site at a shallow depth.

Coal Authority Records

3.6 A Coal Authority Mining Report has been acquired for the site and this reveals that there are workings below the site. The shallowest seam was at 63m depth (Bassey coal seam) which was last worked in 1900. The extracted thickness was 1.40m.

3.7 The site is also within an area where shallow unrecorded workings are present associated with the outcropping Upper Foot coal seam.

3.8 No damage notices, mine gas emissions, or opencast sites are recorded.

3.9 There are no mine shafts on site.

3.10 Examination of the Coal Authority online interactive map viewer shows that the site is within a Development High Risk Area, associated with shallow probable workings associated with a coal seam outcropping on the site.

3.11 Figure 5 shows an area in purple denoting probable shallow workings associated with an outcropping coal seam.

Figure 5 Extract from Coal Authority Online Interactive Viewer

Historical Records

3.12 Readily available historical maps have been reviewed. The first available map is of 1885, which shows a greenfield site throughout its history.

3.13 There has been very little change in the site since this time and no mining features are evident throughout the mapped history.

4.0 COAL MINING RISK ASSESSMENT

Scope of Coal Mining Risk Assessment

4.1 Objectives of the coal mining risk assessment are to provide a desk based assessment of available geological and mining information relating to the site (and wider area) and to use this information so as to identify risks present to the development from the legacy of mining.

4.2 As part of the risk assessment potential mitigation measures (if required) should be considered, including any necessary remedial works.

4.3 The outcome of the risk assessment should demonstrate to the Local Authority that the proposed development is, or can be made safe (and stable) to meet the requirements of the National Planning Policy Framework (NPPF).

Data Limitations

4.4 It should be appreciated that it did not become a legal requirement to deposit coal mining abandonment plans until the 1870's and that this requirement was not rigorously enforced for some time after. Many shallow coal seams were worked prior to the introduction of first edition Ordnance Survey Maps and information on these workings is often not available. Therefore if coal seams were accessible then invariably they could have been worked by formal or informal means.

4.5 It is also possible that if unrecorded workings are present then unrecorded mine entries may be present.

Coal Mining Risks

4.6 The risks associated with coal mining are as follows:

- Collapse of relict workings beneath buildings causing damage to the building fabric and infrastructure.

- Migration of mine gases from old mine works and mine entries resulting in build-up of flammable and asphyxiating gases in confined areas.

- Consolidation of relict workings and overlying strata causing structural defects in building fabric and infrastructure.

- Failure of mine entries causing loss of ground beneath building and external areas.

- Spontaneous combustion of old mineworkings.

Summary of Risk

4.7 There are no recorded shallow workings beneath the site. The site is located within a Development High Risk area, due to possible unrecorded shallow workings associated with an outcropping coal seam (Upper Foot).

4.8 No shafts or adits have been identified on the site.

Proposed Mitigation Strategy

4.9 As the site lies upon possible shallow unrecorded workings a coal mining investigation will be required at the location of the proposed new dwellings.

4.10 It would be prudent to drill four 20m deep rotary open hole boreholes in order to assess the potential for shallow workings and any associated voided strata.

4.11 The drilling of the boreholes will require a permit from the Coal Authority with the construction of a method statement and risk assessment.

Earth Environmental
& Geotechnical

APPENDIX 1

COAL AUTHORITY MINING REPORT

Earth Environmental
& Geotechnical

APPENDIX 2

REPORT LIMITATIONS

Earth Environmental & Geotechnical

REPORT LIMITATIONS

This contract was completed by Earth Environmental & Geotechnical Ltd on the basis of a defined programme and scope of works and terms and conditions agreed with the client. This report was compiled with all reasonable skill, and care, bearing in mind the project objectives, the agreed scope of works, the prevailing site conditions, the budget and staff resources allocated to the project.

Other than that expressly contained in the above paragraph, Earth Environmental & Geotechnical Ltd provides no other representation or warranty whether express or implied, is made in relation to the services. Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon, or transferred to, by any other party without the written agreement of a Director of Earth Environmental & Geotechnical Ltd.

If a third party relies on this report, it does so wholly at its own and sole risk and Earth Environmental & Geotechnical Ltd disclaims any liability to such parties.

It is Earth Environmental & Geotechnical Ltd understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was an important factor in determining the scope and level of the services. Should the purpose for which the report is used, or the proposed use of the site change, this report will no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without Earth Environmental & Geotechnical Ltd review and advice shall be at the client's sole and own risk.

The report was written in 2016 and should be read in light of any subsequent changes in legislation, statutory requirements and industry best practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of Earth Environmental & Geotechnical Ltd. In the absence of such written advice of Earth Environmental & Geotechnical Ltd, reliance on the report in the future shall be at the client's own and sole risk. Should Earth Environmental & Geotechnical Ltd be requested to review the report in the future, Earth Environmental & Geotechnical Ltd shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between Earth Environmental & Geotechnical Ltd and the client.

The observations and conclusions described in this report are based solely upon the services that were provided pursuant to the agreement between the client and Earth Environmental & Geotechnical Ltd. Earth Environmental & Geotechnical Ltd has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report.

Earth Environmental & Geotechnical Ltd is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, Earth Environmental & Geotechnical Ltd did not seek to evaluate the presence on or off the site of electromagnetic fields, lead paint, radon gas or other radioactive materials.

The services are based upon Earth Environmental & Geotechnical Ltd observations of existing physical conditions at the site gained from a walkover survey of the site together with Earth Environmental & Geotechnical Ltd interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst Earth Environmental & Geotechnical Ltd have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified.

No responsibility can be accepted for errors within third party items presented in this report. Further Earth Environmental & Geotechnical Ltd was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the services. Earth Environmental & Geotechnical Ltd is not liable for any inaccurate information, misrepresentation of data or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to Earth Environmental & Geotechnical Ltd and including the doing of any independent investigation of the information provided to Earth Environmental & Geotechnical Ltd save as otherwise provided in the terms of the contract between the client and Earth Environmental & Geotechnical Ltd.

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and Earth Environmental & Geotechnical Ltd] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.