



WESTCOUNTRY MINES  
& PROPERTY SURVEYS

MINING SUBSIDENCE CONSULTANTS

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A Report on a Site Investigation  
Carried out at:

Sarnia,  
Two Burrows,  
Blackwater,  
Truro.  
TR4 8HN.

N.G.Ref: SW 7366 4671

Ref: 64244A

Re-Assigned to:

Miss C Harrison & Mr G S Churchill  
And their Lender  
c/o Longwater  
Devoran Lane  
Devoran  
Truro  
Cornwall

Compiled by: N.A. Pettett BEng (Hons) A.C.S.

Engineering Geologist

June 2019

## **1.0 Purpose**

1.1 This Site Investigation in respect of historic metalliferous mining activity has been carried out by Westcountry Mines and Property Surveys at the request of the clients.

1.2 This report is confidential to the clients, and any other professional advisors acting for or on behalf of the clients, and is specific to the subject property only. This report cannot be used for any purpose other than to that intended.

1.3 The objective of this investigation was to determine whether the site had been affected by historic metalliferous mining activity on the indicated alignment of the lode structure recorded to pass through the northern part of the property and coincident with a recorded quarry at :

Sarnia,  
Two Burrows,  
Blackwater,  
Truro.  
TR4 8HN

## **2.0 Location, Geology and Mining Activity**

2.1 The property which comprises an approximately 6500m<sup>2</sup> site is situated in the hamlet of Two Burrows, to the north of the village of Blackwater, Cornwall, N.G.Ref: SW 6827 4335. Throughout this report the reader is referred to the maps, plans and drawings and photographs (Figures 1, 2 and 3).

2.2 The area covered by the investigation is currently uncultivated and is currently occupied with mature trees (ash and sweet chestnut) forming part of a garden area.

2.3 The property is recorded by the British Geological Survey to be situated on bedrock of the Porthtowan Formation comprising of metamudstones and metasandstones. This is a metamorphic rock formed approximately 372 to 393 million years ago in the Devonian Period. Originally sedimentary rocks formed in deep seas. Later altered by low-grade metamorphism.

2.4 The area around the property has been subject to some mineralization, principally in the form of sinuous inclined planar mineralised structures (lodes), which have been sporadically exploited for ores of tin and copper.

2.5 The property lies within the lease boundaries (Sett) of a mine named as Prince Coburg.

2.6 There is very little information and there are no available plans, detailing the extent of the underground workings in the area. However, a documentary mining search compiled by Cornwall Consultants Ltd (Their Ref.: HM/CMS/128128) plan helps to identify the known, indicated and suspected mining and geological features within this locality. Although there are no recorded shafts or workings within the boundaries of the site a district mining map (dated 1861) shows a mineralised structure (lode), plotted at an undefined datum, terminating

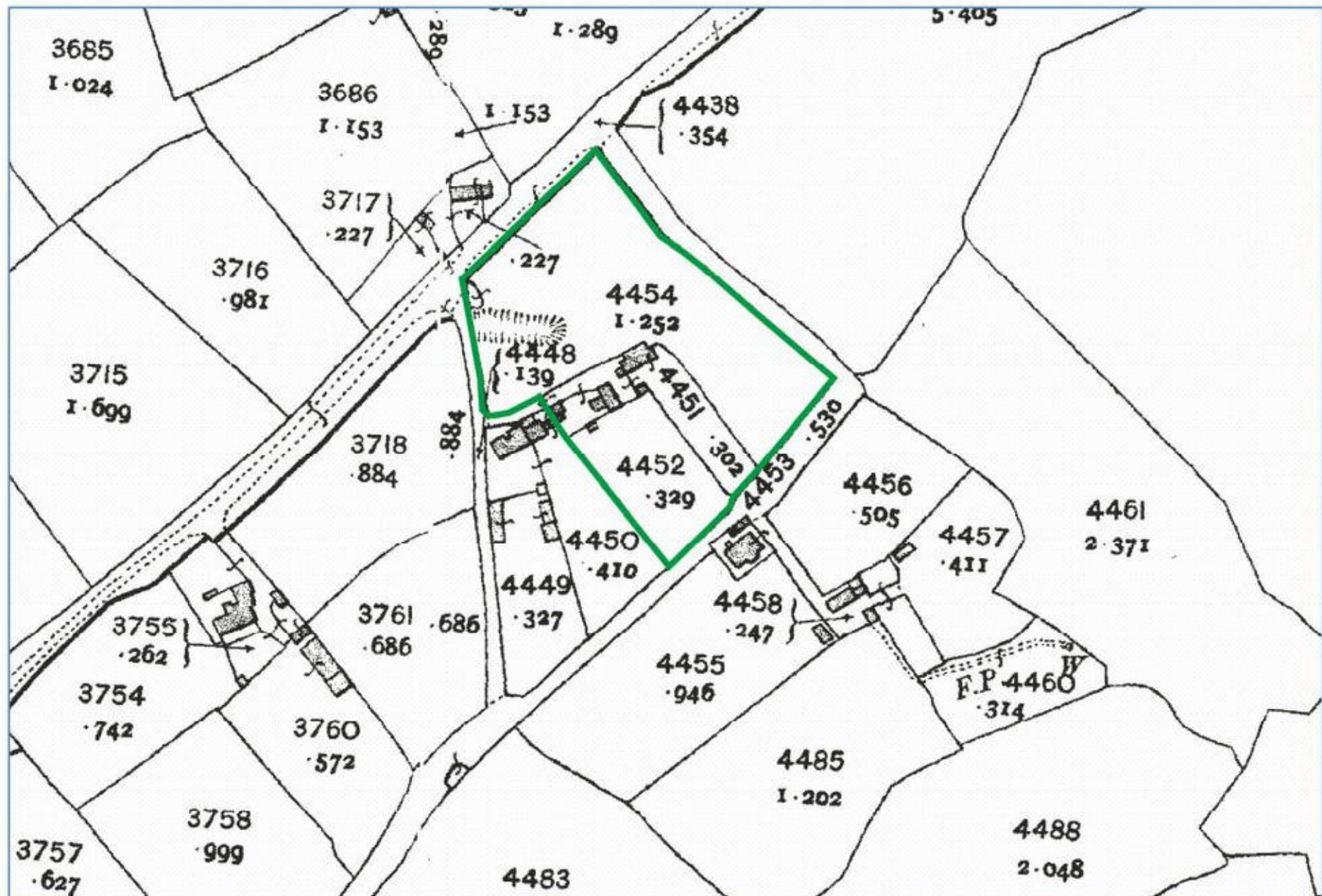


50m northeast of the property. A quarry is shown to lie within the northern part of the property on and 1866 map of the manor of Goonearl and in a slightly different position and orientation on the 1907 edition of the Ordnance Survey. The documentary report states that if the lode shown to terminate to the east continues on its indicated course it would pass close to, or through the quarry feature. In addition the search report shows that a shaft is suspected, by the author of the report to exist on the suspected continuation of the lode, adjacent to the western boundary of the property.



Extract from Map of Manor of Goonearl 1866, showing property (edged in green) and quarry within area annotated as 655.





Extract from Ordnance Survey (published scale 1:2500) 1907, showing property (edged in green) and quarry in northwest of field No. 4454.

### 3.0 Investigation

3.1 The Investigation, which involved the excavation of two linear trenches, totalling 32m, was carried out on 24<sup>th</sup> and 25<sup>th</sup> June 2019. The investigation was designed to provide optimum coverage within the allocated time, to confirm the presence, or absence, of the inferred lode structure and determine whether the quarry feature represents surface mining features or a former stone quarry, access was limited due to the presence of mature trees.

3.2 Two linear trenches were excavated, designed to provide maximum coverage for the anticipated lode alignments, within the less densely vegetated area, in the central part of the site. The trenches were excavated with a tracked 360° excavator. After excavation the trenches were backfilled with the available arisings. The superficial surface horizons were stripped from the area in which the suspected shaft was indicated, to expose stony clays (subsoil).

3.3 Trench 1 was excavated from north to south, through the centre of the site to locate any mineralised structures in this part of the property and to confirm the approximate width and depth of the quarry.

3.4 Trench 2 was dug from west to east to determine the limits of the quarry to the east.

3.5 The site plan is shown as Figure 2 and on this are shown the trench locations, area stripped to subsoil and any encountered features.

#### **4.0 Results**

4.1 The trenches confirmed that the investigated area is situated on brown stony clays with cobbles of sedimentary bedrock (fill) in turn overlain by thin organic-rich soil, underlain by fractured weathered slates and shales.

4.2 The quarry was confirmed to have been backfilled with loose unconsolidated cobbles of slates and shale (metasediments) with interstitial pink/buff clays and was approximately 24m wide (slightly larger than indicated). No material considered to have the attributes of metalliferous mine waste was encountered in any of the excavations or in the superficial horizons stripped from the area suspected to contain the suspected shaft. A solid base in fresh metasedimentary rock was observed across the quarry at depths between 4.0m and 5.0m below surface, however it was not deemed safe or practical to log the precise depths achieved, due to the constant spalling away off the unconsolidated fill, resulting in hazardous undercutting of the trench sides.

4.3 No lode structures, minewaste or any other evidence considered likely to indicate the presence, or proximity of any metalliferous mining activity were encountered in the trench, or observed in the areas not accessible to the excavator. No evidence was observed to suggest the presence of the suspected shaft.

#### **5.0 Conclusions and Recommendations**

5.1 Based on the results of this investigation, observations made on-site and the information provided by the available documentary evidence we believe the risk presented to the site, by historic metalliferous mining activity are slight.

5.2 Although no evidence or indications to suggest the proximity of any mining related features was observed, or suspected, it is possible that features may be present, particularly in the areas currently occupied by dense undergrowth. Should any features (such as anomalous areas of fill or made ground), which may be indicative of historic metalliferous mining activity, be encountered during future site works then these should be inspected by a suitably qualified and experienced person, to quantify any risks presented to future developments. In addition it would be prudent to have any footings or foundation trenches inspected by a Mining Consultant to ensure that no adverse ground conditions likely to relate to historic mining activity are present.

## **6.0 Limitations**

This report is in respect of mining related activity it does not constitute a geotechnical assessment. The investigated area is delineated as the area covered by the trenches. Information obtained from the trenches is used to infer the likely ground conditions between them and Westcountry Mines & Property Surveys cannot be held responsible for any anomalous features which could not, reasonably have been anticipated or inferred from the available data. This report is confidential to the clients, the Mortgage provider and other professional advisors acting for or on behalf of the clients, and is specific to the subject property only. This report cannot be used for any purpose other than to that intended.

**Yours faithfully,**



**WESTCOUNTRY MINES & PROPERTY SURVEYS**