ARCHERITAGE

ENGINE LANE, SHAFTON TWO-GATES, BARNSLEY, SOUTH YORKSHIRE

EVALUATION REPORT

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ARCHERITAGE

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CONTENTS

Figures

Plates

Abbreviations

YAT York Archaeological Trust

AOD Above Ordnance Datum

ABSTRACT

In December 2009 YAT undertook a series of trial trenches as part of an archaeological mitigation strategy at an 8 hectare development site at Shafton Two-Gates, 10km NE of Barnsley. A total of 25 trenches were opened up by machine which were located following the results of a geophysical survey. The survey backed up by previous work in the area had suggested that Iron Age/Romano British features as well as ridge and furrow and possible archaeological remains of an unknown nature survived within the project area.

The results did not reveal any prehistoric remains but proved the existence of ridge and furrow where it cut into the natural. Sufficient ridge and furrow was shown to exist to confirm the existence of the remainder although it was not readily identifiable within the soil overburden. In addition a bell pit and two areas of burning of an unknown date were revealed.

The work showed that the known prehistoric occupation to north of the site did not extend into the project area and that the bulk of anomalies identified in the geophysical survey could be accounted for by ridge and furrow and variations in the natural clay and bedrock.

1. INTRODUCTION

Between 25th November and 3rd December 2009, YAT excavated a series of evaluation trenches at Shafton Two-Gates some 10km NE of Barnsley. The project was the second stage of a scheme of archaeological investigation being a condition of a planning consent (Appl. No. 2007/0822) for the development of a new secondary school. It was commissioned by GL Hearn Ltd on behalf of their client Barnsley MBC. The project was based on a project design and Written Scheme of Investigation (WSI) originally drawn up by ARCUS (ARCUS 2008, 2009).

The first stage of the evaluation was a geophysical survey carried out in March 2009 (Whittingham 2009) which had identified a series of anomalies across the project area (Figure 2). These anomalies were investigated by trial trenching in order to determine the extent, condition, character, importance and date of any archaeological remains present; to provide information that would enable any remains to be placed within their local, regional, and national context and for an assessment of the significance of the archaeology of the development area to be made to in order to inform the local authority as to the requirement for further archaeological mitigation for the site.

The area of the geophysical work did not cover the whole of the project area as there had been livestock in the north eastern part which precluded survey. Consequently five trenches were randomly located across this blank area. Three of these trenches were subsequently re-located from their original location due to site conditions. Trench 5 was moved 5m eastwards to avoid a water pipe, Trench 6 was moved 20m to avoid overhead power lines and trench 9 was moved 10m westwards to avoid the fence line around the farm buildings. Two of the proposed trenches were not excavated, namely 23 where the anomaly was found to be caused by a modern drain visible on the surface and 17 where the whole area had been previously excavated for a settling tank. The northern part of the wider development area was excluded from the geophysical survey and subsequent trial work, having already been assessed through an earlier phase of investigative work in 2003 (ASWYAS 2003).

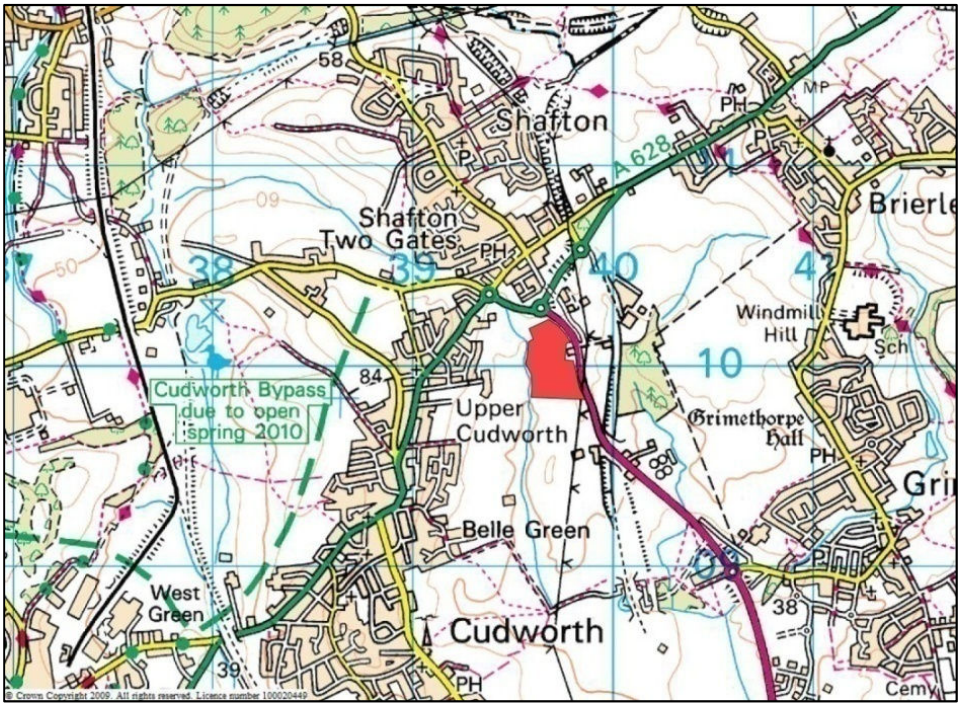

Figure 1 Site location

2. METHODOLOGY

A series of 25 trial trenches were excavated over a sample of the anomalies identified in the geophysical survey in order to test the nature of the anomalies and confirm the presence of any archaeological remains and to fulfil the aims of the evaluation. There were 23 trenches measuring 20m x 2m, one L shape trench 20m x 2m and 15m x 2m and one trench measuring 10m x 5m. Each trench was dug by a mechanical excavator using a toothless ditching bucket under the direct supervision of an archaeologist. The trenches were dug in spits and the spoil stored at the side of the trench for subsequent backfilling.

All significant archaeological features which were identified were recorded using standardised pro forma record sheets. Plans and sections were drawn as appropriate and a comprehensive photographic record was made. In all trenches including where no archaeological features were identified, a sample 1m stretch of the section was recorded and the excavation photographed.

The site archive is currently kept at YAT in York and will be deposited with Doncaster Museum (Accession code xxxx) in the near future.

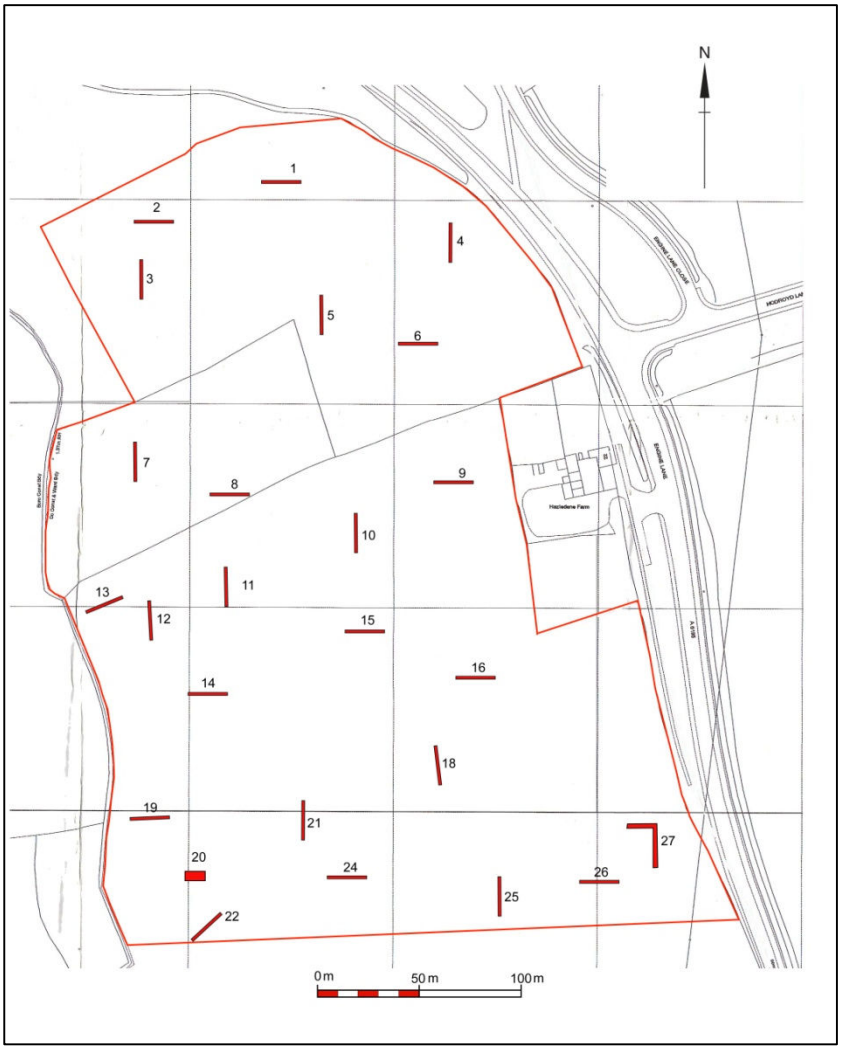

Figure 2 Location of trenches

3. LOCATION, GEOLOGY AND TOPOGRAPHY

The site is located at Shafton Two-Gates, between the settlements of Shafton and Cudworth, to the north-east of Barnsley. The site is centred on SE 395 102. It occupies pasture land to the immediate west of Hazledene Farm; the ground cover is grass used for grazing. The

development site consists of an area of approximately 11 hectares of which some 8.4 hectares was subject to this evaluation.

The underlying geology consists of sandstones, shales and mudstones of the Middle Coal Measures which dip generally in an easterly direction. The Mexborough Rock Sandstone is also indicated in the western part of the site. The sandstones may be fissured both naturally and mining induced. Sealing the bedrock is a deposit of clay. An outcrop of Highgate Coal Seam is conjectured to run N-S through the centre of the area (SYMAS 2005).

The site as a whole is situated towards the head of a valley (around the 65 metre contour) with the settlement of Shafton Two-Gates standing above it to the north on the 80 metre contour. Within the project area the land is undulating and is dominated by a N-S ridge which runs through the centre of the area. To the west of this the land falls away sharply to a small water course, whilst to the east the land falls away gently before rising towards the A 6195.

4. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

4.1 THE HISTORICAL BACKGROUND

4.1.1 PREHISTORIC TO ROMAN

No early prehistoric sites have been recorded within 1km of the project area, although worked flints of Mesolithic (8,300-4,000 BC), Neolithic (4,000-2,300 BC) and Bronze Age (2,300-700 BC) date have been found further afield, around Brierley and Grimethorpe (*c*.SE 418 101). Shafton lies within an area where sporadic traces of a widespread system of land subdivision have been recorded as crop marks through aerial reconnaissance. This landscape in general appears to consist of rectilinear fields defined by ditches, with track ways interspersed by dispersed settlement enclosures which appear to have originated in the Iron Age (700 BC-43 AD) and continued in existence throughout the Romano-British period (43-450 AD).

4.1.2 MEDIEVAL

The first recorded mention of Shafton is in the Domesday survey of 1086, the name *Sceptun* probably deriving from the terms *seaft* and *tun* meaning a farmstead marked by a pole or made of poles (Smith 1961, 272-3). The medieval core of the village was located to the north of Shafton Two-Gates, and the project area is likely to have been part of the fields associated with settlement during this period. A map of the manor of 1597 suggests the fields were part of the medieval open field.

The 1597 plan also showed a cluster of primitive coal mines known as bell pits to the north of the project area. This, together with the name Coal Pit Field, indicates that small-scale coal mining was being carried out in the area from at least the late-sixteenth century. Bell pits were shallow mines on coal outcrops, with a shaft dug down from the surface to the seam and coal excavated, forming a bell-shaped chamber. This form of mining was used in the medieval and early post-medieval periods, and did not require drainage or pumping systems.

4.1.3 POST-MEDIEVAL

The crossroads known as Shafton Two-Gates was first recorded in 1771, the term 'Gate' referring to the streets or a toll bar. The adjacent farm was known as Two-Gates Farm. Engine Lane, also known as Ferrymoor Lane in 1841, was named for an engine used to pump water from a late-eighteenth-century mine further to the southeast in the Grimethorpe area.

Both Two-Gates Farm and Hazledene Farm were shown on Jeffery's 1775 map of Yorkshire. Hazledene Farm was enlarged by 1893 and subsequently substantially altered although late-nineteenth-century and earlier features still survive.

The 1841 tithe map (Fig 4) and the 1854 OS map (Fig 5) show Shafton as a small village at the northern end of Shafton Lane. The only buildings in the vicinity of the project area were Hazledene Farm, and a farmhouse and toll-house and bar, close to the cross-roads of Pontefract Road with Ferrymoor Lane/Engine Lane. An old sandstone quarry was shown to the north of the proposal area, on the site of the former coal pits. Shafton Colliery was located to the northeast of the proposal area, north of Pontefract Road. A short lived brick works existed to the west of the area in late 19th century. The brick industry is closely related to the coal industry in this area, with brick-making clays found in amongst the coal seams. The maps although show the field pattern as being typical of an 18th century enclosure landscape superimposed on an earlier arrangement. The fields are mostly long and narrow and lay perpendicular to Engine Lane which ran along a ridge. Those closest to the Shafton settlement are smaller suggestive of medieval strip fields whose existence may have influenced the later arrangement.

4.2 PREVIOUS ARCHAEOLOGICAL WORK

This has been little work in the area prior to the latter part of the 20th century. Evaluation and excavation to the northwest of the proposed development site in 1999 uncovered a sub-rectangular enclosure with subdivisions and hearths and evidence of settlement including a probable round house (Howell 1999, Burgess 2002). This was dated to the late-first-/early-second-century AD.

Further evaluation work prior to the construction of the Shafton bypass in 2001 included the part excavation of a D-shaped enclosure, first noted as a crop mark. Evidence showed that it was in use in the Iron Age through to the early Roman period. A possible post-hole structure and a heat-affected, clay lined pit were found within the enclosure suggesting that at least part of it was used for settlement. No evidence of crop processing was found, despite relatively good preservation of environmental remains, but the enclosure may initially have been used for stock control. Small amounts of hammerscale were also found, suggesting that industrial processes may have taken place in the vicinity (ASWYAS 2003).

A geophysical survey and evaluation trenches were carried out to the north of the project area, which included the northern end of the development site. This revealed small, shallow gullies and several shallow, irregular pits. All the features appear to have been truncated by later agricultural activity. Whilst there was absolute dating evidence comparison with similar sites suggest that they were field ditches associated with the Iron Age/Romano-British land divisions.

The 2001 evaluation trenches also uncovered a bell pit which had a sherd of late-seventeenth-/early-eighteenth-century pottery in the upper backfill.

4.3 RESULTS OF THE STAGE TWO GEOPHYSICAL SURVEY

The results of the geophysical survey showed a strongly variable background magnetism, which may be caused by variable geology/pedology or modern magnetic material in the soil. It is particularly strong in the northern part of the survey area which may be dumped material associated with mining activity. This strongly variable background, coupled with agricultural anomalies and several large areas of disturbed response associated with modern features and possible tipped/infill material made reliable identification of archaeological features across much of the site difficult.

The route of a pipe(s) has been identified and this strongly magnetic feature, as well as an electricity pylon and several areas of disturbed magnetic response, have all produced interference which may mask archaeological features in their vicinity.

There are two different phases of agricultural activity present, one of which is suggestive of ridge and furrow.

There are several linear trends in the data. These are not consistent or strong enough to reliably interpret as definite features. It is possible that they could be caused by archaeological features but could also be caused by agricultural anomalies or be associated with the background noise.

There are a large number of positive isolated responses present throughout the survey area. The majority of these are probably caused by geological variations or by material in the plough soil / subsoil. However, this type of anomaly can also be caused by archaeological features and so an archaeological origin should not be ruled out, particularly where such anomalies are in proximity to, or are associated with, probable or possible archaeological features.

A number of linear anomalies are present which suggest that there may have been field enclosures across within the site. Several of these are on the same alignment as the ridge and furrow and it is possible that some of the anomalies could be associated with agricultural features, rather than in filled ditches. It is also possible that some of the anomalies which have been interpreted as agricultural may be archaeological in origin. There are several linear / curvi-linear anomalies which are strongly suggestive or archaeological features.

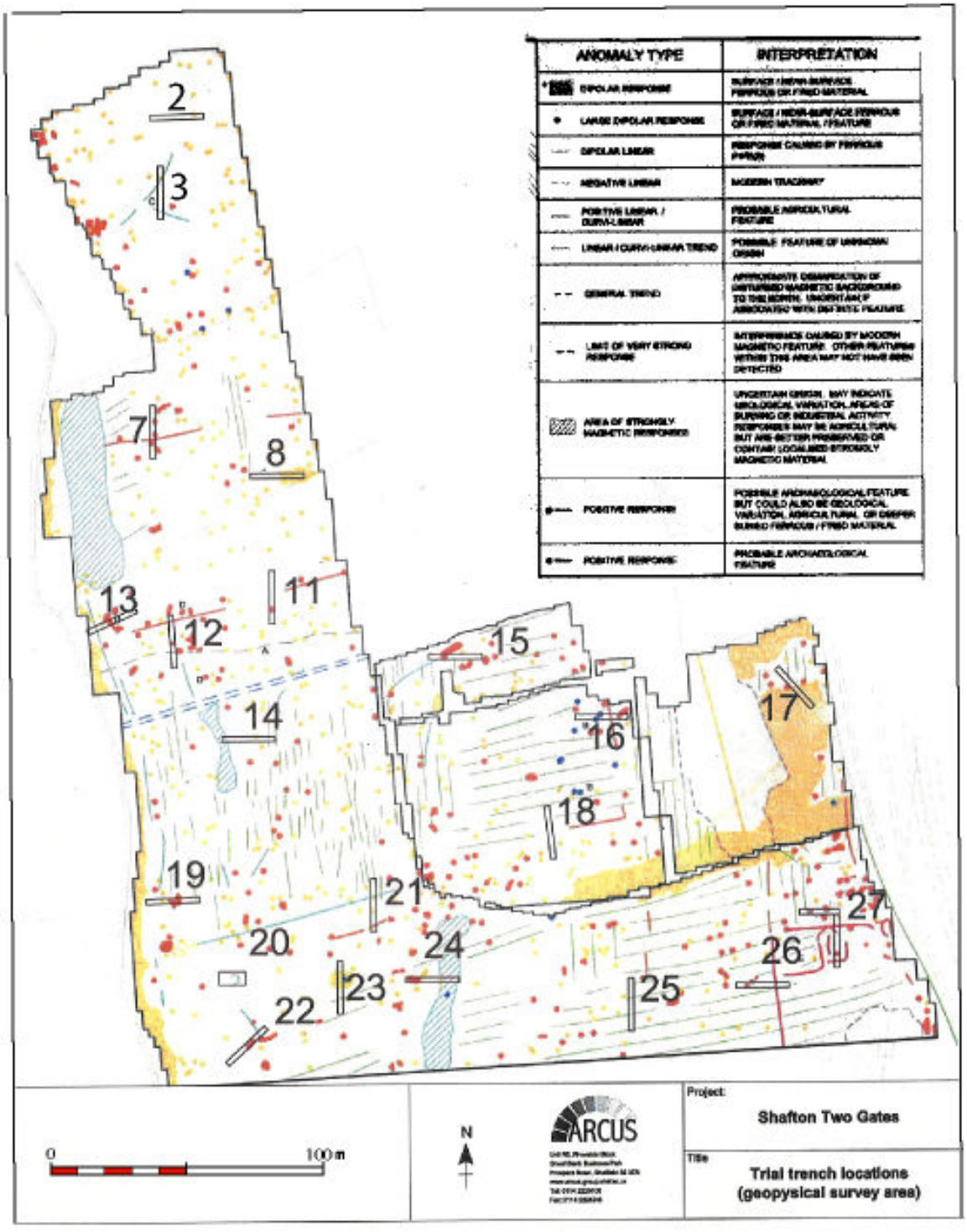

Figure 3 Geophysical survey

5. RESULTS

5.1 SUMMARY

Archaeological features were present in Trenches 4, 10, 13, 22, 25, 26 and 27. These included traces of burning directly above the natural, ridge and furrow, a bell-pit and a dump of colliery waste, possible field drains, a field boundary ditch, a modern rubbish pit and a pit for the disposal of night-soil. A few modern pottery sherds were present within the plough-soil; none of which were retained.

The underlying natural deposits were variable across the site. Outcropping bedrock was seen in seven trenches (8, 14, 16, 18, 19 and 27) which, in all bar one, was capped by naturally occurring clay, silty-clay or clayey-silt. The exception was Trench 11 where the laminated shale bedrock lay directly beneath the plough-soil, the natural clays having been eroded away. Where exposed the bedrock was shale in varying stages of degradation. In Trench 27 the shale was mixed with laminates of coal.

In the remaining trenches excavation stopped at the natural clays. These varied in colour from pale yellow, to mid yellow-brown, to white-pale grey, and in composition from clay to yellow-brown silty-clay to sandy-clay.

The uppermost deposit seen in all of the trenches was a build-up of plough-soil of between 0.19-0.40m in thickness. The plough-soil was variable across the site being silty-clay, sandy-silt or clayey-silt reflecting the underlying geology. The plough-soils lay directly above naturally occurring deposits with no discernable build-up of sub-soils between the plough-soil and the natural.

The entire area of the archaeological evaluation was in use as pasture at the time of the archaeological evaluation and the grass-roots from the pasture penetrated up to 0.10m into the underlying deposits. There was no discernable difference in the soil matrix between the grass-roots and the underlying plough-soil deposits.

5.2 TRENCH DETAILS

5.2.1 TRENCH 1

This trench was 20 x 2m in size and was aligned east-west in the northern portion of the site on ground which sloped very slightly downwards towards the west. The ground level at the north-western corner of the trench was 67.72m AOD and at the north-eastern corner of the trench was 68.38m AOD. This trench was in the area not included in the geophysical survey.

The earliest deposit was natural light yellow-brown clay (Context 101), which was sealed by a build-up of plough soil up to 0.25m thick (Context 100) comprising moderately compact dark brown silty-clay, from which two sherds of late 19th-20th century blue and white transfer print ware pottery were recovered.

5.2.2 TRENCH 2

This trench was 20 x 2m in size and was the most north-westerly trench excavated. It was located on the western slope of a ridge sloping downwards from north to south. The trench was aligned east-west. The ground level at the north-western corner of the trench was 66.29m AOD and at the north-eastern corner of the trench, which was at the crest of the ridge, was at 68.14m AOD. This trench was excavated to investigate an area which was devoid of features on the geophysical survey.

The natural comprised mid yellow-brown slightly silty-clay (Context 201). The uppermost deposit (Context 200) sealing the natural was a plough-soil up to 0.28m thick consisting of moderately compact dark brown silty-clay, with occasional flecks of coal/charcoal. Two sherds of late 19th-20th century blue and white transfer print ware pottery.

The deposits excavated within the trench confirmed the picture seen by the geophysical survey, namely of a 'blank' area.

5.2.3 TRENCH 3

This trench was located in the north-western corner of the site, was aligned north-south and was 20 x 2m in size. It was located on a north-south aligned ridge almost parallel to, but slightly west of the brow of the ridge. The ground level at the north-western corner of the trench was 65.23m AOD and at the south-western corner of the trench was 64.33m AOD. The trench was excavated to investigate two linear anomalies seen on the geophysical survey the northernmost of which was located at the northern end of the trench and was aligned north-east to south-west, while the southernmost anomaly was aligned north-west to south-east and was located at the southern end of the trench.

The natural was a light yellow-brown slightly silty-clay (Context 301). This was beneath a build-up of plough-soil (Context 300) up to 0.3m thick, comprising moderately compact dark brown silty-clay with occasional flecks of coal/charcoal.

No features were seen within this trench which could be identified as the cause of the linear anomalies seen in the geophysical survey.

5.2.4 TRENCH 4

This trench, in the north-eastern portion of the site, was 20 x 2m in size and was aligned north-south on land which sloped slightly downwards towards the south-west. The ground level at the north-western corner of the trench was 67.35m AOD and at the south-western corner of the trench was 66.45m AOD. This trench was in the area not subject to the geophysical survey.

Natural mid-light yellow-brown clay (Context 401), was truncated by a linear cut (Context 403) aligned east-west across the trench, which was 0.4m wide and 0.12m deep. This was backfilled with mid brown silty-sandy-clay with patches of yellow sand (Context 402) which contained a modern broken glass bottle base. This cut was aligned with a field boundary to the south-east which is shown on earlier maps of the area and therefore is the remains of a field boundary ditch of modern date. The plough-soil sealing the natural was a 0.3m thick build-up of friable dark brown sandy-silt with occasional small stones (Context 400).

5.2.5 TRENCH 5

This trench, located in the northern portion of the site, was 20 x 2m in size and was aligned north-south on broadly even ground within a slight hollow between a north-south aligned ridge to the west and a second ridge curving around the northern and eastern sides of the site. The ground level at the north-western corner of the trench was 65.25m AOD and at the south-western corner of the trench was 64.49m AOD. This trench was in the area not subjected to geophysical survey.

Light yellow-brown natural clay (Context 501) was sealed by a 0.25m thick build-up of plough-soil comprising moderately compact dark brown silty-clay with occasional flecks of coal/charcoal (Context 500).

5.2.6 TRENCH 6

Trench 6 was moved 20m north of its intended position to avoid overhead cables. The trench was 20 x 2m in size, and was aligned east-west on level ground within a slight hollow with ridges to the west and north-east. The ground level at the north-western corner of the trench was 65.09m AOD and at the north-eastern corner of the trench was 64.91m AOD. This trench was in the area not subject to the geophysical survey.

Natural consisted of pale yellow-brown clay with occasional patches of pale grey-white clay (Context 601). It was beneath moderately compact dark brown slightly silty-clay (Context 600) which represented a build-up of plough-soil up to 0.22m thick.

5.2.7 TRENCH 7

This trench, close to the western limits of the site, was 20 x 2m in size and was aligned north-south on the western slopes of a north-south aligned ridge. The ground level at the north-western corner of the trench was 61.57m AOD and at the south-western corner of the trench was 60.78m AOD. Trench 7 was excavated to investigate a possible linear feature aligned almost east-west located in the central portion of the trench and several isolated readings of higher magnetism which had shown up on the geophysical survey.

The natural in this trench was variable comprising yellow-orange sandy clay with patches of yellow clay with occasional small stones (Context 700), there was a band of slightly darker mid-brown clay aligned east-west across the central portion of the trench. The overlying plough-soil was friable dark brown sandy-silt with occasional small stones up to 0.3m thick (Context 701).

The linear anomaly seems to have been caused by a variation within the underlying natural. The areas of higher magnetism were probably also caused by variations in the natural since no archaeological features were present to account for these readings.

5.2.8 TRENCH 8

This trench was 20 x 2m in size, and was aligned east-west on the brow of a north-south aligned ridge that sloped gently downwards towards the south; the ground level at the north-western corner of the trench was 63.27m AOD and at the north-eastern corner of the trench was 63.01m AOD. Trench 8 was excavated to investigate an area of dipolar response on the geophysical survey indicating fired material close to the surface; the dipolar response was seen over the easternmost third of the trench. .

An outcrop of degraded shale bedrock with almost horizontal bedding planes (Context 802) was visible over the westernmost 8m of the trench (Plate 3). In the eastern portion of the trench the bedrock was beneath a deposit of natural mid-light yellow-brown slightly silty-clay (Context 801). The plough-soil (Context 800) was located directly above bedrock over the western portion of the trench and above Context 801 in the eastern portion of the trench. Context 800 was up to 0.3m thick and was friable dark brown silty-clay with occasional flecks of coal/charcoal and a sherd of late 19th-20th century blue and white transfer print ware.

Although no trace of fired material was seen within the trench there was a clear difference in the underlying natural deposits, from outcropping stone to clay; this may account for the geophysical survey readings.

5.2.9 TRENCH 9

This trench was 20 x 2m in size and was aligned east-west level ground to the immediate west of Hazledene Farm. The ground level at the north-western corner of the trench was 62.2m AOD and at the north-eastern corner of the trench was 62.31m AOD. This trench was in the area not subjected to geophysical survey.

The natural clay (Context 901) was light yellow-brown in colour, and was sealed by moderately compact dark brown silty-clay plough soil up to 0.23m thick (Context 900).

5.2.10 TRENCH 10

This trench, located centrally within the site, was 20 x 2m in size and was aligned north-south on an almost level area of ground with slight north-south aligned ridges to both the west and east. The ground level at the north-western corner of the trench was 60.54m AOD and at the south-western corner of the trench was 59.77m AOD. This trench was in the area not subject to the geophysical survey.

The natural (Context 1021) was light yellow-brown clay. Truncating the natural were a series of ten parallel north-east to south-west aligned linear cuts (Fig 6, Plate 4) ranging from 0.16-0.66m in width (Contexts 1002, 1004, 1006, 1008, 1010, 1012, 1014, 1016, 1018 and 1020). These cuts were spaced 0.8-1.4m apart and were suggestive of ridge and furrow with the possible exception of Contexts 1012 and 1014 each of which seemed to represent two adjacent intercutting plough-scores possibly resultant from modern ploughing disturbing an earlier medieval/post-medieval layout. Three of the furrows (Context 1010, 1012 and 1014) were excavated as a representative sample of this group of features; they were found to be up 0.04m deep. The furrows were backfilled with moderately compact dark brown silty-clay (numbered Contexts 1001, 1003, 1005, 1007, 1009, 1011, 1013, 1015, 1017 and 1019 respectively). The only artefact seen was a fleck of ceramic building material in Context 1009. The furrows were sealed by plough-soil 0.27m thick (Context 1000) which was moderately compact dark brown silty-clay with occasional flecks of coal/charcoal. A sherd of late 19th-20th century blue and white transfer print ware pottery was found.

5.2.11 TRENCH 11

This trench was 20 x 2m in size and was aligned north-south on the brow of a north-south aligned ridge that sloped gently down towards the south; the ground level at the north-western corner of the trench was 61.93m AOD and at the south-western corner of the trench was 60.43m AOD. This trench was excavated to investigate both a linear anomaly seen both to the west and east of Trench 11 on geophysical survey (though not directly within Trench 11), and an area of higher magnetism towards the southern end of the trench.

The natural comprised an outcrop of laminated shale with almost horizontal bedding planes (Context 1101) which was directly beneath plough-soil (Context 1100) which was up to 0.28m thick. The plough-soil comprised moderately compact dark brown silty-clay with occasional flecks of coal/charcoal. A sherd of late 19th-20th century pottery was recovered.

There was no sign of a linear east-west anomaly within the trench; it should also be noted that this anomaly was not seen in Trench 12. The area of higher magnetism in the southern portion of the trench may have been due to variations within the outcropping bedrock.

5.2.12 TRENCH 12

This trench was 20 x 2m in size and was aligned north-south on the western slope of a north-south aligned ridge which sloped gently down towards the south. The ground level at the north-western corner of the trench was 57.99m AOD and at the south-western corner of the trench was 56.61m AOD. This trench was excavated to investigate strong positive magnetic readings indicative of possible kiln features, and a linear north-east to south-west aligned anomaly seen on the geophysical survey in both in the northern portion of Trench 12 and to the east of Trench 11.

The natural mid yellow-brown slightly silty-clay (Context 1200) was beneath moderately compact dark brown sandy-silt with occasional flecks of coal/charcoal (Context 1201), which represented a build-up of plough soil 0.3m thick.

There was no trace of any feature within this trench to account for the geophysical anomalies seen. These anomalies may be due to variations in the underlying geology.

5.2.13 TRENCH 13

This trench, at the western limits of the site, was 20 x 2m in size and was aligned north-east to south-west close to the bottom of the western slope of the north-south aligned ridge which sloped gently down towards the south. The ground level at the north-western corner of the trench was 56.45m AOD and at the north-eastern corner of the trench was 57.32m AOD. This trench was excavated to investigate strong positive magnetic readings seen on the geophysical survey which were indicative of possible kiln features located in the central part of the trench, and a linear north-north-west to south-south-east aligned anomaly in the western half of the trench.

The natural within the trench included an orange-brown slightly sandy-clay (Context 1307). Cut into the natural was a sub-rectangular cut feature, Context 1306, which has been interpreted as a bell pit (Figure6; Plate s 5, 6). It was located 4.2m from the western end of

the trench. Only the northern part of the feature lay within the trench the remainder being beyond the limits of excavation on the southern side. The cut was 3.3m wide east-west and 3m wide north-south and was 0.55m deep, with steeply angled sides and an angled base. The sides of the cut continued downwards beneath the section.

Context 1306 had four backfills, the earliest of which (Context 1305) was mid grey-brown sandy clay with frequent coal/charcoal flecks. This was sealed by compact crushed coal (Context 1304), which was in turn beneath compact re-deposited shale mixed with mid grey clay patches (Context 1303). The uppermost backfill (Context 1302) was moderately compact mid grey sandy clay with frequent coal/charcoal flecks. Following initial investigation by hand-excavation, this feature was half-sectioned by machine.

Despite the fact that the feature was not completely exposed, the evidence suggests that it is a bell-pit. It is of a similar size and form for bell pits and it is known that such features existed in this area. Secondly the back fill suggests deliberate infilling and the presence of a thick deposit of coal debris (1304) shows mining activity in the area.

In the section on the north side of the trench there was a thin deposit 0.04m thick of crushed coal (Context 1301). This only occurred in the western part of the trench adjacent to the bell pit and did not appear in the opposing south section. On the southern section above context 1306 the plough soil was a darker brown than elsewhere. It is suggested that 1301 was a dump of colliery waste possibly from the bell pit itself which was deposited adjacent to the feature. As waste from the bell pit, dump 1301 would not have overlain it which is why it does not appear in the section above it.

The plough soil (Context 1300) within Trench 13 was variable. It included a dark brown clayey silt. Towards the western end it was much blacker than elsewhere being the result coal from the underlying dump 1301 being mixed in.

No trace of the linear anomaly seen on the geophysical survey was seen in the trench, but any trace of this may have been removed by the bell-pit. The bell-pit and dump of coal debris may have accounted for the higher magnetic readings seen on the geophysical survey.

5.2.14 TRENCH 14

This trench was 20 x 2m in size and was aligned east-west on the western slope of a north-south aligned ridge which sloped gently down southwards. The ground level at the north-western corner of the trench was 56.64m AOD and at the north-eastern corner of the trench was 58.43m AOD. This trench was excavated to investigate a strong magnetic response of

uncertain origin and possible north-south aligned ridge and furrow seen on the geophysical survey.

Outcropping shale was present at the western end of the trench which was sealed by natural orange-brown silty-clay with frequent small stones (Context 1401). A deposit of plough-soil 0.3m thick (Context 1400) formed the uppermost deposit in the trench. This was a moderately compact dark brown sandy-silt with occasional small stones.

The strong magnetic response seen on the geophysical survey seems to have been caused by an outcrop of shale. No ridge and furrow was seen during excavation.

5.2.15 TRENCH 15

This trench, located centrally within the site, was 20 x 2m in size and was aligned east-west on level ground with higher ground to the west, north and east, but sloping very slightly downwards to the south. The ground level at the north-western corner of the trench was 58.31m AOD and at the north-eastern corner of the trench was 58.41m AOD. This trench was excavated to investigate isolated positive magnetic readings and linear anomalies seen on the geophysical survey.

The natural was a light yellow-brown clay (Context 1501) beneath a build-up of plough soil 0.25m thick (Context 1500) which consisted of a moderately compact dark brown silty-clay. A single sherd of late 19th-20th century white ware pottery was recovered.

There was no trace of any features to account for the anomalies seen on the geophysical survey. These may have been caused by changes within the underlying natural.

5.2.16 TRENCH 16

This trench was 20 x 2m in size and was aligned east-west on the gentle western slopes of a ridge running around the north-eastern limits of the site. The ground level at the north-western corner of the trench was 59.11m AOD and at the north-eastern corner of the trench was 60.53m AOD. This trench was excavated to investigate features seen on the geophysical survey which included a linear anomaly aligned north-south across the eastern portion of the trench and an area of readings considered typical of ferrous material.

An outcrop of degraded shale was located in a north-south aligned band between 2-5m from the eastern end of the trench (Context 1602). This was sealed by naturally occurring light yellow to light yellow-brown clay (Context 1601). The difference in colour within this deposit reflected its depth; where it was only a few millimetres thick above underlying bedrock it was yellow in colour, being light yellow-brown in colour where thicker. The uppermost deposit

(Context 1600) was a plough-soil 0.2m thick, comprising moderately compact dark brown silty-clay with occasional flecks of coal/charcoal. Two sherds of late 19th-20th century white ware pottery were recovered.

The band of degraded natural shale seems to account for the linear anomaly seen on the geophysical survey. No ferrous rich material was present, but it is possible that variations within the underlying geology may have accounted for these readings.

5.2.17 TRENCH 18

This trench was 20 x 2m in size and was aligned north-south on the gentle western slopes of a ridge running around the north-eastern limits of the site. The ground level at the north-western corner of the trench was 57.80m AOD and at the south-western corner of the trench was 57.72m AOD. This trench was excavated to investigate a 'blank' area on the geophysical survey.

Degraded natural shale (Context 1802) was present across the trench; it formed two small patches 1.5 and 3m from the northern end of the trench, a broad band aligned east-west across the trench 5-13m from the northern end of the trench, and a second band 15-19m from the northern end of the trench. The shale was sealed by natural light yellow-brown clay up to 0.08m thick (Context 1801). The overlying plough-soil (Context 1800) was moderately compact dark brown silty-clay0.19m thick. A single sherd of late 19th-20th century white ware pottery was recovered.

The trench did not show any signs of archaeological features, so matched the results of the geophysical survey suggesting that this was a 'blank' area. It should be noted, however, that in other trenches the outcropping shale seemed to be the cause of the anomalies seen in the geophysical survey; possibly variations with the rock account for the differences between the outcrops of shale yielding, and those failing to yield, readings on the geophysical survey.

5.2.18 TRENCH 19

This trench was 20 x 2m in size and was aligned east-west close to the bottom of the western slope of a north-south aligned ridge that sloped gently down towards the south. The ground level at the north-western corner of the trench was 52.87m AOD and at the north-eastern corner of the trench was 53.98m AOD. This trench was excavated to investigate a cluster of high magnetic readings in the central portion of the trench seen on the geophysical survey.

Outcrops of degraded natural coal and shale (Context 1902) were located in two patches adjacent to the southern limit of excavation, the first outcrop being between 3-6m from the western end of the trench and the second in the south-easternmost 5m of the trench. The bedrock was beneath a natural mid brown to mid yellow-brown clay (Context 1901) which was in turn sealed by a plough-soil 0.23m thick comprising moderately compact, slightly moist, dark brown silty-clay. Six sherds of late 19th-20th century blue and white transfer print pottery were recovered.

It seems likely that the variable nature of the underlying natural accounted for the geophysical survey readings seen; the anomalies in the geophysical survey occurred above the natural clay, rather than above the outcrops of coal/shale.

5.2.19 TRENCH 20

This trench in the south-western portion of the site measured 10 x 5m in size and was aligned east-west, on land sloping down to the south-west. The ground level at the north-western corner of the trench was 53.61m AOD and at the north-eastern corner of the trench was 54.36m AOD. This trench was excavated to investigate a curvilinear anomaly seen on the geophysical survey, which was located in the central portion of the trench.

Natural in this trench comprised mid brown-orange sandy-clay with frequent small stones (Context 2001). This was sealed by plough-soil 0.3m thick which was friable mid brown sandy-silt and contained occasional small stones and fragments of modern pottery (Context 2000).

No features were seen which could account for the geophysical anomaly seen in the survey.

5.2.20 TRENCH 21

This trench was 20 x 2m in size and was aligned north-south on an almost level area of ground with a slight ridge to the west and east. The ground level at the north-western corner of the trench was 56.22m AOD and at the south-western corner of the trench was 55.5m AOD. This trench was excavated to investigate two ENE to WSW aligned anomalies seen on the geophysical survey running across the northern and southern ends of the trench, together with higher magnetic readings.

The natural was a mid yellow-brown natural clay (Context 2100). This was overlain by moderately compact dark brown silty-clay plough-soil (2100) up to 0.25m thick.

No features were seen which could account for the geophysical anomalies seen in the survey. These may have been caused by changes in the underlying geology.

5.2.21 TRENCH 22

This trench was 20 x 2m in size and was aligned north-east to south-west in the south-western corner of the site, at the lowest point within the survey area. The ground level at the north-western corner of the trench was 51.58m AOD and at the north-eastern corner of the trench was 53.73m AOD. This trench was excavated to investigate linear anomalies in the northern portion of the trench and areas of higher magnetic reading in the centre of the trench seen on the geophysical survey. The southernmost portion of this trench became waterlogged after heavy rain.

The earliest deposit in the trench was light natural yellow-brown clay (Context 2203). Sitting directly above the natural were two areas of burnt coal/charcoal (Figure 8 Plate 8) with patches of firmly compacted med grey-brown clayey-sand (numbered collectively 2201). These were located 8m from the eastern end of the trench. The central area of each patch of burning was grey to black, surrounded by a ring of burnt red natural clay. The easternmost patch of burning was 0.76 x 0.6m in area and the westernmost patch was 0.4 x 0.4m in area. No datable artefacts were present in association with this deposit so their date is unclear. These patches of burning were interpreted as remains of small fires. Sealing the burning was a deposit of firmly compacted mid brown clay with occasional flecks of coal/charcoal (Context 2202) which was interpreted as natural clay re-deposited as hill-wash. Above context 2202 was a plough-soil 0.26m thick (Context 2200) which comprised friable dark brown sandy silt with occasional small stones.

The areas of higher magnetic readings seen on the geophysical survey seem to relate to the two patches of burning within the trench. No features were present in the northern portion of the trench to account for the linear features seen on the geophysical survey.

5.2.22 TRENCH 24

This trench was 20 x 2m in size and was aligned east-west on an almost level area of ground with a slight ridge to the west and east. The ground level at the north-western corner of the trench was 54.64m AOD and at the north-eastern corner of the trench was 55.06m AOD. This trench was excavated to investigate an area of strong magnetic response seen on geophysical survey over the eastern third of the trench, and a series of isolated high response areas at the western end of the trench.

The natural (Context 2401) was mid yellow-brown clay; the westernmost 8.5m of this deposit contained moderate fragments of coal up to 20x10mm in size. Sealing the natural was plough-soil 0.32m thick comprising moderately compact dark brown silty-clay with occasional flecks of coal (Context 2400). One sherd of late 19th-20th century blue and white transfer print ware pottery was recovered.

While no features were present to account for the area of strong magnetic response at the western end of the trench, the anomalies in the western portion may have been due to the presence of the fragments of coal within the natural clay.

5.2.23 TRENCH 25

This trench was 20 x 2m in size and was aligned north-south on the gentle western slopes of a ridge running around the north-eastern limits of the site. The ground level at the north-western corner of the trench was 58.02m AOD and at the south-western corner of the trench was 57.84m AOD. This trench was excavated to investigate an area of ridge and furrow identified on the geophysical survey.

Natural (Context 2502) comprised a mid yellow-brown clay. This was cut by two linear east-west aligned cuts (Contexts 2503-4) which were 0.7 and 1m wide respectively and 0.14m deep (Figure 9 Plate 8). These were interpreted as the remains of ridge and furrow. Furrow 2503 was backfilled with friable dark brown sandy-silt with occasional small stones (Context 2501), while furrow 2504 was in filled with friable dark grey-brown clayey-silt with frequent coal/charcoal flecks (Context 2502). The ridge and furrow was beneath plough soil 0.3m thick consisting of friable mid brown sandy-silt.

The trench confirmed the presence of the ridge and furrow seen in the geophysical survey, unfortunately no dating evidence was recovered from these features, so it is unclear if they are of medieval or post-medieval date.

5.2.24 TRENCH 26

This trench was 20 x 2m in size and was aligned east-west on an almost level area of ground with a slight ridge to the west. The ground level at the north-western corner of the trench was 59.7m AOD and at the north-eastern corner of the trench was 60.15m AOD. This trench was excavated to investigate an area identified as ridge and furrow, a north-south aligned anomaly seen at the eastern end of the trench and isolated higher magnetic readings seen in the geophysical survey.

Natural (Context 2603) consisted of a light yellow-brown clay with occasional flecks of coal, which was slightly lighter in colour at the easternmost half of the trench. Truncating the natural was a linear cut oriented north-east to south-west (Context 2602), which continued beyond both the northern and southern limits of excavation. The cut was in excess of 6m in length, 0.21m wide and 0.42m deep with very steep sides tapering to a V shaped base. This cut is on a broadly similar line to field boundaries to the north and is probably some kind of field drain, though there was no sign of a ceramic pipe within the cut. The cut was in-filled with compact yellow clay with occasional flecks of coal/charcoal with patches of mid brown clay (Context 2601). The uppermost deposit of plough-soil was 0.3m deep and consisted of moderately compact dark brown sandy-silt with occasional flecks of coal.

It is possible that the linear cut and fill may account for an area of higher magnetic readings at the western end of the site; there was no sign of the linear anomaly seen at the eastern end of the trench, though the change in the colour of the natural clay may suggest that the underlying geology was responsible for the readings in question.

5.2.25 TRENCH 27

This trench was an inverse L shape, the longer arm being aligned north-south and measuring 20 x 2m with the shorter arm at the northern end being 15 x 2m in size and aligned east-west. The trench was located on level ground at the top of a ridge that ran around the north-eastern limits of the site. The ground level at the north-western corner of the trench was 61.21m AOD, at the north-eastern corner of the trench was 60.78m AOD and at the south-eastern corner of the trench it was 60.38m AOD. This trench was excavated to investigate an area of linear anomalies thought to be possible prehistoric enclosures and a curvilinear feature together with isolated area of high magnetic readings.

There were outcrops of natural black-grey coal-rich shale bedrock (Context 2702) across the eastern arm of the trench at *c.*0.40m below ground level. These outcrops were sealed by natural yellow-brown clay with frequent patches of black silty clay and white-pale grey clay (Context 2701). Truncating the natural clay were three linear cuts (collectively numbered Context 2708) which were aligned east-west and were located adjacent to the eastern limits of the trench. Each cut was c. 0.86m wide and 0.04m deep (Figure 10). They were in filled with grey-brown silty-clay with shale and stone fragments (Context 2703) and are interpreted as the remains of ridge and furrow. In the north-eastern corner of the trench was a pit cut which continued beyond both the northern and eastern limits of excavation (Context 2707). The exposed portion of the cut was sub-rectangular and measured 1.6m north-south and 1m wide east-west. This was a pit to accommodate a dump of loosely compacted black organic sandy-silt (Context 2705) which is interpreted as a dump of night-soil. Slightly to the

west of pit 2707 was a second cut feature (Context 2704) which continued beyond the northern limit of excavation; within the trench the pit measured 2.30m wide east-west and 0.3m north-south. The pit was in filled with mid brown-black silty-clay with occasional stones (2706) and is interpreted as a rubbish pit in an area of known 20th century disturbance (Figure 10 Plate 9). The plough-soil in this area (Context 2700) was between 0.25 and 0.4m thick and was moderately compact dark brown silty-clay with occasional flecks of coal/charcoal.

Although the linear anomalies seen on the geophysical survey were not seen within the trench, the isolated readings of higher magnetism were presumably the result of the underlying geology with outcrops of coal and shale.

5.3 DISCUSSION

Although few significant archaeological remains were uncovered during this evaluation some broad conclusions can be drawn. The absence of any evidence of Iron Age/Romano-British occupation and/or settlement in the project area suggests that this was concentrated on the higher more level ground to the north of the development area. It is likely that the project area was agricultural in use most likely, given the topography, possibly pastoral. The presence of water within a sheltered defile at the west of the area offered a suitable area for stock management.

Remains of ridge and furrow agriculture were proven to exist in only three trenches but they were all predicted by the geophysical survey. The natural was shown to be close to the surface and traces of ploughing cutting into the natural, particularly in Trench 10 show that ploughing over the years was relatively deep and will have disturbed any remains originally within the plough soil. This is borne out by the difficulty in identifying remains of ridge and furrow in the sections even when they are known to exist from surviving traces in the base of some of the trenches. The soil overburden although varying slightly across the area was a broadly homogenous deposit. It showed no sign of the development of soil horizons suggesting it had been comprehensively disturbed

It is clear that the pattern of linear anomalies identified as probable agricultural features are the remains of field systems which could not be identified through excavation but nevertheless are known to have existed and evidence of which still survives. This is backed up by the pattern of field boundaries shown on the 19th century maps which show that the area had by the post medieval period been divided into fields and ploughed. The pattern of plough marks shown on the geophysical survey corresponds with the topography and the known 19th century field pattern. To the east of the central ridge on the more level ground the

grain of the ploughing extends E-W following the orientation of the fields whereas to the west the grain of ploughing runs counter to the alignment along the contour where ploughing is easier. In this latter area the geophysical survey shows plough marks are limited within the position of the field boundaries shown on the 19th century maps. This suggests that the ploughing in this area was associated with these enclosures being 18th to 19th century in origin. Given the shape of the fields and the slope on the western side it is possible that the ploughing was for improving pasture rather than for arable production.

The presence of a bell pit and the two areas of burning were to be expected given the known exploitation of coal in the area.

In addition to the evidence of the ridge and furrow described above the interpretation of the geophysical survey was broadly borne out by the results of the excavations. The caveats in the report about background noise particularly suggestive of geological activity were supported by the variations in clays and mineralisation across the area and the shallow depth of soil overburden. This is suggested as a significant origin for the bulk of the anomalies. The main archaeological features (the bell pit in Trench 13, the areas of burning Trench 22 and pits in Trench 27) were not specifically identified beforehand although were located close to anomalies.

On the basis of this work it is recommended that no further evaluation or investigative work be undertaken in the area covered by this phase of mitigation. It is suggested that the bell pit in Trench 13 be re-located treated and capped appropriately.

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7. ACKNOWLEDGEMENTS

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Illustrations	H. Pritchard
Editor	M. Stockwell

APPENDIX 1

CONTENTS OF ATTACHED CD

Archive of site photographs

Written scheme of works

Geophysical report

Desk based environmental impact assessment

PDF version of report

Context index

FIGURES

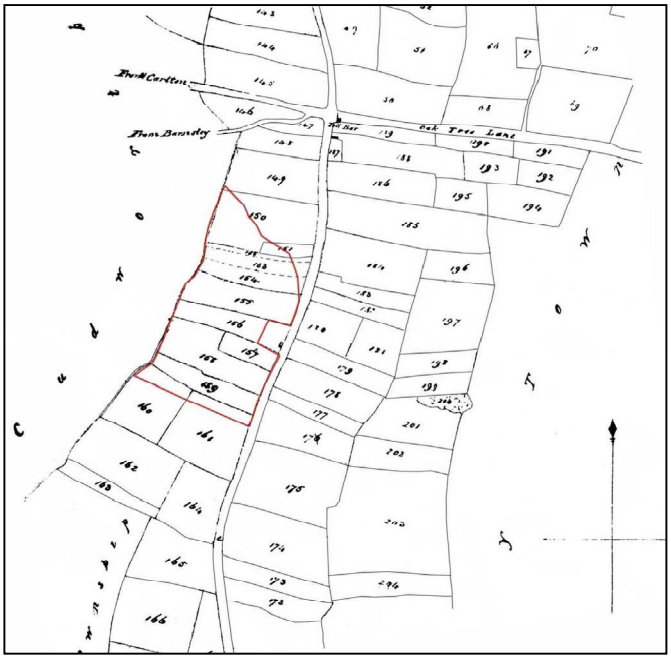

Figure 4 1841 tithe map

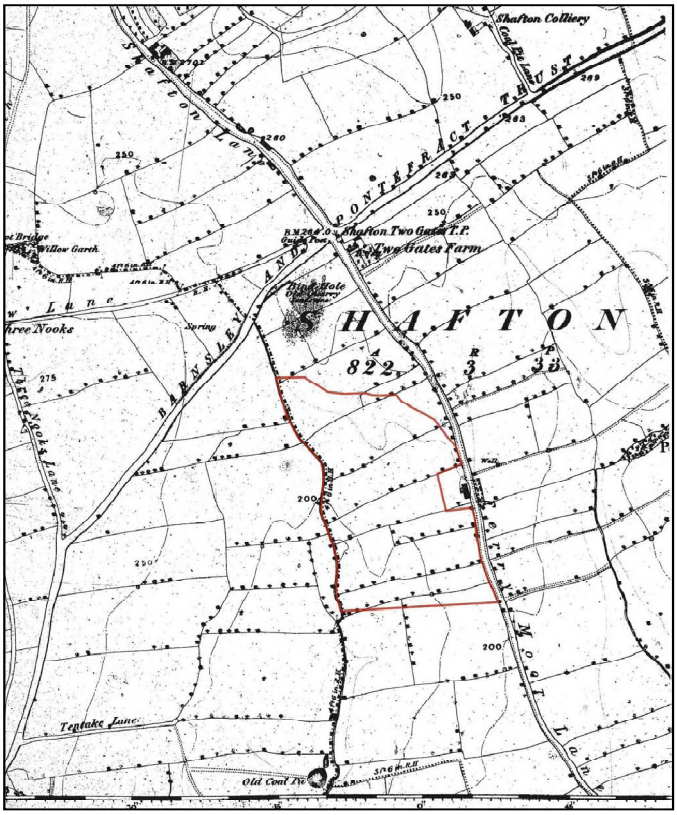

Figure 5 1854 OS map

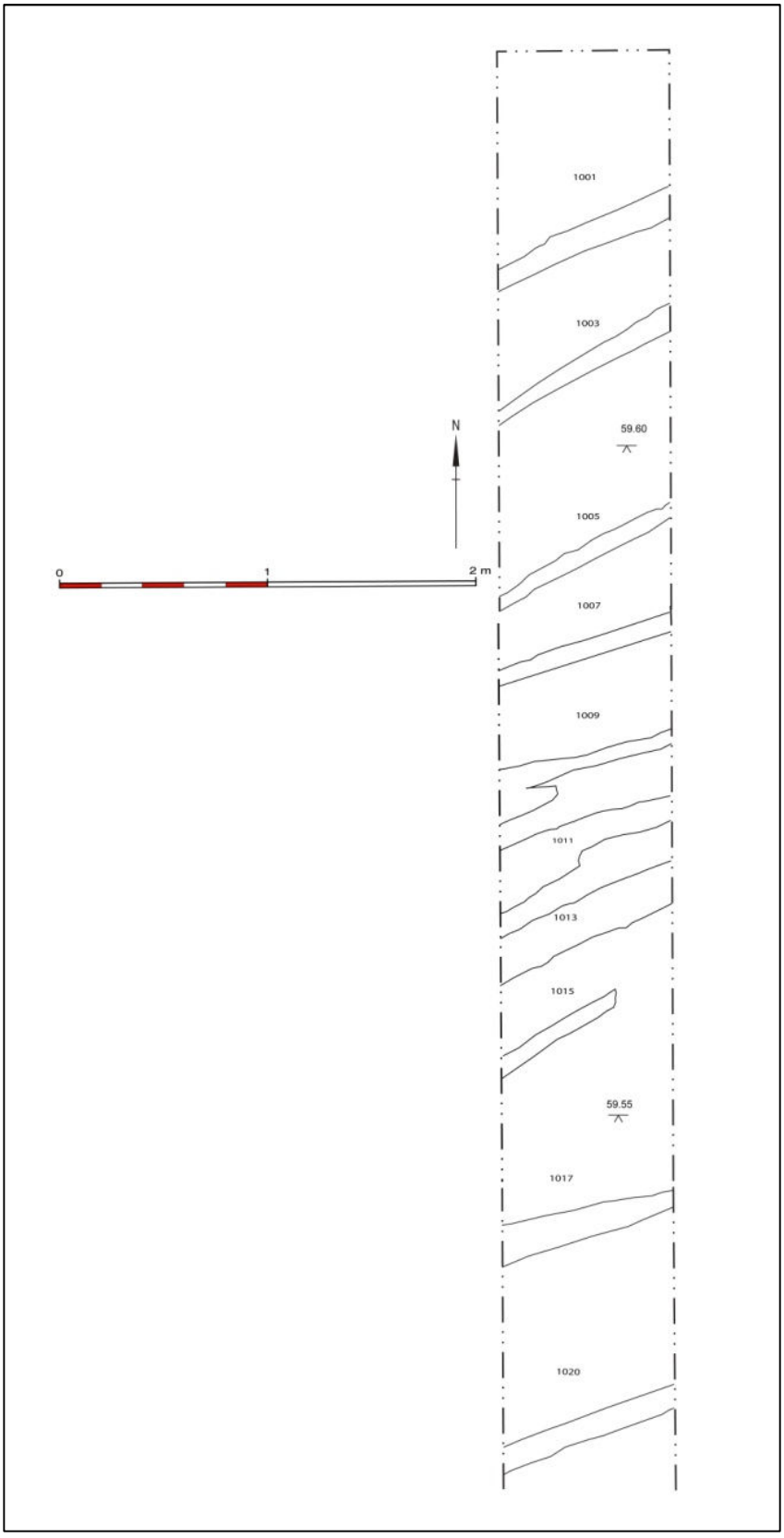

Figure 6 Trench 10 ridge and furrow

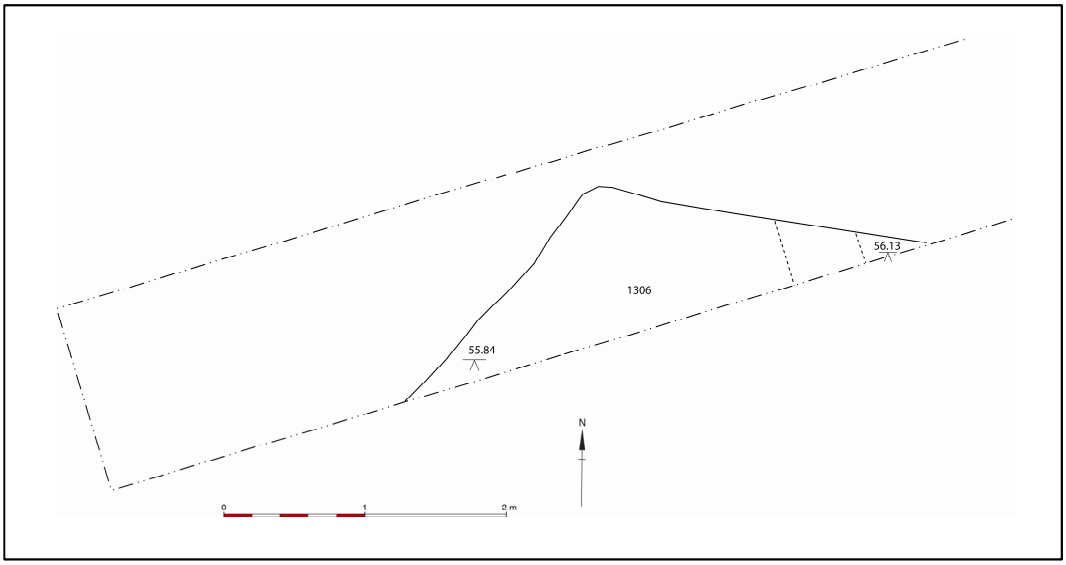

Figure 7 Trench 13 bell pit 1306

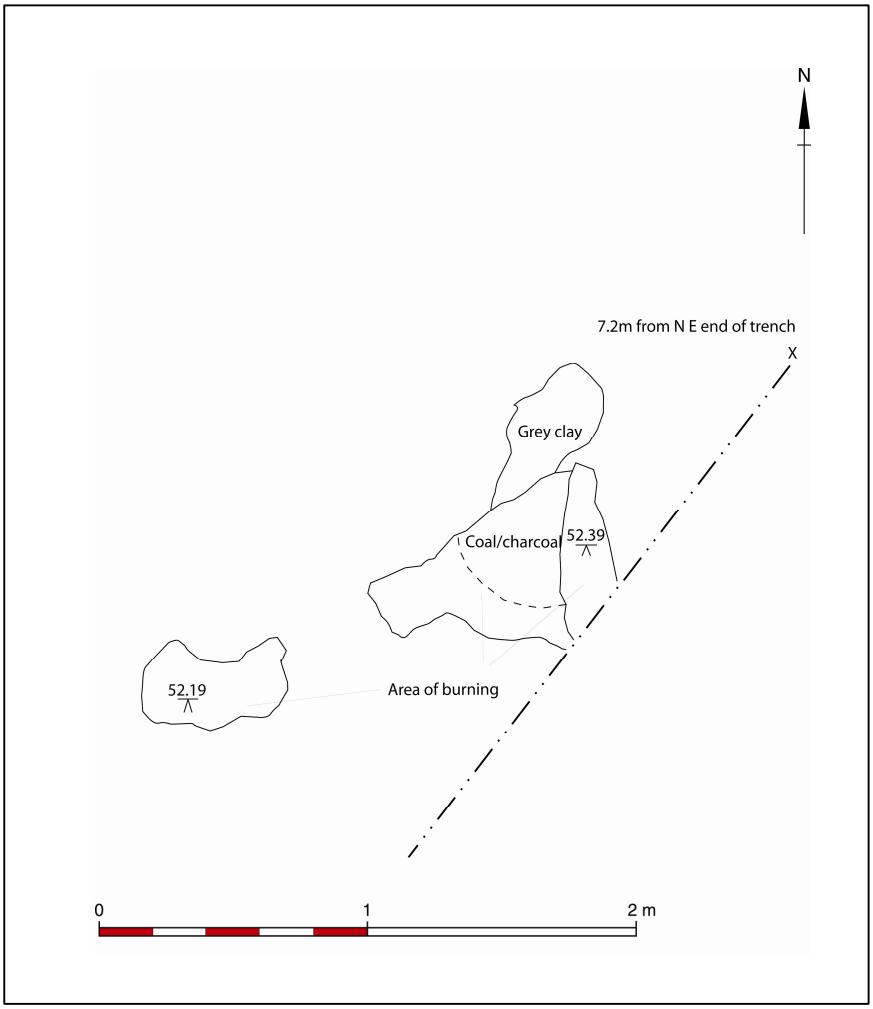

Figure 8 Trench 22 areas of burning

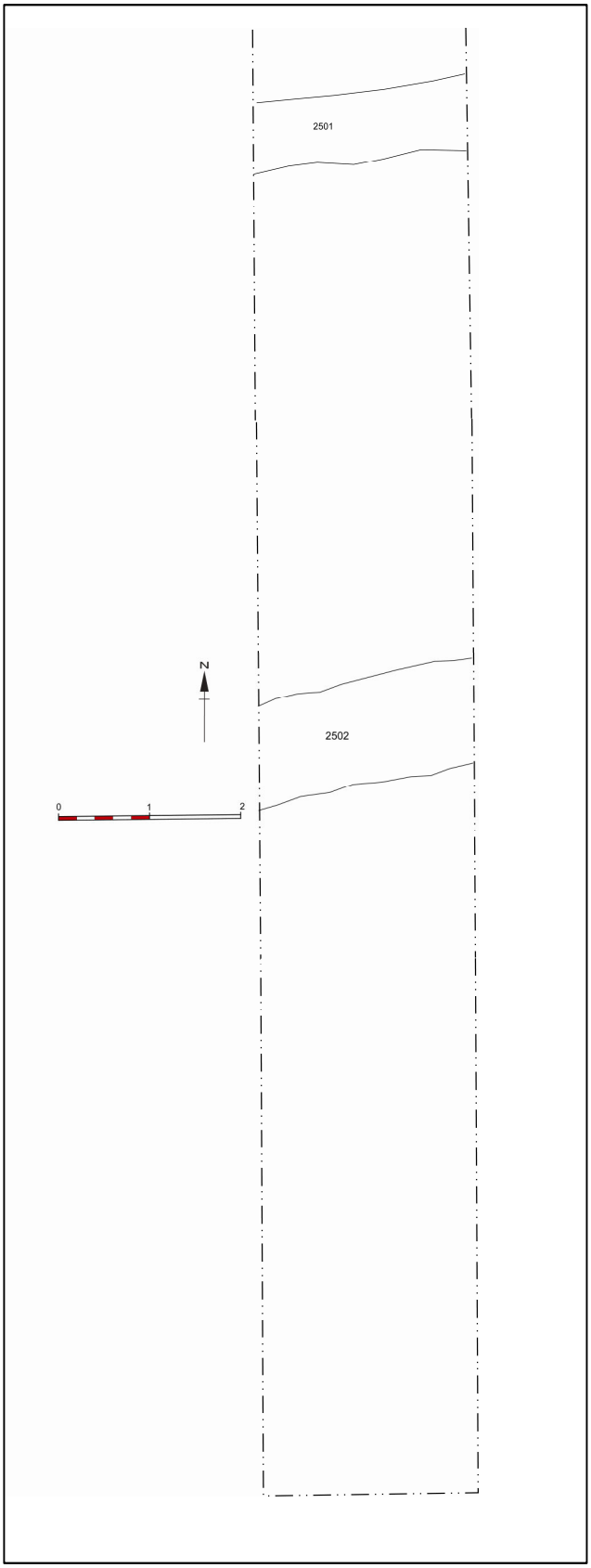

Figure 9 Trench 25 ridge and furrow

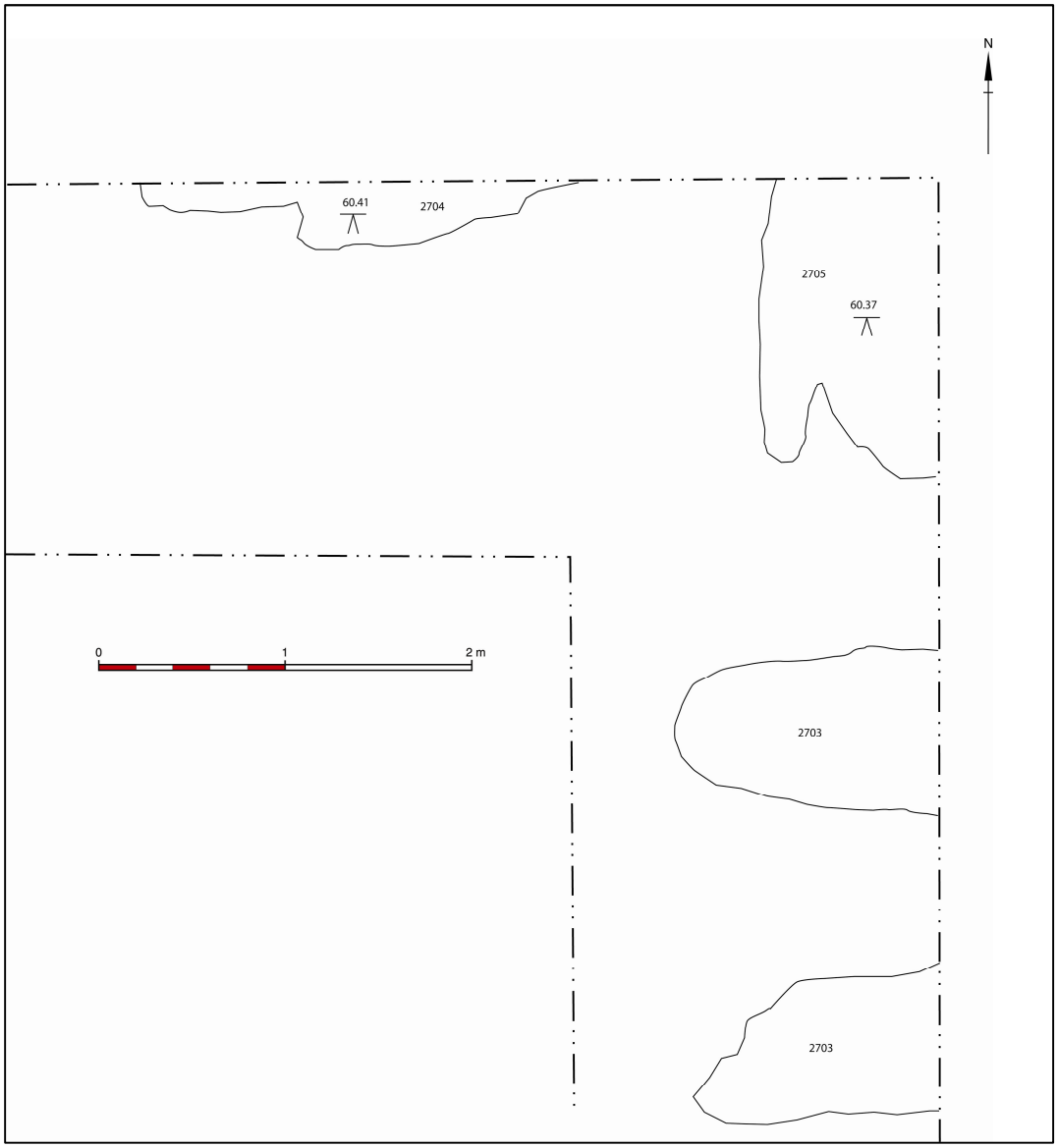

Figure 10 Trench 27 features

PLATES

Plate 1 General view over SW area of site

Plate 2 Trench 18 view of typical blank trench; < 0.50m plough soil over natural clay

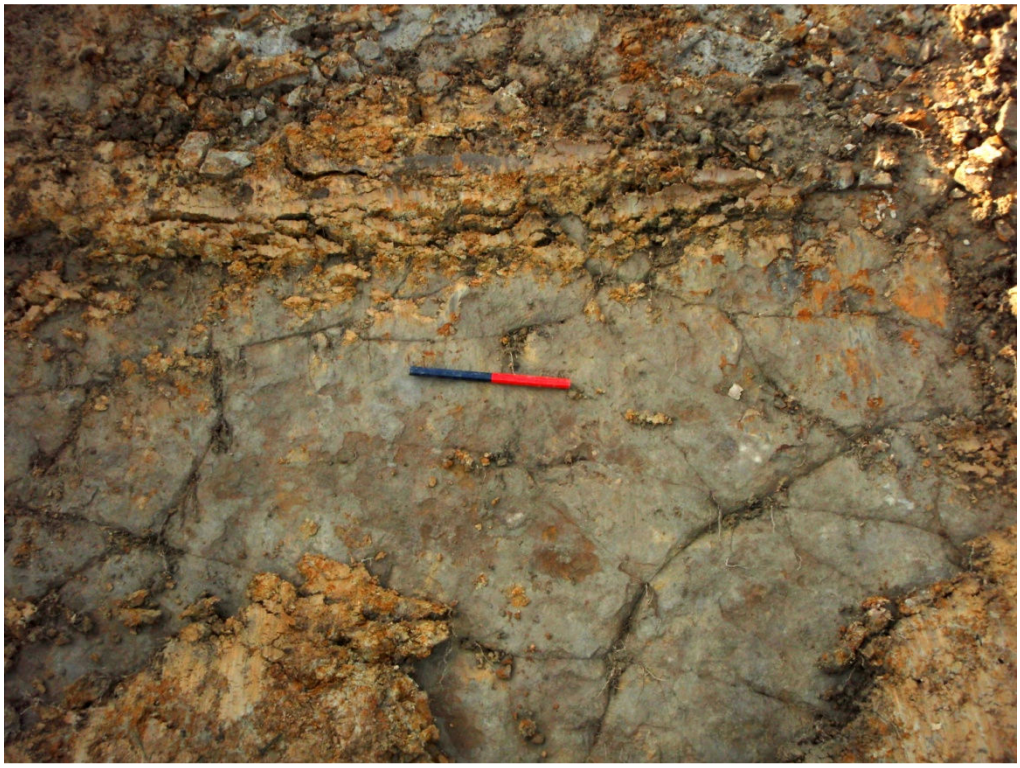

Plate 3 Trench 8 bedrock outcropping in base of trench

Plate 4 Trench 10 segment of trench showing ridge and furrow

Plate 5 Trench 13 bell pit 1306. Facing NE

Plate 6 Trench 13 section through bell pit 1306. Facing SW

Plate 7 Trench 22 areas of burning

Plate 8 Trench 25 ridge and furrow. Furrow cutting shale bedrock

Plate 9 Trench 27 facing N. Night soil dump 2705 on right and pit 2704 to left.