Land at Dairy Farm South, Willington, Bedfordshire

An Archaeological Evaluation; Part II

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Summary

Between 27th October 2008 and 20th November 2008, a team from Cambridge Archaeological Unit undertook the second part of an evaluation by trial trenching on 41.6 ha of land east of Bedford, between Renhold (north) and Willington (south), centred at 511100 250800. The evaluation followed initial investigations by geophysical survey in 2004, and was designed to further our understanding of the extent, nature and significance of any archaeological features and geomorphology following on from the first phase of evaluation which was undertaken by Cambridge Archaeological Unit in September 2005. The evaluation was commissioned by Lafarge Aggregates Ltd and the Written Scheme of Investigation was drafted by Archaeologica Ltd. Evidence for prehistoric, Roman and Post Medieval activity was identified across the landscape in the form of pits, ditches, postholes and sparse artefact scatters.

Introduction

A team from Cambridge Archaeological Unit undertook the second part of an evaluation by trial trenching between 27th October 2008 and 20th November 2008.

Topography and Geology

The proposed development area (PDA) lies to the east of Bedford, Bedfordshire, centred at 511100 250800 and covers 41.6 ha of land (figure 1). The site slopes steeply down from a northern 3rd terrace gravel ridge (c. 34m OD), with underlying till (boulder clay), to a 1st and 2nd terrace plateau before the slope continues more gently down to the alluvial covered Great Ouse floodplain (c. 18m OD). The site is bounded to the north by the A421, to the south by the river Great Ouse, with the Gadsey Brook flowing through the southern part of the PDA, separating the main alluvial wash of the southern section from the main colluvial wash to the north. The PDA is currently being used for arable cultivation with the exception of the area south of the Gadsey Brook which is laid to pasture and is a public right of way.

Archaeological Background

The known archaeology within the PDA has been outlined in the Written Scheme of Investigation (Lisboa 2005b), and has been detailed in the previous evaluation report (Beadsmoore 2005) and is consequently only briefly summarised in this report.

Archaeological evidence within the PDA provided by cropmarks and previous archaeological investigations focuses on monumental, later Neolithic/ Early Bronze Age activity on a terrace between the gravel ridge to the north and the gentle slope down towards the Gadsey Brook to the south; with evidence for background prehistoric activity provided by flint recovered from across the area.

The 2005 evaluation (Beadsmoore 2005) confirmed and refined the archaeology identified in the non-intrusive surveys; eliminating natural anomalies whilst confirming others. In addition to this, the evaluation revealed evidence of previous unidentified archaeology. A potential co-axial Bronze Age field system was revealed. It was aligned northeast-southwest and northwest-southeast and situated at the top and base of the steep slope. It has been suggested that there is a spacial relationship between this field system and the also identified burial monuments and therefore the field system is most likely to be Middle Bronze Age in date. The evaluation also revealed many un-dated features including a partially exposed extended burial which is potentially Roman or later. Post Medieval features and disturbance were also exposed and excavated on the eastern part of the Ouse flood plain in the south of the PDA. The evaluation also identified large deposits of colluvial across the site. In some cases the deposit overlay features, and clarifies why the geophysical survey did not detect all the ditches and discrete features.

Methodology

Trial Trenching

The evaluation investigated 60% of the proposed trenches within the PDA while the other 40 % were investigated in 2005. A programme of 2100m of 2.5m wide trenches provided a 1.25% sample of the 41.6ha area of the western half of the PDA. No judgemental/ contingency trenching was machined.

Topsoil and deposits overlying the archaeology were machined under archaeological supervision and scanned by eye and with a metal detector. Colluvial deposits were removed in trenches where it was identified, 'buried' soil was mostly removed where encountered with the exception of a 6m block in one trench which was subsequently test pitted. Several of the trenches towards the south of the PDA were considered too deep to open and became an ingress for water, therefore for heath and safety reasons it was deemed appropriate to open test pits at either end which were recorded and immediately backfilled.

All of the archaeological features were planned immediately and subsequently sampled. A minimum of 50% of each discrete feature was excavated, while ditches were sampled in 1m sections. Excavation was carried out by hand and all finds were retained. The recording followed a CAU modified MoLAS system (Spence 1990); assigning context numbers (e.g. [fill], [cut]) to stratigraphic units and feature numbers, F., to interrelated stratigraphic units (e.g. a ditch's cut and fills). Base plans were drawn at 1:50, sections at 1:10 or 1:20. The photographic archive comprises colour and black and white slides as well as digital images. A representative range of features were bulk sampled. All work was carried out in strict accordance with statutory Health and Safety legislation, within CAU risk assessment, and with the recommendations of SCAUM (Allen and Holt 2002).

The artefacts and accompanying documentary records have been compiled into a stable indexed archive. This is currently stored at CAU under the project code BDFM2009.12. Within the text, the reference to a feature number is marked in bold (e.g. **F.01**) and context numbers in square brackets (e.g. [01]).

Artefact Survey

An artefact survey was carried out to determine densities of archaeological material in the colluivial and plough soil and to identify potential 'hotspots' of past activity. A previous artefact survey (Beadsmoore 2005) on the eastern half of the PDA had revealed low density background presence of prehistoric material in the topsoil. At a central point along each trench six buckets (90 litres) of plough soil and six buckets (90 litres) of colluvium (where it was identified), were hand sorted for artefacts, which were retained.

Results

Artefact Survey

The artefact survey yielded limited amounts of flint, pottery and tile. One Late Neolithic flint was obtained from within a peaty layer at the base of the southern test pit of trench 106, and four Late Neolithic flints were also obtained from the colluvial layer within trench 1. The remainder of the artefacts came from within the plough soil. A total of five Late Neolithic flints were obtained, one from each of the following; trench 3, trench 4, trench 29, trench 34, and trench 39. Trench 37 yielded two fragments of Roman tile, and trench 5 produced 1 sherd of Roman pottery. Trenches 26 and 29 yielded five sherds of Medieval and Post Medieval pottery. As with the previous artefact survey undertaken in the 2005 evaluation, this survey indicates a low density background presence of prehistoric material in the topsoil and colluvium, and a very low density background presence of Roman material in the topsoil.

Trial Trenching

For the purposes of explanation, the trenches within the PDA have been split into fields 1-7 inclusive (figure 2). Forty two trenches were machined, the majority of which were 50m in length with the exception of ten test pits within five of the trenches in fields 6 and 7. Forty nine archaeological features were revealed in sixteen of these trenches, including Post Medieval gullies, a Roman ditch, prehistoric pits, postholes and tree throws, and a potential Middle Bronze Age ring ditch (figure 3). There was also evidence of ridge and furrow and a 'modern' earthwork.

Field 1

Field 1 was situated in the north eastern part of the PDA, starting at the top of the hill where there is minimal coverage of plough soil and the features are truncated, and continues down the slope where colluvial deposits become increasingly thicker, and numerous until they reach their deepest in trench 53 at 1.2m thick (the colluvial deposits are discussed in detail later). Trenches 38, 39, 40 and 41 contained no archaeological features (figure 3).

Trench 37 was located in an area of raised magnetic susceptibility approximately 30m north of a rectilinear '**A**' identified in the geophysical survey (Lisboa 2005a). A circular shallow posthole (**F.02**) approximately 0.25m in diameter, steep sided with a flat base and a small circular shallow pit (**F.01**), 0.8m in diameter with irregular sides and base were excavated within this trench (figure 4). The pit edge [02] was lined with small rounded pebbles and contained a dark blackish brown silty clay fill which contained frequent charcoal flecks, charred animal bone, un-diagnostic prehistoric flint (burnt and un-burnt), and forty two sherds of Late Bronze Age pottery weighing 286g. The bulk sample analysis contained charred grains, chaff and some weeds consistent with crop processing debris, and suggest a close proximity to a Late Bronze Age settlement (Appendix 4). Both of these features are heavily truncated due to their location at the top of the hill.

Trench 53 was located at the base of the hill where two main colluvial deposits were recorded up to 1.2m deep. Evidence of cultivation was noted in the geophysical survey which was confirmed within the section of this trench as existing ridge and furrow (figure 5). The furrows, one of which was particularly deep (**F.07**), were filled by the upper most layer of colluvium which suggests there have been numerous episodes of hill wash over time.

Field 2

Field 2 was situated in the north western part of the PDA, at the top of the hill where there is minimal coverage of plough soil and the features are truncated. The field then continues down the slope where colluvial deposits start to appear towards the base of the slope and reach their deepest in the south of trench 31 at 0.65m thick. Trenches 36 and 52 contained no archaeological features (figure 3).

Trench 31 was positioned on the slope of the hill in an area where no known archaeology was expected. A series of inter-cutting gullies (**F.21**, **F.25**, **F.26**, **F.29**) and a small sub-circular pit (**F.41**) were excavated at the northern end of the trench (figure 4). Gullies F.26 and F.29 were between 0.23m – 0.4m wide and 0.1m – 0.17m deep and contained a single sandy silt fill. Curvilinear gully F.21 was slightly deeper at between 0.21m – 0.28m deep and 0.56m – 0.94m wide and also contained a single fill that consisted of approximately 70% animal bone and 30% sandy silty fill. The relationship between gully F.21 and pit F.41 is unclear, however gully F.25, (0.48m – 0.61m wide and 0.19m – 0.21m deep), truncates all the previously discussed features and also contained a high percentage of animal bone, possibly brought up from the underlying F.21. All the features within trench 31 can be dated to the Post Medieval period as 18th century pottery was found in all of them. Due to the well sorted nature of the animal bone; it is possible that they were being used for drainage.

Trench 32 was located in an area where magnetometry suggests a small cluster of pit like anomalies. Two small postholes (**F.16**, **F.17**) and a small pit (**F.18**) were excavated none of which produced any cultural material (figure 4). Post holes F.16 and F.17 were 0.26m and 0.5m in diameter and 0.1m and 0.15m deep, consecutively, with a single silty fill within a concave cut, and pit F.18 was 0.7m in diameter and 0.24m deep, with three sterile silty fills contained within a concave cut.

Trench 33 was located at the top of the hill in an area near a small cluster of pit like anomalies picked up by magnetometry. A row of six post holes (**F.8**, **F.9**, **F.10**, **F.11**, **F.12**, **F.13**) were excavated at the eastern end of the trench which ranged from 0.15m – 0.27m in diameter and 0.07m – 0.13m deep, all with moderately steep sides and concave bases (figure 4). A single undatable fragment of pottery was contained within [20], F.8 and animal bone within [26], F.11. The post holes are arranged in a straight line which runs roughly east-west along the trench and may be part of a larger structure which continues outside of the trench.

Trench 34 was positioned on the crest of the hill in order to transect and investigate possible ditches '**B**' and '**C**' that were identified in the geophysical survey and a small number of pit like anomalies, all associated with a raised area of magnetic susceptibility (Lisboa 2005a). Two linears were identified within the machined trench; gully terminus **F.19** aligned east, west; and gully **F.20** aligned west northwest, east

southeast (figure 4). Both of the linears had moderately steep and slightly concave sides, with a concave base and were 0.23m – 0.25m wide and between 0.09m – 0.15m deep. Late Bronze Age pottery was recovered from [45] F.19 and it is likely that the two gullies are part of the same system. However neither of the gullies match the geophysical survey either in position or alignment. A small pit **F.15,** 0.77m in diameter and 0.43m deep was excavated at the north of the trench, with very steep sides and a flat base. F.15 contained two dark charcoal rich fills of which the upper [34] contained Late Bronze Age pottery and burned/ calcined animal bone and the basal [43] contained two un-diagnostic prehistoric flint flakes.

Trench 35 was positioned at the top of the hill approximately 10m northeast of the potential ditch '**B**'. An isolated small circular pit **F.14** was excavated at the eastern end of the trench which was 0.5m in diameter and only 0.07m deep (figure 4). Late Bronze Age pottery and animal bone were found within its single fill [32] which was a dark brownish grey sandy silt.

Field 3

Field 3 was situated in the centre of the PDA, starting at the base of the steep hill where colluvial deposits begin to level off, (between 0.3m – 0.9m thick in trench 24), and continues south onto a ridge which reaches its peak height in trench 22 where there is only 0.4m of coverage by plough soil. The geophysics would suggest there is a dense spread of discrete features and monuments running along this ridge, however trench 22 contained no archaeology and trenches 23 and 24 contain only tree throws and solution hollows.

Trench 20 was positioned within an area of clustered anomalies, identified as '**K**' within the geophysical analysis (Lisboa 2005a). One small pit **F.43,** which contained no material culture, was identified among eleven tree throws and solution hollows which ranged from 0.75m – 3m in length, and 0.5m – 3m in width. The pit was 0.81m long, 0.49m wide and 0.49m deep with steep sides and a concave base, which contained a single dark sterile fill (figure 4).

Trench 21 was positioned to investigate a potential rectangular enclosure identified as '**M**' in the geophysical survey (Lisboa 2005a). The feature was a natural hollow **F.45**, a minimum of 14m wide and 0.36m deep in its centre (figure 6). The hollow contained three natural silting layers, the basal of which [106] was a dark blackish brown silty clay which lined the hollow and could be seen in section along most of the trench length.

Trench 24 was located at the base of the hill in an area of clustered anomalies. Four tree throws, (**F.3**, **F.4**, **F.5**, **F.6**), were excavated within the trench as a representative sample within field 3, these ranged from 0.7m – 1.3m long, 0.32m – 0.8m wide and between 0.09 – 0.21m deep, all of which were irregular in plan and section, contained no cultural material and were filled with a firm, dark brown silty clay (figure 7).

Field 4

Field 4 was situated in the western part of the site, immediately north of the Gadsey Brook just before it meets the River Ouse. Trenches within this field were heavily

disturbed by rabbit warrens and modern landscaping, therefore no geophysical survey was undertaken in the majority of this field. Trenches 25, 27 and 28 contained no archaeological features.

Trench 26 was located over a visible earthwork identified as '**N**' in the topographical survey (Lisboa 2005a.). The earthwork **F.44** was 3.75m wide, 1.2m deep and contained four layers of natural silty alluvial/ water bourn deposits (figure 8). To the west of F.44 and continuing along the entire length of the trench was a re-deposited layer of gravel [113] which contained 16th century pottery indicating a low density background presence of early Post Medieval activity and demonstrates the significance of the disturbance within field 4. F.44 was cut into this layer and is therefore most likely a modern earthwork, perhaps dug to aid drainage of the surrounding fields.

Trench 29 was positioned in the south western corner of field 4 immediately north of the Gadsey Brook. A V-shaped Roman ditch **F.48** was identified at the western end of the trench aligned roughly north-south. The ditch was 2.25m wide and 1.2m deep with steep straight sides and a V-shaped base (figure 9). The main fill of the ditch [120] was a dark greyish brown clayey silt which contained a spread of animal bone, Roman pottery, twenty three residual Early Neolithic/ Mesolithic flints and a quern stone. Disturbance from later landscaping within the field has made the top of the cut indistinguishable. A pit **F.49** was also exposed, 3.5m wide and 0.8m deep which contained residual early Neolithic/ Mesolithic flint within its dark blackish silty basal fill, however Post Medieval pottery, clay pipes and glass recovered from the upper alluvial/ water borne fills suggest this is a modern feature, perhaps a watering hole that has naturally silted up.

Trench 30 was located at the most westerly part of site at the base of the hill. A 0.6m thick layer of colluvial covered a layer of dark blackish brown, sandy silty buried soil [70], which spread across most of the trench and could be seen in section from 8m – 46m up to 0.2m thick in the centre (figure 7). Two 1m² test squares were excavated which revealed two Mesolithic flint artefacts. The buried soil sealed three post holes (**F.22**, **F.28**, **F.46**), and ten tree throws/ solution hollows which varied from 0.3m – 1.5m long and 0.15m – 0.5m wide and were filled with the buried soil. Three of the tree throws (**F.23**, **F.27**, **F.47**) contained Mesolithic flints tools, including a microlith and a microburin. Post holes F.22, F.28 and F.46, contained no material culture.

Field 5

Field 5 was situated south of the ridge on flat land immediately north of the Gadsey Brook. Continual inundation of alluvial deposits coming from the south and colluvial from the north suggest this field was periodically wet and dry. The geophysics would suggest there is a dense spread of discrete features and potential monuments within this field, however trenches 1, 5, 6, 7 and 56 contained no archaeological features and trench 3 contained two tree throws **F.32** and **F.33** (figure 7).

Trench 2 was positioned within an area of clustered anomalies, identified as '**V**' within the geophysical analysis (Lisboa 2005a). Nine circular and sub-circular post holes ranging from 0.38m – 0.56m in diameter and 0.33m – 0.5m deep, all with moderately steep concave sides and gently concave bases were revealed (figure 7). All

of the post holes contain a single fill which was a moderately firm, mid greyish brown sandy silt, none of the post holes produced any material culture. Post holes **F.30**, **F. 31**, **F. 35**, **F.36**, and **F.37** form an arc and may represent approximately 1/5 of a complete circle of which the extrapolated diameter would measure 11m. Post hole **F.34** lies within this arc and **F.38**, **F.39** and **F.40** appear to be unconnected. It is likely that the post holes may form one or more small structures.

Trench 4 was positioned to transect the northern part of a potential ring ditch identified as '**U**' within the geophysical analysis (Lisboa 2005a). One east-west aligned slightly curved ditch **F.42** was excavated in the centre of trench 4 which was 1.45m wide and 0.65m deep with steep and slightly concave sides and a concave base (figure 10). The ditch was filled with two moderately firm, dark greyish brown gravely fills which yielded no pottery or flint but did contain occasional snail shells, a layer of dark red colluvial then seals the ditch. Ditches from trenches 13 and 14b within the 2005 phase of evaluation, (which contained residual Early Bronze Age pottery and Neolithic flint and snail shells), are very similar in form, fill and dimension and are or a comparable alignment to ditch F.42 (figure 2), therefore this ditch may be part of the prehistoric field system already identified. Alternatively ditch F.42 could be part of the potential ring ditch, however it appears to be too far north and does not appear to have an acute enough curve, from its limited exposure within the trench.

Trench 56 was positioned in the south eastern corner of the PDA immediately north of the Gadsey Brook. No archaeology was encountered, however a channel (33m from the north), was revealed and machine dug, which was 6m+ wide, 1.2m deep (figure 3). The channel contained a minimum of three, flat colluvial layers interspersed with gravel lenses, which in turn was covered by a layer of alluvial wash which continued all the way to the south of the trench.

Fields 6 and 7 – Alluvial deposits

Fields 6 and 7 were situated to the south of the Gadsey Brook and north of the River Great Ouse. Continual inundation of alluvial and river deposits coming from the south have covered this flood plain with between 0.8m – 3.1m of clay, some of the trenches were too deep to open and were test pitted (figure 11). Archaeological evidence was confined to a single secondary flint flake, characteristic of the late Neolithic and onwards found 3m deep in peaty layer 'F' ([129]) of trench 106, immediately north of the River Great Ouse. The bulk sample taken from this context confirmed the peaty nature and suggests that there would have been an open wet woodland constructed of oak and elder in an active fluvial system. Table 1 (over page) shows a summary of the alluvial layers across fields 6 and 7.

The deep alluvial and river deposits are present in consistent layers across the field, trenches within the centre of the field were shallower than towards the eastern, southern and western perimeters, creating a slight rise. Channel edges were recorded in trenches 102, 103 and 104 (figure 3), the deposits of which went down to approximately 3.5m deep in the centre of trench 102, (which was test pitted by machine). These edges may form part of the same channel which may be part of an old course of the River Great Ouse.

Figure 11: Test Pit Trench 106 – Alluvial Deposits

Trench	E/W end N/S end	Depth (m)	Channel	Evidence of Archaeology	Layers encountered
101	W	2.2			A. B, C
101	E	2.2			A, B, C
102	N	0.8			A, B, C
102	Middle	3.5	y		A, B, E
102	S	1.3			A, B, C
103	W	1.8	y		A, B, E
103	E	1.1			A, B, C
104	W	2.75	y		A, B, C
104	E	1.5			A, B, G
105	N	1.5			A, B, G
105	S	1.4			A, B, G
106	N	1.6			A, B, G
106	S	3.1		flint flake/ hazelnut shells/ charcoal/ burnt bone	A, B, C, D, F
107	W	1.5			A, B, G
107	E	1.4			A, B, C
108	N	1.6			B, G
108	S	1.7			B, G
109	W	1.4			A, B, C
109	E	1.5			A, B, C
110	W	1.8			A, B, C, E
110	E	2.4			A, B, C

Table 1: Summary of Test pits

Key A = compact, dark, orangey clay
B = compact, light to mid, orangey grey, clay
C = compact, light to dark, mottled blue and orange clay
D = firm, banded/ organic, dark bluish grey peaty soil containing fragments of wood
E = firm, dark bluish grey silt
F = moderately firm, peat and silt mix
G = compact, dark, rich reddish brown, slightly silty clay

Colluvial Deposits

Trial trenching identified substantial deposits of colluvial across large areas of the PDA. The deposits of colluvial were mainly situated on the middle and lower sections of the slope down towards the flatter middle terrace and further south, past the ridge on a shallower second slope heading towards the Ouse floodplain (figure 3). At the top of the hill patchy colluvial was identified which had been caught in pockets and depressions within trenches 36, and 39 and the southern half of trench 31, this follows the contour line of the slope of the hill. At the base of the hill the colluvial deposits were at their deepest, trenches 40 and 53 contained up to 1.2m of hill wash which had formed two distinct layers, figure 12 shows a section of trench 40. Trenches 30, 24 and 25, situated at the base of the hill on the flatter middle terrace, contained between 0.4m – 0.9m of colluvial deposits.

The colluvial then becomes shallower at the crest of the middle terrace (trenches 20 and 23), until it is not seen at all in trenches 26 and 22 where a slight gravel ridge is noticeable. The colluvial then begins to get thicker at the southern end of trench 21 and trenches 1 and 2 where two distinct layers are visible again. This represents the start of the gradual descent towards the River Great Ouse floodplain in which the colluvial coverage remains level, in trenches 3, 5 and 7. A third layer of colluvial is encountered in trenches 4, 6, an 56, which represents an area which has been continually in-undated with hill wash from the north and river silts from the south. Two site profiles have been created using this information which demonstrate and exaggerate the erosion of the gravel terraces (figure 12).

Colluvial 1 – firm, mid pinkish brown (occasionally dark pinkish brown), clayey sandy silt, with rare, very small, rounded pea grits, well sorted.
Colluvial 2 – firm, light pinkish yellowy brown, clayey sandy silt, with very rare, very small, rounded pea grits, very well sorted.
Colluvial 3 – firm, dark pinkish brown, clayey silt with frequent small and medium sub-angular and sub-rounded mixed gravels, well sorted.

The only evidence of features that cut into the colluvium were the furrows identified within trench 53, which were situated between layers 1 and 2. This would suggest that the upper layer of colluvial is later in date than the Early Bronze Age, as had been suggested previously (Beadsmoore 2005). Four flints were recovered from the artefact survey within the colluvium from trench 1 which were dated to the Late Neolithic/ Early Bronze Age, however these are likely to be residual.

Discussion

Landscape

As with the previous evaluation (Beadsmoore 2005), three main topographical zones can be identified at the PDA; the northern ridge, the middle terrace and the River Great Ouse floodplain with the location of colluvial and alluvial deposits being determined by the natural topography of the site. The archaeology follows a similar pattern as the terrain; a void in archaeological activity was identified at the southern most part of the PDA on the Ouse flood plain, (18m – 19m OD), which was most likely prone to unpredictable flooding. The unexcavated prehistoric monuments are

clustered on the middle terrace, as well as good preservation of tree throws (as they are sealed by colluvium), and the southern most part of the prehistoric field system/ ring ditch. The middle terrace would not have been subject to inundation from the Ouse and is far south enough away from the main flow of colluvium from the northern ridge, this would have created a dryer environment more suitable for habitation activity. Late Bronze Age activity was identified within the highest contour of the PDA, (34m OD), on the northern ridge, avoiding the slope of the hill. This flat terrace appears to have been ideal for occupation.

Chronologies

Mesolithic

A relatively discreet area of Mesolithic activity was identified in trenches 29 and 30 in the form of flint working. The flint that was potentially contemporary with the features themselves consisted of diagnostically Mesolithic artefacts including a Microlith, a microburin and several fine blades, all of which were excavated within tree throws in trench 30. The tree throws were sealed by a buried soil [70]. The presence of Mesolithic material within the buried soil itself suggests that it was built up in the Early Neolithic or after, but before the Bronze Age, as the buried soil is in turn sealed by colluvium. Evidence for background Mesolithic activity was also provided by a residual flint found within a Roman ditch in trench 29. This scatter of material evidence, in the form of flints, is consistent with the general interpretation of the Mesolithic period along the River Ouse, which is decontextualised (Dawson 2000).

Neolithic

Evidence for background Neolithic activity was identified in the form of flints recovered from the artefact survey and as residual material within features already dated to Post-Medieval, Roman or Late Bronze Age. This may represent a blank in the route along the Great Ouse which has been described as a centre of activity in the Neolithic (Malim 2000).

Middle Bronze Age

One potentially Middle Bronze Age ditch was identified within trench 4, which yielded no artefacts and is dated by association with the prehistoric field system located in the 2005 evaluation. Prehistoric field systems are notoriously empty of artefacts, usually yielding only residual flints and pottery, (Beadsmoore 2005).

Late Bronze Age

Four features were securely dated to the Late Bronze Age; three pits and one gully all situated in the north western part of the PDA within trenches 34, 35 and 37. The pottery contained within those features was early Post Deverel Rimbury (PDR) dated c.1000BC-800BC. A similar assemblage was recovered from Broom, Bedfordshire (Knight and Cooper 2004), contained within burnt stone pits and was associated with posthole structures. It is likely then that the surrounding scatter of undated postholes and small pits can be considered as Late Bronze Age creating a discreet area of

activity at the top of the ridge. Further confirmation of Late Bronze Age activity in this area of site also came from residual pottery within later, Post Medieval features in trench 31

Undated
Seventeen postholes, two pits and one gully were undated within the PDA, together with numerous tree throws/ solution hollows. Due to the similarities in form and alignment and their proximity to other features, the row of six post holes in trench 33, the small pit in trench 32 and gully in trench 34 are potentially all part of the Late Bronze Age activity situated within the north western corner of the site. The remaining structure of post holes in trench 2 and small pit in trench 20 are likely to be prehistoric as they are sealed by colluvial deposits which are thought to date to the Later Bronze Age.

Roman
One late Roman ditch was excavated in trench 29 which contained 3rd/ 4th century pottery and bucket sampling from trench 5 yielded a single sherd of Roman pottery. These trenches are both situated at the south of the PDA immediately north of the Gadsey Brook and suggest an area of low level Roman occupation close to the river. Recent excavations in Willington have shown some low status Roman settlement along the river on the edge of lagoons, these settlement sites were on the southern margin of the Great Ouse, southwest of Dairy Farm (*pers. comm*. Lisboa 2009).

Post Medieval/ Modern
Seven Post Medieval and modern features were exposed and excavated, four gullies and a pit in trench 31, a pit in trench 29 and a visible earthwork in trench 26. The earthwork could have been dug to aid drainage on a moderately flat area of floodplain, immediately north of the Gadsey Brook and appears to be part of major disturbance/ landscaping within the entire field. The gullies packed with animal bone may also be to do with drainage on the crest of the hill and the pit in trench 29 is likely to have been used as a watering hole for grazing animals.

Conclusions

The cropmarks and the geophysical survey had revealed the archaeological potential of the proposed development area. This evaluation and the 2005 evaluation (Beadsmoore 2005) have confirmed and refined the archaeology identified in the non-intrusive surveys, importantly in this evaluation it has eliminated natural anomalies.

The proposed monument '**M**' in trench 21, and the clusters of anomalies '**J**', '**K**' and '**L**', in trenches 20, 22, 23 and 24 and cluster '**W**' in trench 3, picked up by the geophysics were all revealed to be natural, tree throws and a large solution hollow (trench 21). Linear magnetic anomalies '**B**' and '**C**' in trench 34 were revealed to be non-existent as was the circular monument identified as '**U**' supposed to be in the southern end of trench 4. In conclusion most of the magnetic anomalies identified

within the geophysical survey which were not also represented as cropmarks are not archaeological features.

Anomalies identified in the geophysics that were confirmed by the evaluation, were a row of prehistoric post holes in trench 2 identified as '**V**' and the cultivation linears identified as furrows in trench 53. In addition to this, the modern earthwork in trench 26 confirms the geophysical survey

The evaluation revealed and identified archaeological activity that was only hinted at by an area of slightly raised magnetic susceptibility: the area of Late Bronze Age activity identified at the top of the northern ridge within trenches 32, 33, 34, 35 and 37 including linears, pits and post holes and the Post Medieval activity in trench 31. In addition to this the field system identified in trenches 13 and 14B in 2005 was visible in trench 4.

Archaeological features were also identified within field 4 which was not able to be geophysically surveyed. A Roman ditch in trench 29 and an isolated area of Mesolithic activity in trench 30 which was protected by a layer of buried soil.

Preservation of features is presumed to be better under the protective coverage of colluvium (Knight and Cooper 2004). The PDA is situated along on the course of the River Great Ouse, which is an area that has been well documented in terms of recurrent/ multi-period occupation (for example, Roxton (Ranson 2007) and Plantation Quarry (Dawson 1996)). With the coverage of colluvium, and the location of the PDA, a significant quantity of archaeological features would be expected to survive. The lack of discrete archaeological features and the good preservation of tree throws on the middle terrace suggest only minimal occupation occurred here and that the hengiforms and ring ditches are part of an occasional activity. In contrast, the archaeology at the top of the northern ridge suffers from recovery bias as the features are exposed and notably truncated by ploughing meaning only the deepest/ most robust have survived. The colluvial deposits have allowed us to examine the landscape in a three dimensional view rather than a two dimensional plan (French 2003), and potentially it gives us the foreknowledge of where there may be good and poor archaeological preservation of sites and deposits. It is also likely that features that are sealed by the colluvium are all prehistoric.

Palaeochannels were also identified which were not picked up by the geophysical survey in trench 56 but this is not surprising due to the coverage of the alluvial deposits. South of the Gadsey Brook, palaeochannels were also identified in trenches 102, 103 and 104, Dawson in 1996 also noted the silting up of palaeochannels at Plantation Quarry on the western margin of the Ouse within the present Willington Quarry, to the immediate West of Dairy Farm.

Although the quantity of subsurface features revealed was comparatively low, this evaluation has enhanced our understanding of the multi-period archaeological activity in the Ouse valley. Furthermore this information can be extrapolated and used to identify smaller discrete areas of activity within the PDA.

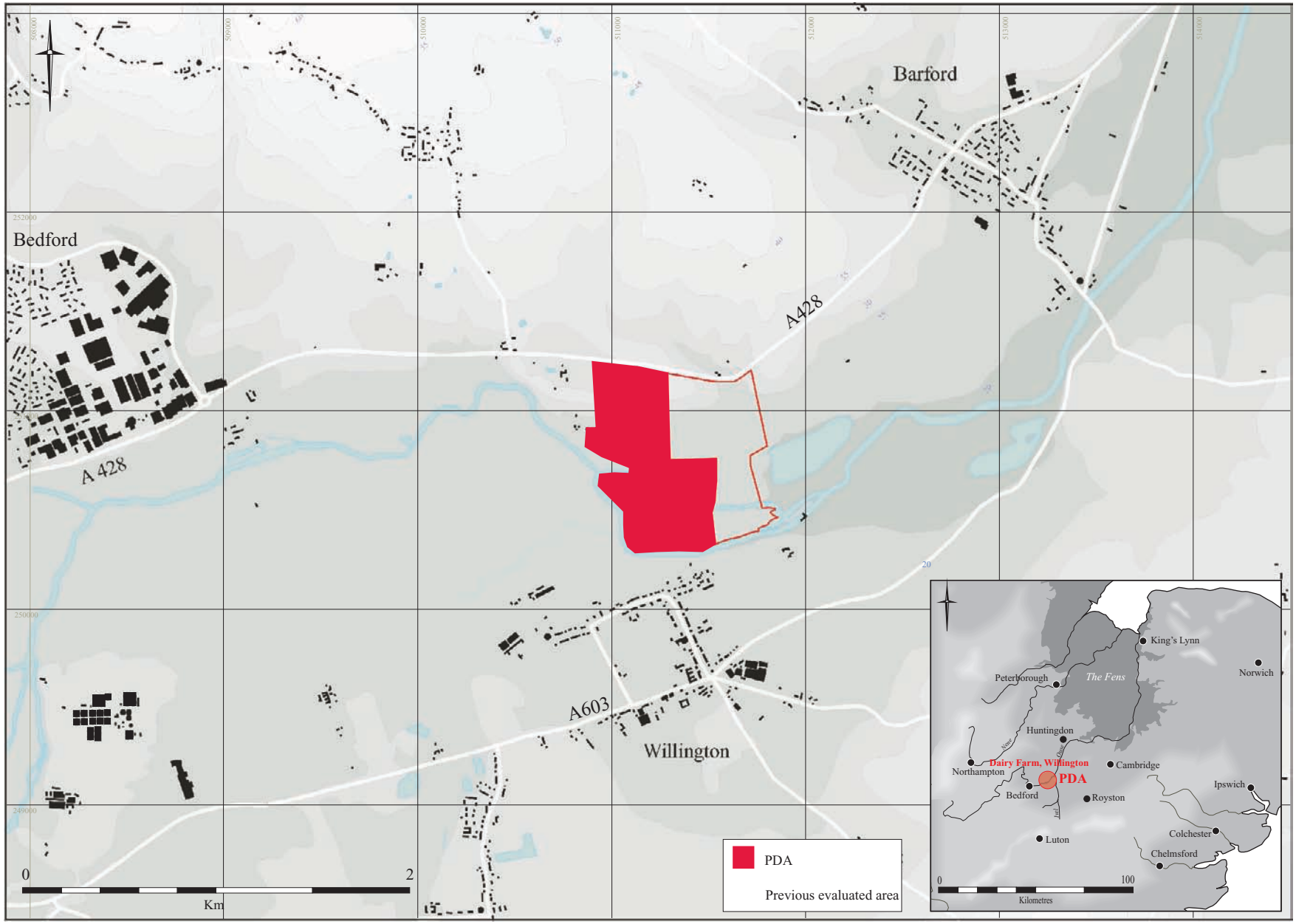


Figure 1. Location Plan

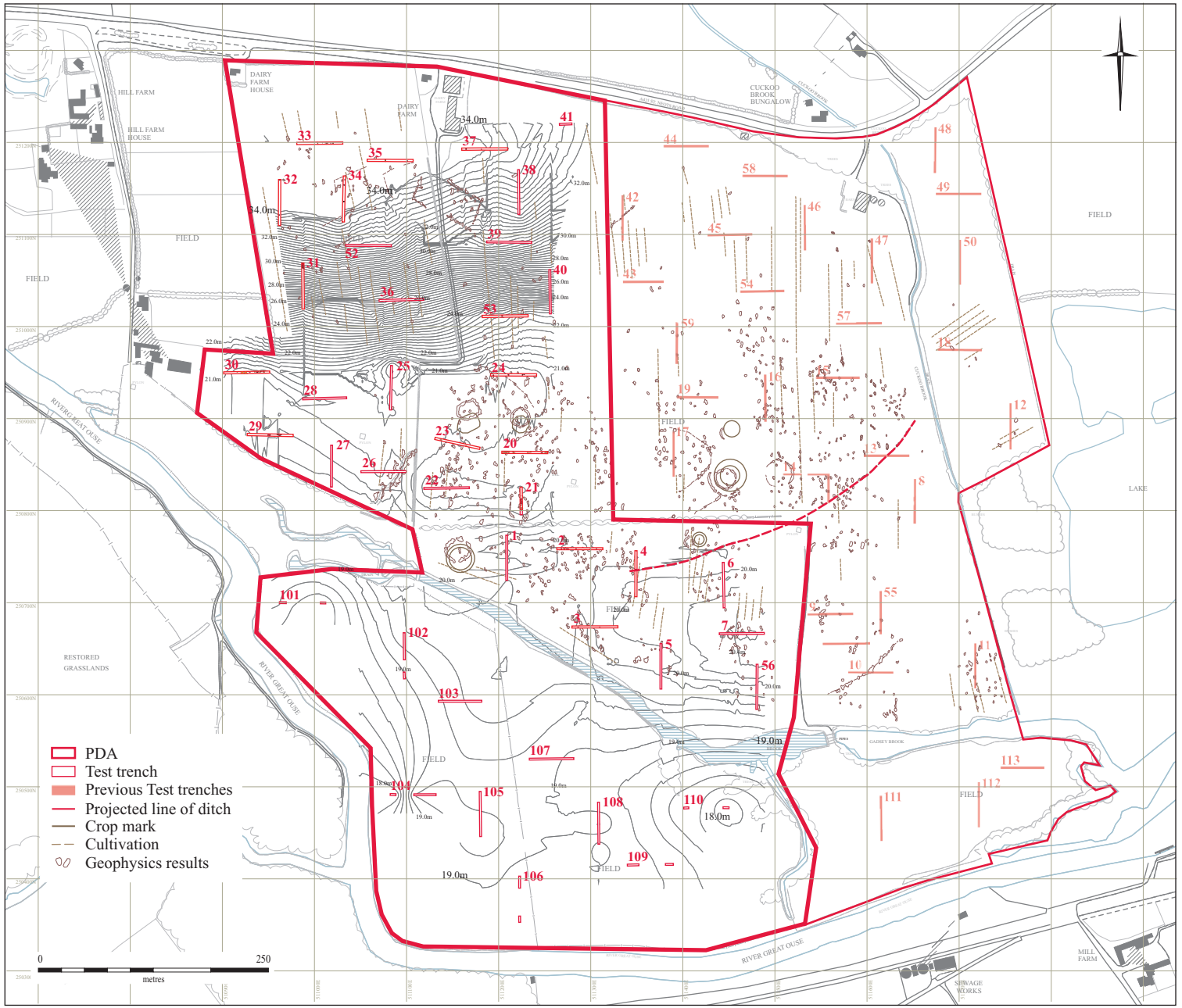


Figure 2. Trench location plan showing 2008 and 2005 trenches

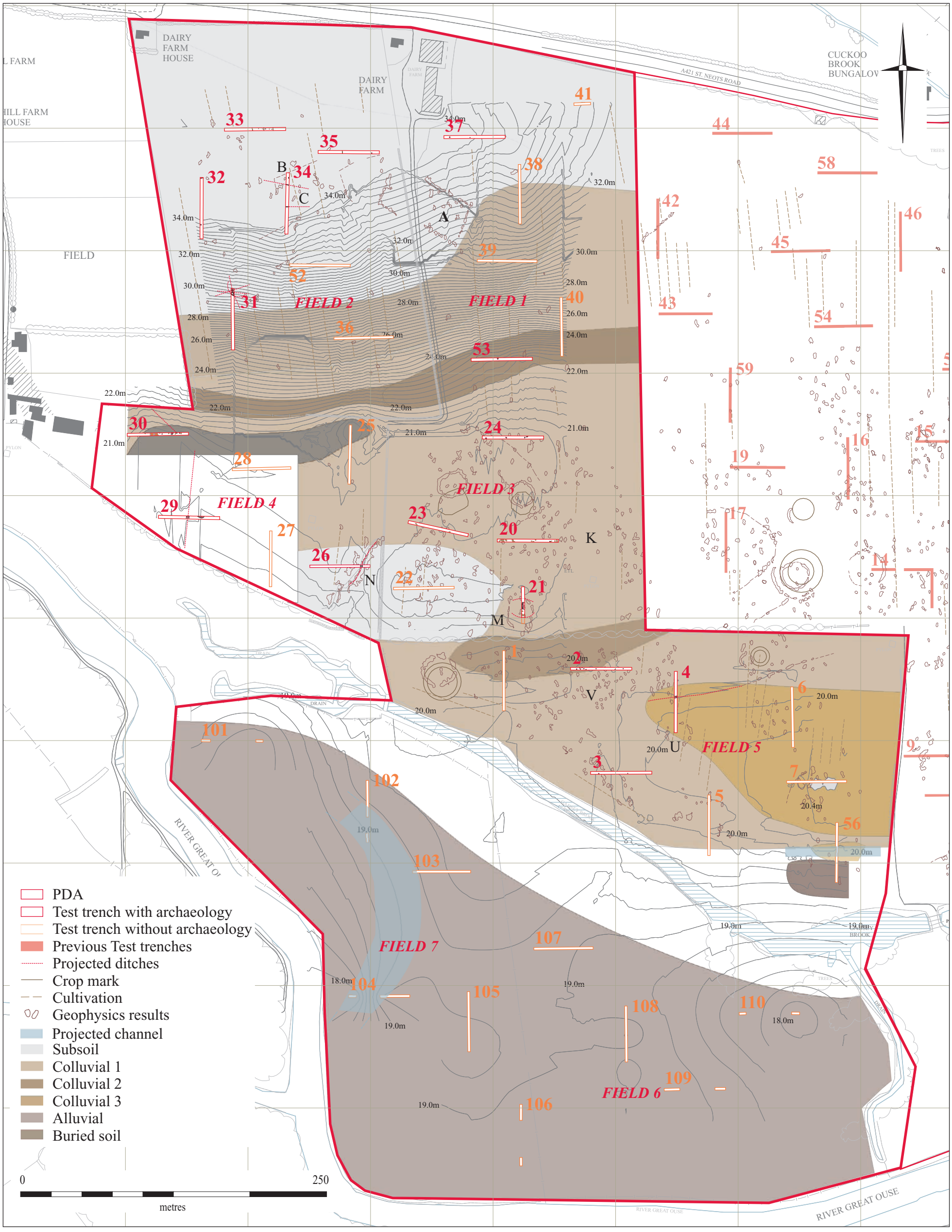


Figure 3. 2008 Trench plan and results with geological deposits

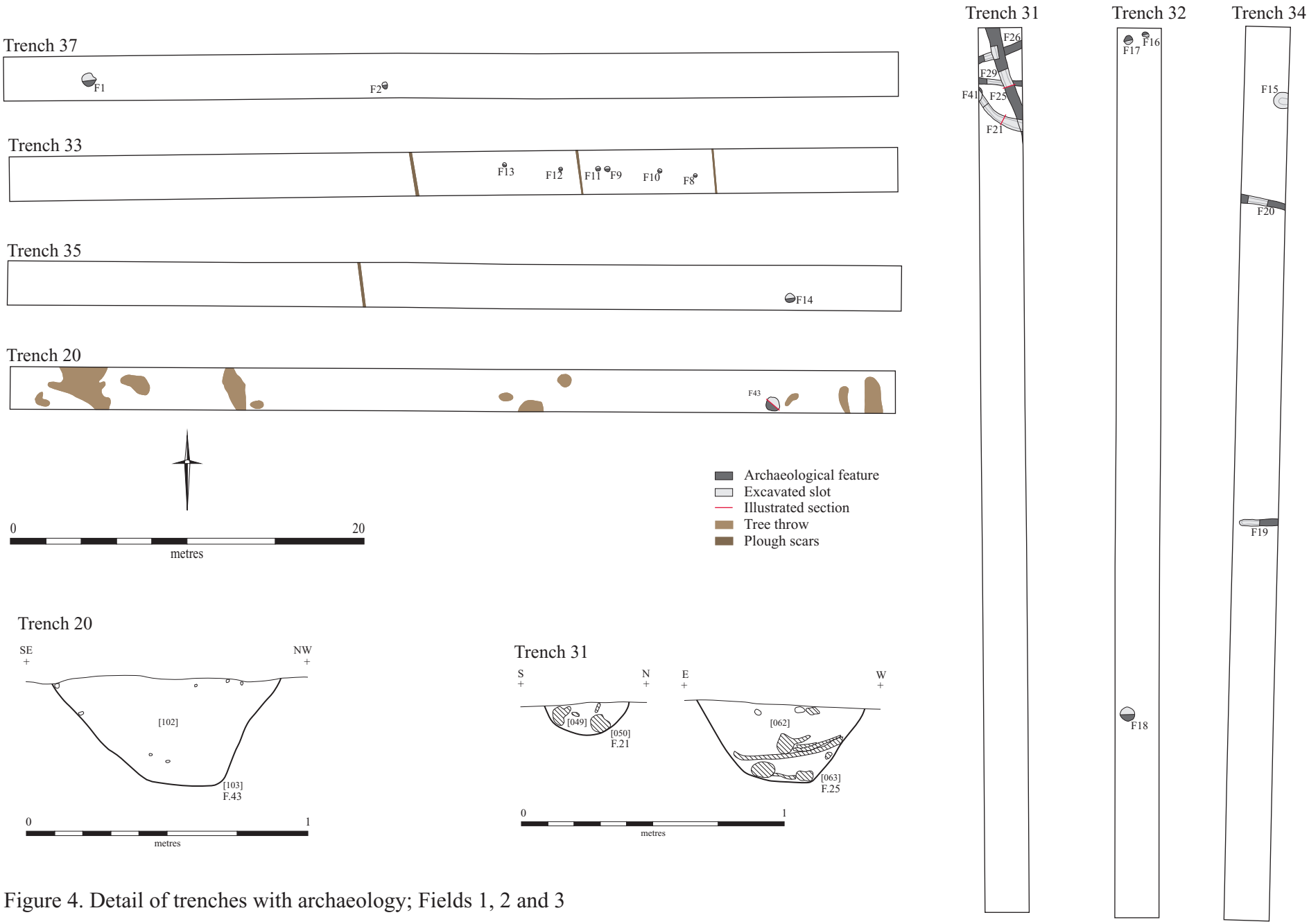


Figure 4. Detail of trenches with archaeology; Fields 1, 2 and 3

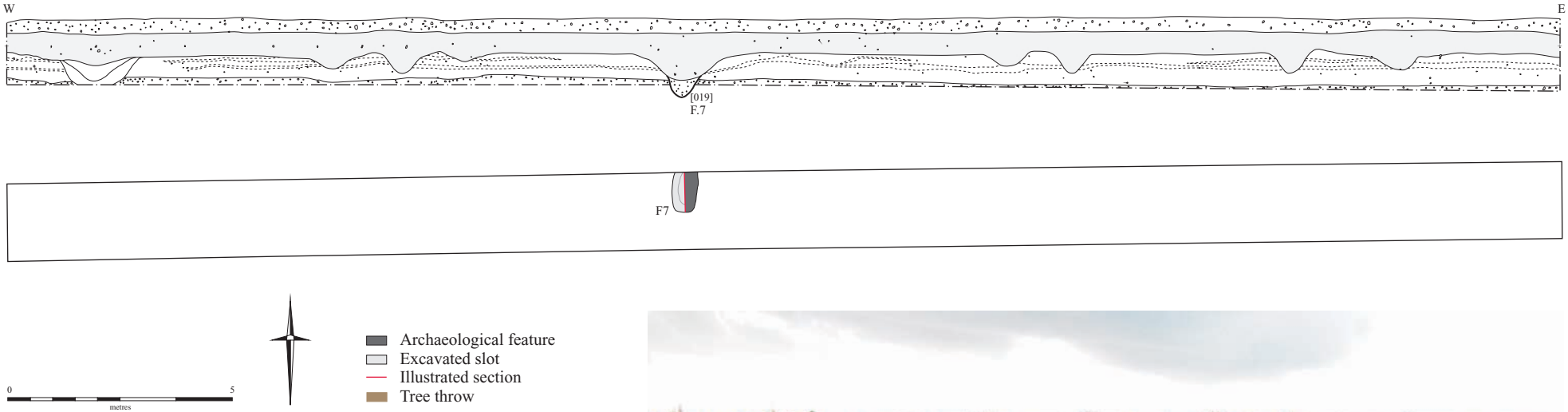
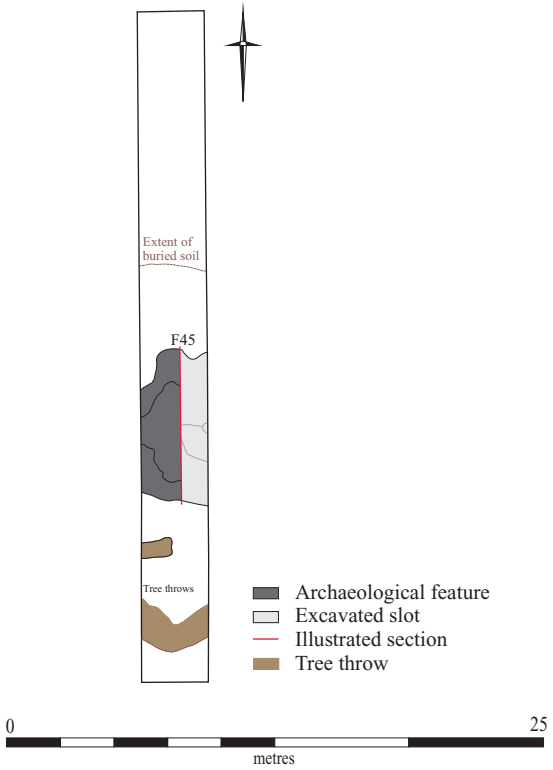


Figure 5. Trench 53, section, plan and photograph - Furrows



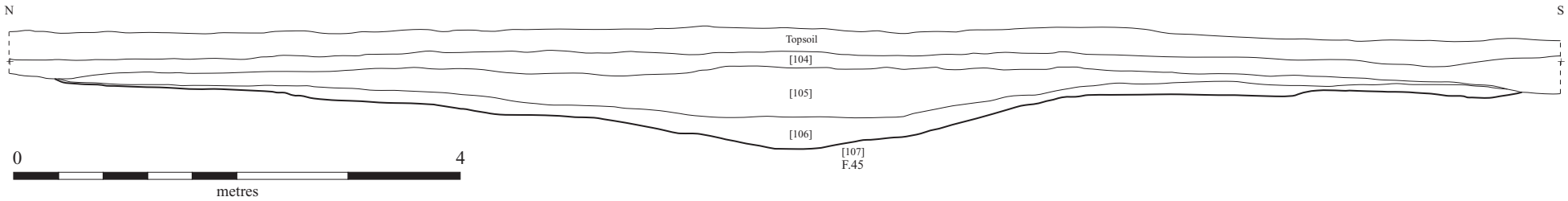


Figure 6. Trench 2, section, plan and photograph - Solution Hollow

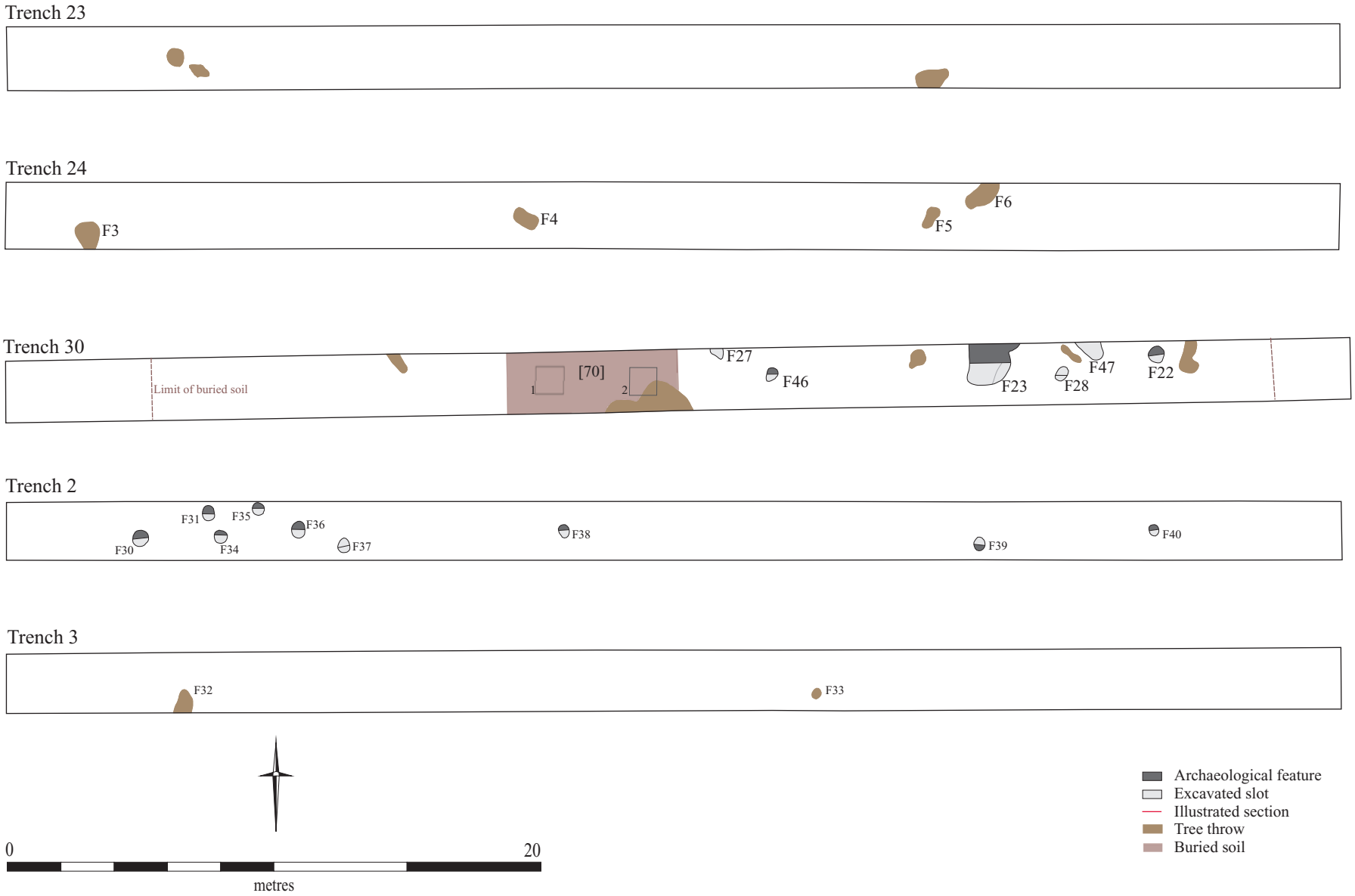


Figure 7. Detail of trenches with archaeology; Fields 3, 4 and 5

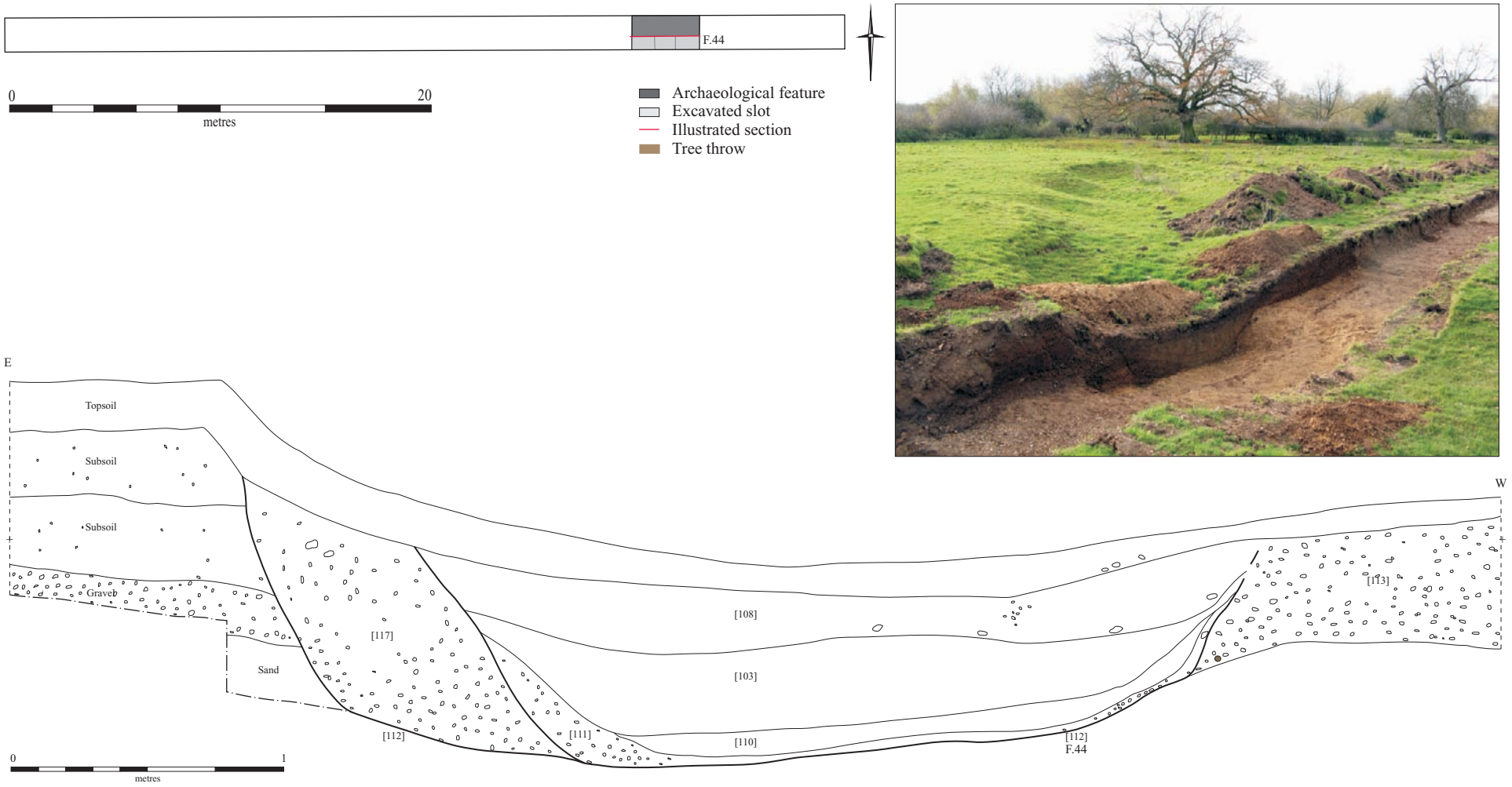
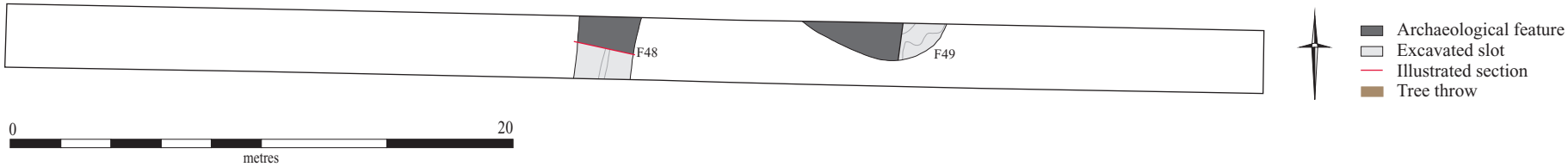


Figure 8. Trench 26, section, plan and photograph - Modern Earthwork



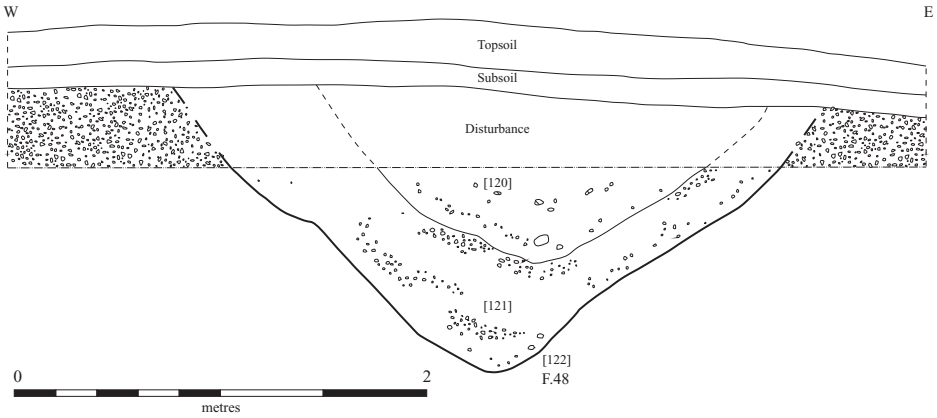


Figure 9. Trench 29, section, plan and photograph - Roman Ditch

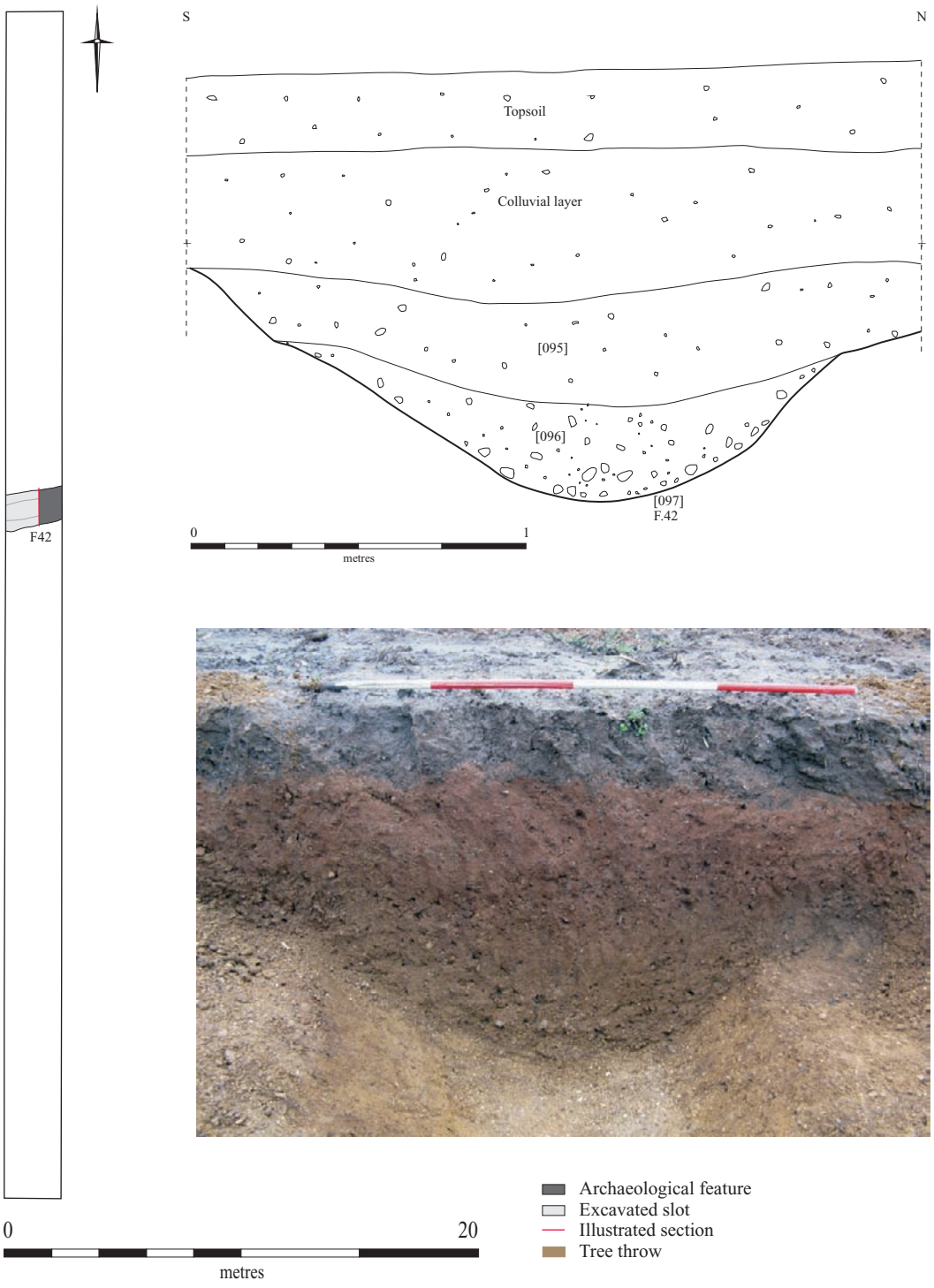


Figure 10. Trench 4, section, plan and photograph - Prehistoric Ditch

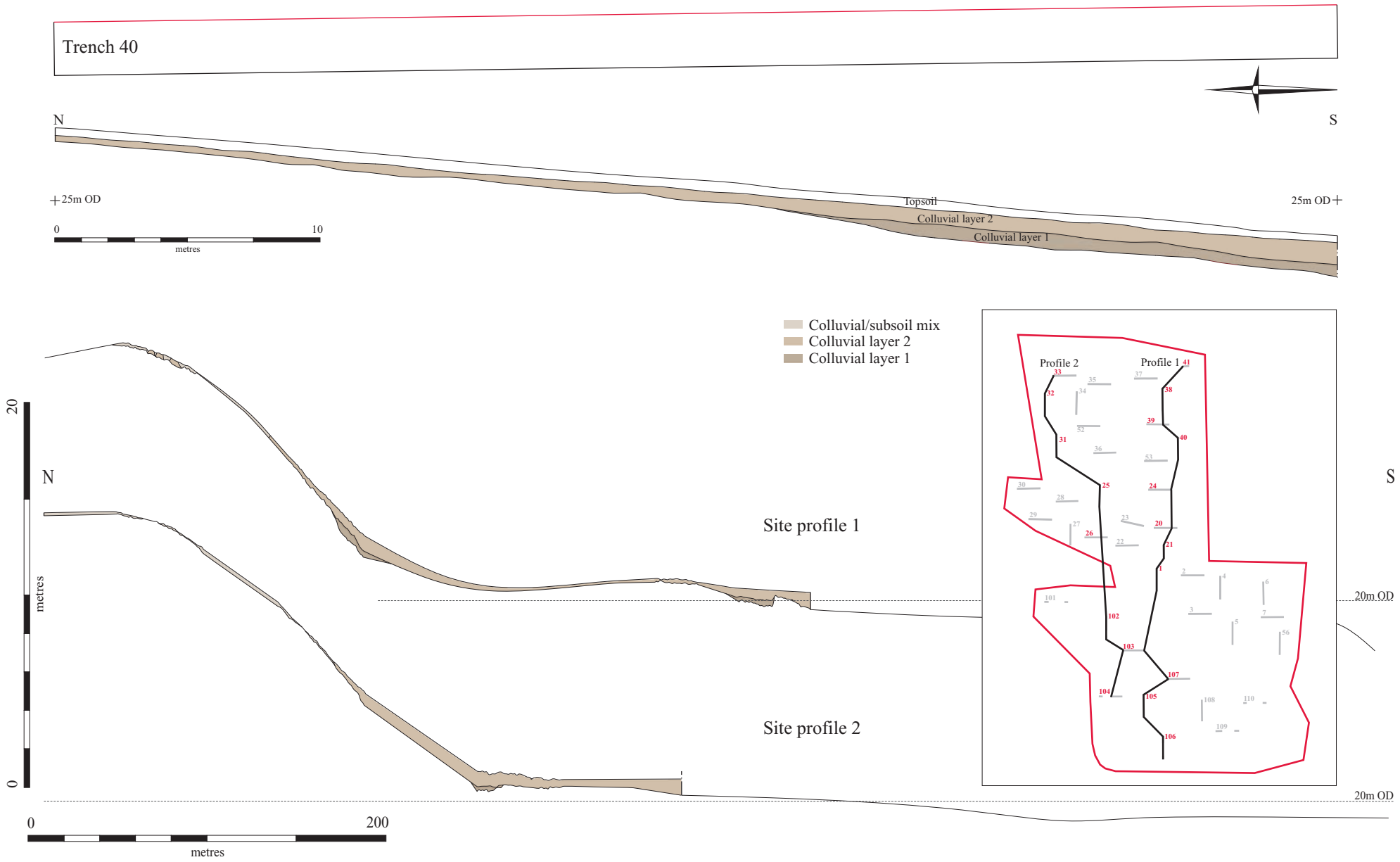


Figure 12. Trench 40 and two exaggerated site profiles 1 and 2 - Colluvial Layers

Appendices

Flint – *Lawrence Billington*

The excavations at Willington recovered 54 worked flints, weighing a total of 300.8g. Three pieces (6.6g) had been burnt. The excavation of cut features and buried soil deposits recovered 44 flints (81% of the assemblage). A further nine pieces were recovered from an artefact survey through bucket sampling of topsoil, peat and colluvial deposits encountered during trenching. A single flint was retrieved from sub soil deposits in trench 29.

The condition of the assemblage was varied. The flint from bucket sampled deposits invariably exhibited considerable post depositional edge damage and contrasted with the material from cut features which was generally in a fresh condition. 22 flints (43%) showed evidence for surface alteration in the form of a light blue patina. This patination was observed more frequently on diagnostically earlier pieces but the correlation was not strong enough to infer relative date from patination alone.

Artefact Survey

The flints recovered from bucket sampling and casual collection are listed in table 2. Very little flint was recovered overall, with an absence of diagnostic types. Five small waste flakes were recovered, all had been hard hammer struck from unprepared platforms and reflect a casual and expedient approach to core reduction, characteristic of later prehistoric flint working from the later Neolithic onwards. The small size of the removals and the dominance of partly cortical flakes suggests the use of small nodules of raw material, the cortex was generally thin and abraded suggesting a source from secondary deposits, perhaps from the gravel terraces of the Ouse in the local area. A single irregular flake core was recovered from colluvial deposits in Trench 1. Made on a small badly flawed nodule it appears to have been discarded following the removal of a few irregular flakes and is also suggestive of later prehistoric flint working. A small end scraper was recovered from Trench 29, this was an almost completely cortical flake with neat and regular retouch on the distal end and is probably of later Neolithic or Early Bronze Age date.

Trench	**Deposit type**	chip	chunk	secondary flake	end scraper	irregular core	**Totals**
1	Colluvium	1		2		1	4
3	Top soil			1			1
4	Top soil			1			1
29	Sub soil				1		1
34	Top soil		1				1
39	Top soil	1					1
106	Peat			1			1
	Totals	2	1	5	1	1	**10**

Table 2: Worked Flint From The Artefact Survey

Cut Features and Buried Soil

The worked flint recovered from the excavation of cut features and buried soil deposits are listed in table 3. Two pits, F. 15 in Trench 34 and F. 1 in Trench 37, each produced two undiagnostic flint flakes, showing similar traits to those recovered from the artefact survey.

The flint from Trench 30 was of a different character to that encountered in the artefact survey. Three tree throw features sealed beneath buried soil deposits produced small amounts of flint with a surprising number of diagnostically Mesolithic artefacts. A small obliquely blunted microlith of Jacobi's type 1a (Jacobi 1978) was found in tree throw F. 23, whilst a proximal microburin (a waste product from the production of microliths) was recovered from tree throw F. 47. The remaining flint from the tree throw features was consistent with a Mesolithic date, including several fine blades from F. 27 and F. 23 accompanied by soft hammer struck flakes, often with fine narrow scars on their dorsal surfaces and prepared platform edges. These traits suggest a formal core reduction strategy geared towards the production of narrow flakes and blades, the hallmark of Mesolithic flint working. The flint from the buried soil sealing the tree throw features consisted of a single flint blade, suggestive of a Mesolithic or earlier Neolithic date, together with a well reduced flake core of discoidal form. Its well worked out form together with some traces of platform preparation suggest a Mesolithic or Neolithic date.

Trench	**Feature number**	**Feature type**	chip	chunk	primary flake	secondary flake	tertiary flake	tertiary blade	microburin	microlith	core rejuvenation flake	core	core fragment	**Totals**
29	48	Ditch	2	2		12	5	1					1	23
29	49	Pit					1				1			2
30	23	Tree throw	1		1	2	3	1		1				9
30	27	Tree throw						1						1
30	47	Tree throw					1		1				1	3
30		Buried soil						1				1		2
34	15	Pit				2								2
37	1	Pit				1	1							2
		Totals	3	2	1	17	11	4	1	1	1	1	2	**44**

Table 3: Worked Flint From Features and Buried Soil Deposits

Two features from Trench 29 produced worked flint. Two flints were found in pit F. 49; probably residual pieces becoming incorporated into the backfill of the feature. One of these flints was an undiagnostic flake whilst the other was a core tablet, a type of core rejuvenation flake associated with the maintenance of dedicated blade and narrow flake cores, characteristic of earlier Neolithic or Mesolithic technologies. Roman ditch F. 48 contained 23 residual worked flints. Most of these are undiagnostic hard hammer struck flakes which probably represent later prehistoric activity. Mesolithic or earlier Neolithic technologies are represented by a broken blade and several narrow flakes, two with carefully prepared platform edges.

Summary and Discussion

Much of the material from the excavations takes the form of a low density of later prehistoric flint work, incorporated into surface deposits and the fills of later features. A single scraper, the only diagnostic piece of later prehistoric flint, suggests a later Neolithic or Early Bronze Age date for at least some of this material.

The most interesting aspect of the assemblage was the recovery of a small amount of Mesolithic flint work from tree throw features in Trench 30, apparently uncontaminated by later material. Residual blade based flint from the features in Trench 29 suggests the material in the tree throws may be part of a relatively discreet area of Mesolithic activity around Trenches 29 and 30. In terms of dating, obliquely blunted points such as the microlith from tree throw 23 are thought to have been made throughout the Mesolithic period, but the diminutive size of this piece is most consistent with later Mesolithic forms (Pitts and Jacobi 1979).

Prehistoric Pottery – *Mark Knight*

Five different features (including one residual context) produced a small assemblage of 76 sherds weighing 519g (MSW 6.8g). The condition of the material was good with multiple sherds retaining burnished exteriors. Three main fabric types were identified and these were differentiated by opening materials or inclusions: flint, grog or shell. The majority of the sherds were very hard and most belonged to relatively thin-walled vessels (*c*. 5mm). Feature sherds were rare (7 rim fragments) and plain body fragments dominated.

Feature	Context	Number	Weight (g)	MSW (g)
1	1	42	286	6.8
14	32	1	6	6.0
15	34	31	221	7.1
19	45	1	3	3.0
29	64	1	3	3.0
Totals:	*5*	*76*	*519*	*6.8*

Table 4: Prehistoric Pottery Assemblage Breakdown

The bulk of the material came from just two features, F.1 and F.15. The first of these, Pit F.1, yielded 42 sherds of which 26 were flint tempered, nine shell tempered and four grog, whilst all of the 31 pieces within F.15 were shell tempered. Both features contained rim fragments and in both cases these consisted of simple flattened forms belonging to either small-medium sized jars or bowls or very small cups with slightly everted profiles. Many of the rims were roughly finished. Pit F.15 contained the greatest number of burnished pieces although this bias could in part be explained by the fact that it also contained the greatest number of shell tempered pieces. Finger marks and rough 'fluting' characterised the external surfaces of the coarse wares. The pottery from both pits belongs to the Post Deverel Rimbury tradition and probably its plain ware phase (Late Bronze Age). The single sherds from F.14, F.19 and F.29 were also PDR.

Roman Pottery – *Katie Anderson*

A small quantity of Roman pottery, totalling 12 sherds and weighing 169g were recovered from the evaluation. All of the material was examined and details of fabric, form, decoration, EVE (estimated vessel equivalent) and date were recorded.

Most of the sherds came from a single feature, a Roman ditch, Feature 48. This totalled 11 sherds weighing 156g and representing 0.29 EVEs. This included one Hadham red-slipped mortaria, a fine sandy greyware straight-sided dish and a shell-tempered jar. There were also two imitation black-burnished ware sherds. The pottery from this feature broadly dates 2-4th century AD, although the presence of the Hadham red-slipped mortaria suggests a 3rd-4th century AD date is appropriate.

A single shell-tempered sherd was recovered from the bucket sampling from Trench 5. This sherd was from a beaded rim jar, weighing 13g and dating 2nd-4th century AD.

The small quantity of Roman pottery recovered suggests this was not a dense area of occupation during the Roman period, instead lying on the periphery of a settlement. The pottery suggests a 2nd-4th century AD date for occupation. The material was primarily locally produced including several Harrold shell-tempered sherds. There were no imported wares, although given the size and date of the assemblage this is not unexpected.

Assessment of Bulk Environmental Samples – *Rachel Ballentyne*

Very limited charred and waterlogged plant remains have been recovered. The charred plants from F.1 are comparable with later Bronze Age to Roman activity, only verifiable by radiocarbon dating. Waterlogged peat [129] in the river valley shows no sign of human activity and represents wet alder woodland close to an active fluvial system. Possible pond F.45 has only traces of waterlogged biota, so has not been consistently wet since infilling. The other three samples, from F.15, F.45 and F.48, include a few biological items unsuitable for further comment.

Methodology

Six samples were selected for assessment, representing a range of feature types across the evaluation area. All samples have been processed using a modified version of the Siraf flotation machine (Williams 1973), with flots collected in a 300µm sieve and the heavy residue washed over 1mm mesh. Both flots and residues have been dried prior to analysis, with the exception of those from peat layer [129] that was clearly waterlogged. Flots have been sorted using a low-power binocular microscope (x6–40). For this assessment, only residue components greater than 4mm have been sorted by eye. The smaller 1–4mm fractions have been stored should they be required at a later date.

Taxanomic nomenclature in this report follows Stace (1997) for plants, and an updated version of Beedham (1972) for molluscs. All raw data is listed in Table 5 at the end of this report.

Preservation

Only very low amounts of charred and waterlogged plants are present, although preservation quality is good, probably due to the clayey soil matrix; as also noted by de Vareilles (de Vareilles 2005) from assessment of samples on adjacent land to the east. Mollusc shells are also well preserved, but occur only in deeper features where there is evidence for waterlogging – it is likely that proximity to the alkaline water table has favoured shell survival.

Results and Discussion

The following results are discussed in order of trench number.

Tr.21 – Pond F.45 [106] <7>
There are no charred plants other than low amounts of heavily fragmented wood charcoal. This feature must have once held water, although not continuously since infilling, as low amounts of organic plant fragments survive. Most frequent are unidentifiable twigs and wood, accompanied by one alder cone fragment (*Alnus glutinosa*) and a seed of greater stitchwort (*Stellaria holostea*). Both plants favour damp soils, the latter usually amongst woods and hedgerows. A small number of

aquatic mollusc shells confirm a past water body – *Bithynia leachii, Valvata cristata* and *Hippeutis complanatus*.

Tr.29 – Roman ditch F.48 [121] <8>
One charred grain of emmer or spelt wheat (*Triticum dicoccum /spelta*) and a few fragments of charcoal are present. The wheat type is consistent with a prehistoric to late Roman date.

Tr.31 – Possible post-medieval gully F.21 [049] <5>
There are numerous fragments of unburnt animal bone, accompanied by a few pieces of charcoal and burnt clay.

Tr.34 – Pit F.15 [034] <1>
One barley grain (*Hordeum vulgare* ***sensu lato***) and a moderate amount of wood charcoal are present. There are also fragments of burnt and unburnt bone, potsherds, burnt clay and burnt stone, which suggests domestic refuse. The plant remains are too few to provide evidence of date or activities.

Tr.37 –Pit F.1 [001] <3>
The greatest quantity of charred plant remains were recovered from this pit, which contains a mixture of cereals and probable arable weeds. The cereal species are hulled 6-rowed barley (*Hordeum vulgare* ssp. *vulgare*), identified from its twisted grains, and spelt wheat (*Triticum spelta*), which is confirmed by the presence of a single glume base. The wild seeds are dominated by fat-hen (*Chenopodium album*), a common arable weed and once also a food in its own right, with two of black bindweed (*Fallopia convovulus*) and single seeds of blinks (*Montia fontana* ssp. *chondrosperma*), knotgrass (*Polygonum aviculare*) and mallow (*Malva* sp.). There are also numerous unburnt bone fragments, potsherds, burnt flints and a fragment of burnt stone, again suggesting mixed refuse.

Hulled six-rowed barley is found during later prehistory and well into the historic period. Spelt wheat first occurs in the Bronze Age, and is found rarely after the Roman period in Britain, as noted in the introduction, the dating could only be verified by radiocarbon dating, with confidence in the integrity of the plant remains within this context.

Tr. 106 – Peat layer [129] <2>
No charred plant remains are present, but there is a good range of waterlogged plants – suggesting this location has been continuously wet since peat formation. The plants are dominated by alder seeds and cones, and many twig fragments are also comparable to alder. Seeds of sedges (*Carex* spp.), buttercups (*Ranunculus acris/ bulbosus/ repens*) and black mustard (*Brassica nigra* **type**) are consistent with damp land; seeds of brambles (*Rubus* subgen. *RUBUS*) and a complete hazelnut (*Corylus avellana*) could represent shrubs growing amongst the alder trees. A few plants are aquatics and semi-aquatics – white and yellow water-lilies (*Nymphaea alba; Nuphar lutea*) indicate fairly deep still to slow-flowing water, and common club-rush (*Schoenoplectus lacustris*) thrives along the margins of lakes, ponds and rivers.

There are also good mollusc remains from [129] that provide more detail regarding the aquatic environment. The most frequent taxa are *Theodoxus fluviatilis* and

Bithynia tentaculata, which together suggest the peat formed on the margins of a large, slow-flowing body of water. This interpretation is entirely consistent with the proximity of the River Ouse, and the peat probably represents stagnation and silting up of an early channel of the river. The lack of any charcoal or other artefactual remains makes it impossible without radiocarbon dating to relate this context chronologically to the archaeological features identified elsewhere.

Conclusions

These results broadly confirm the earlier findings of de Vareilles (de Vareilles 2005), with a charred plant assemblage that is sporadic although well-preserved where it does occur. The samples from pond F.45 and river peat [129] confirm that there is potential for waterlogged preservation in deeper features, and that such locations are also most likely to contain good mollusc remains. Due to the very sparse charred assemblage it is not possible to make detailed observations on activity types or phases, although the spelt wheat points to a later prehistoric to Roman origin for much of the assemblage.

Trench		Tr.21	Tr.29	Tr.31	Tr.34	Tr.37	Tr.106
Feature		**F.45**	**F.48**	**F.21**	**F.15**	**F.1**	**-**
Context Number		[106]	[121]	[49]	[34]	[001]	[129]
Sample Number		<7>	<8>	<5>	<1>	<3>	<2>
Feature Type		pond	ditch	gully	pit	pit	peat layer
Period		**-**	**Roman**	**?post-med**	**-**	**?neolithic**	**-**
Sample volume/ litres		10 L.	12 L.	13 L.	12 L.	8 L.	11 L.
Fraction of flot scanned		1	1	1	1	1	1
Taxanomic Name	**English Name / mollusc habitat**						
CHARRED CEREAL GRAIN							
twisted, hulled *Hordeum vulgare* ssp. *vulgare* grain	hulled 6-rowed barley grain					2	
straight, hulled *Hordeum vulgare* L. grain	hulled domesticated barley grain					1	
hulled *Hordeum vulgare* L. grain	hulled domesticated barley grain					3	
Hordeum vulgare L. grain	domesticated barley grain				1	1	
Triticum cf. *spelta* L. grain	spelt wheat grain					1	
Triticum dicoccum Schübl./ *spelta* L. grain	emmer/spelt wheat grain		1				
Triticum/*Secale cereale* grain	wheat grain or oat seed					1	
cereal indet. grain						1	
CHARRED CEREAL CHAFF							
Triticum spelta L. glume base	spelt wheat chaff					1	
CHARRED NON-CEREAL FRUITS AND SEEDS							
Chenopodium album L.	fat-hen					17	
Chenopodiaceae indet.	Goosefoot Family					1	
Montia fontana ssp. *chondrosperma* (Fenzl) Walters	blinks					1	
Polygonum aviculare L.	knotgrass					1	
Fallopia convolvulus (L.) Á. Löve	black-bindweed					2	
Malva sp.	mallows					1	
Poaceae indet. culm base with roots	Grass Family stem-base with roots					1	
WATERLOGGED PLANT REMAINS							
Nymphaea alba L.	white water-lily						- w
Nuphar lutea (L.) Sm.	yellow water-lily						+ w
Ranunculus cf. *acris* L./*repens* L./*bulbosus* L.	*cf.* meadow/creeping/bulbous buttercup						+ w
Alnus glutinosa (L.) Gaertn.	alder seed						+++ w
Alnus glutinosa (L.) Gaertn. cone	alder cone	- w					++ w
Corylus avellana L. nutshell fragment	hazel nutshell fragment						- w
Stellaria holostea L	greater stichwort	- w					
Brassica nigra **type**	black mustard [coarse-textured seed]						- w
Rubus subgen. *RUBUS*	brambles						- w
Schoenopletus cf. *lacustris* (L.) Palla	common club-rush						+ w
lenticular *Carex* spp.	flat-seeded sedges						- w
trigonous *Carex* spp.	triangular-seeded sedges						+ w
small Poaceae indet. culm node [<3 mm diam.]	Grass Family small stem-joint						+ w
wood fragments indet.		+ w					+++ w
buds and twigs indet.		+ w					+++ w
CHARCOAL							
estimated volume charcoal >1mm/ millilitres		< 1 ml.	< 1 ml.	< 1 ml.	2 ml.	3 ml.	0 ml.
large charcoal [>4mm]					+	+	
med. charcoal [2-4mm]		-			++	++	
small charcoal [<2mm]		+	+	+	++	+++	
MOLLUSCS							
Theodoxus fluviatilis (L.)	moving water - rivers, streams, lake edges						++
Bithynia tentaculata (L.)	quiet rivers & still but large waters						+++
Bithynia leachii (Sheppard)	quiet rivers & still but large waters	-					++
Valvata cristata (Müller)	slow, muddy water with vegetation	-					-
Lymnaea peregra (Müller)	most freshwater environments						+
Lymnaea sp.	damp to wet						-
Planorbis sp.	water						-
Hippeutis complanatus (L.)	most hard water environments	-					
Trichia hispida (L.) / *striolata*	widespread on land						-
OTHER ARTEFACTS							
burnt bone fragments					-		
bone fragments				+++	++	+++	-
burnt clay				-	-		
potsherd					+	++	
burnt flint						+++	
burnt stone					-	-	
INTRUSIVE BIOTA							
Betula pendula Roth	silver birch						- u/w
Chenopodium album L.	fat-hen	- u/w					
Atriplex prostrata Boucher ex DC./ *patula* L.	spear-leaved/common orache				- u		- u/w
Polygonum aviculare L.	knotgrass				- u		
Carduus/*Cirsium* sp.	thistles		- u				
roots		- u/w		+ u	++ u	+ u	
Ceciliodes acicula	burrowing snail				- u		

Table 5: Environmental Raw Data

Key: - 1 or 2 items, + less than 10 items, ++ 10 – 50 items, +++ more than 50 items
u untransformed, probably modern w waterlogged

Faunal Remains – *Vida Rajkovača and Krish Seetah*

Introduction

This report outlines the results following analysis of the faunal remains from Dairy Farm South, Willington, Bedfordshire, with excavations undertaken by the Cambridge Archaeological Unit. This report will briefly outline the methods used for analysing the material, followed by the results elicited and discussion thereof. Analysed material had been recovered from prehistoric features (Middle to Late Bronze Age), one Roman ditch and a post-medieval gully. Several main sub-divisions based on chronology of the material have been created in order to study the site (Table 6).

Groups	**Contexts (out of 12)**	**%**
Group One: Middle Bronze Age	1	8.3
Group Two: Late Bronze Age	6	50
Group Three: Romano-British	1	8.3
Group Four: post-medieval	4	33.4

Table 6: Sub-division of Animal Bone Based on Chronology of the Material

Sub-divisions based on chronology of the material will be discussed separately when the special attention will be paid to species representation within each of the groups of features. The assemblage as a whole totalled some 1123 assessable fragments; 881 were identified to element and species group (71.5%) and 156 (17%) further identified to species.

Method

The zooarchaeological investigation followed the system implemented by Bournemouth University with all identifiable elements recorded (NISP: Number of Identifiable Specimens) and diagnostic zoning (amended from Dobney & Reilly 1988) used to calculate MNE (Minimum Number of Elements) from which MNI (Minimum Number of Individuals) was derived. Aging of the assemblage employed a combination of Grant's (1982) tooth wear stages and fusion of proximal and distal epiphyses (Silver 1969). Metrical analysis followed von den Driesch (1976). Elements from sheep and goats were distinguished, where possible, based on criteria established for the post-cranial skeleton by Boessneck (1969) and teeth by Payne (1985) and Halstead *et al* (2002). Identification of the assemblage was undertaken with the aid of Schmid (1972), Serjeantsen & Cohen (1996) and reference material from the Cambridge Archaeological Unit, the Grahame Clark Zooarchaeology Lab, Dept. of Archaeology in Cambridge. Taphonomic criteria including indications of butchery, pathology, gnawing activity and surface modifications as a result of weathering were also recorded when evident.

Results

Condition of the assemblage: preservation & fragmentation

The assemblage was hand collected and overall exhibited excellent preservation. Of 12 separate contexts studied for this site only four were recorded as 'Poor' indicating

that extensive weathering, bone surface exfoliation and other erosive damage had occurred to the bone. In contrast, eight contexts showed 'Moderate' to 'Good' levels of preservation. The actual overall state of preservation is best illustrated when we observe the specific numbers of fragments that these figures correspond to: some 1056 bones (94%) showed a level of preservation that was good, compared to 48 bones (4%) that were moderate or mixed and just 19 fragments (2%) that were poor.

Occurrences of erosion, weathering or concretions were negligible with only two bones (0.17%) noted to have been affected by one or other of these taphonomic conditions. The condition of this assemblage can be considered ideal for zooarchaeological investigation as the bone surface had undergone minimal damage; thus butchery marks and pathologies were easily recognisable and have been recorded where evident. Unfortunately, the bones have also undergone a very high degree of fragmentation, but the number of bones from which measurements could be taken has been greatly reduced.

Middle Bronze Age

Feature 42 was slightly curved ditch potentially dated to Middle Bronze Age by association with the prehistoric field system located in the 2005 evaluation. This feature produced one fragmented cow metatarsal bone which showed signs of heavy weathering and erosion.

SPECIES	NISP	%NISP	MNI
Cow	1	100	1

Table 7: NISP and MNI Counts – MBA Contexts

Late Bronze Age

Features 1, 14, 15 and 19 (three pits and one gully) contained early Post Deverel Rimbury pottery dated c. 1000BC-800BC. Surrounding features 11 and 20 were also dated to Late Bronze Age, as it seems likely for this to be one area of activity at the top of the ridge. Environmental samples taken from features 1 and 15 produced some unidentifiable and fragmented animal bone remains. Two cattle bones and one pig bone were found burnt. Feature 1 was a large pit and yielded 36 bones. Large and medium sized mammals seem to be equally represented, although the sample size is too small to suggest cattle-based or sheep-based economy. However, it seems that both cattle and ovicaprids played an important role in Late Bronze Age economy, both being 'food species' and both being kept for secondary products such as milk, traction (cattle) and wool (sheep).

SPECIES	NISP	%NISP	MNI
Ovicaprid	4	45	1
Cow	4	45	1
Pig	1	10	1
ULM	29	-	-
UMM	31	-	-
UUM	20	-	-

Table 8: NISP and MNI counts-LBA contexts

Key: UMM & ULM = Unid. Medium and Large Mammal / UUM = Unid. Fragment. NB: Species percentages are out of 9. These differ from the unidentified counts as these are calculated on the basis of element identification (for UMM & ULM) and total fragments (for UUM) (corresponding to Σ in brackets).

Roman

Late Roman ditch found in trench 29 dated to 3rd / 4th century produced considerable amount of bone. Large mammals dominate the assemblage, followed by ovicaprids and dog. Of the wild species only red deer was represented by five elements (loose teeth and maxillae) and one individual animal. No fish, bird or small mammal remains were recovered. A number of bones were only possible to assign to a size category, due to the large fragmentation. The importance of cattle in the Romano-British economy is well-known and large proportions of cattle might imply that the site was Romanised (Grant 1989). Although the sample size is small, it could be suggested that these results fit well with this view.

SPECIES	**NISP**	**%NISP**	**MNI**
Cow	19	70.4	3
Horse	1	3.7	1
Ovicaprid	1	3.7	1
Dog	1	3.7	1
Red deer	5	18.5	1
ULM	146	98 (Σ=149)	-
UMM	3	2 (Σ=149)	-
UUM	62	26 (Σ=238)	-

Table 9: NISP and MNI counts-Roman contexts

Key: UMM & ULM = Unid. Medium and Large Mammal / UUM = Unid. Fragment. NB: Species percentages are out of 27. These differ from the unidentified counts as these are calculated on the basis of element identification (for UMM & ULM) and total fragments (for UUM) (corresponding to Σ in brackets).

Post Medieval

It would be a mistake to over-interpret the high fragment count of horse as this actually represents a small number of individual animals. However, the horse component does deserve further discussion. It has been suggested that cattle, rather than horse, would have been the more important beast of burden until the medieval period when improvements in horse morphology, and harness technology, led to larger more effective working animals (Langdon 1984). At sites such as Babraham this has been borne out in the assemblage with small, pony-sized equids recovered that stood approximately 13 hands high. However, the measurements taken from this assemblage have indicated animals that are considerably larger, one individual had a stature of 15 hands (derived from a metatarsal from [62]) and the other stood at 16.3

hands (derived from a metacarpal from [49]). The former falls into the range of a 'light riding horse' while the later actually falls into the range of a heavy draft animal. However, draft horses have a particularly robust bone architecture that is characterised by large and pronounced muscle attachments. The horses recorded herein, while clearly large individuals, did not display this robusticity. Therefore, they are best characterised as 'large riding horses'.

This site was also interesting due to the presence of younger horses. At lest two fragments, a tibia and radius (recovered from [50]) were noted as unfused, indicating juvenile animals. Both of these examples were from very large animals and, unlike sites such as Over, it might be speculated that they were bred on site, although in the absence of more precise aging data this is speculative. While the juvenile sample indicates young animals, occurrences of pathologies would suggest animals at the opposite end of the age spectrum. At least four examples of riding-related pathologies were recorded on portions of ribs and vertebrae, in some instances these were advanced. Furthermore, the presence of canines from the loose teeth and mandibular records for horse indicate male animals: we thus have a horse cohort that would suggest large animals, used extensively for riding, with possible stock husbandry taking place on site. The final point to note is that these animals were butchered as noted from the cut mark data. The technique of butchery involved fine bladed knives, no cleaver butchery was present, that were used to disarticulate the carcass. The same mode of butchery was also employed on cattle.

SPECIES	NISP	%NISP	MNI
Cow	14	11.6	3
Horse	104	87.4	3
Dog	1	1	1
ULM	516	49.7 (Σ=635)	-
UUM	160	20 (Σ=795)	-

Table 10: NISP and MNI counts-Post-Med contexts

Key: UMM & ULM = Unid. Medium and Large Mammal / UUM = Unid. Fragment. NB: Species percentages are out of 119. These differ from the unidentified counts as these are calculated on the basis of element identification (for UMM & ULM) and total fragments (for UUM) (corresponding to Σ in brackets).

Discussion

Taphonomic factors have had a strong influence on the assemblage throughout with more robust elements over-represented in all periods. Results show that cattle were clearly the most important of the food-species overall. They are the most numerous, and, due to the obvious size difference, cattle would also have been the most significant provider of meat. Unfortunately, the absence of aging data precludes a kill profile. Thus, it is not possible to infer whether the management strategy in place for cattle was based on dairying or meat exploitation, or if cattle were transported to the site as live animals and butchered. The numbers of ovicaprids and pig are too small for further inference. Large quantity of horse bones recovered from a post medieval gully has been discussed thoroughly, although these results need to be taken with caution, as the bone might have been imported from an unknown location and possibly used to backfill a drain.

feature	context	Trench	Field	cut/ fill	Context Description	Feature Type	Notes	length (m)	width (m)	depth (m)	sides	base	spot date	associated cut	sample	pot	bone	flint	other
01	01	37	1	f	moderately firm, dark brownish black, silty clay, with frequent charcoal inclusions and occasional charred animal bone with a darker red patch in the centre. Moderate medium, rounded pebbles lining the cut.	pit	fill appears burnt						LBA	02	15 litres <03>	y	y		
01	02	37	1	c	small, circular and very shallow with very shallow top break of slope.	pit		0.8	0.8	0.08	shallow and irregular	irregular	LBA						
02	03	37	1	f	moderately soft, dark brown, silty clay, with occasional small gravel inclusions and rare medium rounded pebbles.	post hole							undated (prob LBA)	04					
02	04	37	1	c	small, circular and very shallow with moderately sharp top break of slope.	post hole		0.25	0.25	0.04	steep but very truncated	flat	undated (prob LBA)						
03	05	24	3	f	dry, friable, dark greyish brown mottled with orange, silty clay with moderate mixed gravel inclusions.	tree throw							undated (prob prehistoric)	06					
03	06	24	3	c	sub-circular, very shallow and uneven with no perceptible top break of slope	tree throw		0.95	0.8	0.09	shallow and irregular	irregular	undated (prob prehistoric)						
04	07	24	3	f	dry, friable, dark greyish brown mottled with orange, silty clay with occasional mixed gravel inclusions.	tree throw							undated (prob prehistoric)	08					
04	08	24	3	c	shallow, uneven, irregular sub-rectangular with moderately steep top break of slope.	tree throw		1	0.5	0.15	east is shallow, west is steep	irregular	undated (prob prehistoric)						
05	09	24	3	f	compact, mid to dark brown silty clay with occasional small rounded pebbles, grits and gravels.	tree throw							undated (prob prehistoric)	10					
05	10	24	3	c	shallow but regular, sub-oval, with moderately sharp top break of slope.	tree throw		0.7	0.32	0.09	shallow and concave	flat	undated (prob prehistoric)						
06	11	24	3	f	compact, mid to dark brown, clayey silty sand with rare grits and gravels.	tree throw							undated (prob prehistoric)	13					
06	12	24	3	f	very compact, re-deposited, mid orangey brown, clayey, silty sand with frequent mixed gravels.	tree throw							undated (prob prehistoric)	13					
06	13	24	3	c	irregular sub-rectangular in plan, with sharp top break of slope.	tree throw		1.3+	0.6	0.21	moderately steep and concave	gently concave	undated (prob prehistoric)						
07	14	53	1	f	compact, mid reddish brown, silty sand, with occasional flecks of charcoal and chalk and occasional grits.	furrow							undated (same as colluv. 1)	19					
07	15	53	1	f	compact, light yellowish brown, lens of clayey sand with occasional chalk flecks and rare small grits.	furrow							undated (same as colluv. 1)	19					
07	16	53	1	f	compact, mid greyish brown, silty sand with occasional to moderate flecks of charcoal, rare small grits and frequent snail shells.	furrow							undated (same as colluv. 1)	19					
07	17	53	1	f	compact, light yellowish brown, clayey silty sand, with rare small grits.	furrow							undated (same as colluv. 1)	19					
07	18	53	1	f	compact, light yellowish brown, clayey silty sand, with frequent small grits.	furrow							undated (same as colluv. 1)	19					
07	19	53	1	c	sub-rectangular in plan with sharp top break of slope, deep.	furrow		1.3+	0.82	0.4	steep and concave	irregular	undated (same as colluv. 1)						snail shells
08	20	33	2	f	moderately firm, dark brownish grey, silty clay with rare charcoal flecks, rare small mixed gravels.	post hole							undated (prob LBA)	21		y			

feature	context	Trench	Field	cut/ fill	Context Description	Feature Type	Notes	length (m)	width (m)	depth (m)	sides	base	spot date	associated cut	sample	pot	bone	flint	other
08	21	33	2	c	circular in plan with sharp top break of slope.	post hole		0.18	0.18	0.13	steep and concave	concave	undated (prob LBA)						
09	22	33	2	f	compact, mid greyish brown, silty clay, with occasional small mixed gravels.	post hole							undated (prob LBA)	23					
09	23	33	2	c	circular in plan with sharp top break of slope.	post hole		0.21	0.21	0.12	steep and straight	concave	undated (prob LBA)						
10	24	33	2	f	moderately firm, dark brownish grey, silty clay with rare charcoal flecks, and occasional small mixed gravels.	post hole							undated (prob LBA)	25					
10	25	33	2	c	circular in plan with sharp top break of slope.	post hole		0.15	0.15	0.1	very steep and slightly concave	concave	undated (prob LBA)						
11	26	33	2	f	compact, mid greyish brown, silty sand with occasional small pea gravels.	post hole							undated (prob LBA)	27			y		
11	27	33	2	c	circular in plan with sharp top break of slope.	post hole		0.2	0.2	0.12	steep and slightly concave	concave	undated (prob LBA)						
12	28	33	2	f	moderately firm, dark brownish grey, silty clay, with rare mixed pea gravels.	post hole							undated (prob LBA)	28					
12	29	33	2	c	circular in plan with moderately sharp top break of slope.	post hole		0.27	0.27	0.07	moderately steep and concave	gently concave	undated (prob LBA)						
13	30	33	2	f	compact, mid greyish brown, silty sand, with occasional pea gravels.	post hole							undated (prob LBA)	31					
13	31	33	2	c	circular in plan with moderately sharp top break of slope.	post hole		0.2	0.2	0.09	moderately steep and slightly concave	concave	undated (prob LBA)						
14	32	35	2	f	moderately firm, dark brownish grey, sandy silt, with rare charcoal flecks, occasional small mixed gravels and rare medium pebbles towards the base.	pit							LBA/ EIA	33		y	y		
14	33	35	2	c	circular in plan with shallow top break of slope.	pit		0.5	0.5	0.07	moderately shallow and slightly concave	irregular	LBA/ EIA						
15	34	34	2	f	compact, dark brown, silty clay with frequent medium rounded gravels, occasional flecks of charcoal and rare fragments of flint.	pit							LBA	35	15 litres <01>	y	y		
15	35	34	2	c	sub-circular in plan with sharp top break of slope.	pit		0.77	0.77	0.43	very steep and slightly concave	flat	LBA						
15	43	34	2	f	loose, mid to dark brown silty sand, with frequent mixed gravels and pea gravels, occasional medium rounded stones, rare small fragments of flint and rare flecks of charcoal.	pit							LBA	35				y	
16	36	32	2	f	moderately firm, dark brownish grey, gravely silt, with rare charcoal flecks and frequent small sharp angular gravels and flints.	post hole							undated (prob LBA)	37					
16	37	32	2	c	circular in plan with sharp top break of slope.	post hole		0.26	0.26	0.1	steep and concave	concave	undated (prob LBA)						
17	38	32	2	f	moderately firm, dark greyish brown, sandy silt, with occasional small rounded pebbles and mixed gravels.	post hole							undated (prob LBA)	39					

feature	context	Trench	Field	cut/ fill	Context Description	Feature Type	Notes	length (m)	width (m)	depth (m)	sides	base	spot date	associated cut	sample	pot	bone	flint	other
17	39	32	2	c	sub-circular in plan with sharp top break of slope.	post hole		0.53	0.5	0.15	very steep and slightly concave	gently concave	undated (prob LBA)						
18	40	32	2	f	moderately firm, dark brownish grey, sandy silt, with rare charcoal flecks and rare small rounded pebbles.	pit							undated (prob LBA)	42					
18	41	32	2	f	moderately firm, mid greyish brown, sandy silt, with frequent mixed gravels.	pit							undated (prob LBA)	42					
18	42	32	2	c	sub-circular in plan with sharp top break of slope.	pit		0.7	0.68	0.24	steep and slightly convex	gently concave	undated (prob LBA)						
18	44	32	2	f	firm, mid yellowish grey, burnt clay lens.	pit	appears burnt						undated (prob LBA)	42					
19	45	34	2	f	moderately firm, dark brownish grey, sandy silt with occasional small rounded pebbles and patches of mixed gravels.	gully							LBA	46		y	y		
19	46	34	2	c	rounded terminus, regular and straight in plan, with sharp top break of slope, aligned E-W.	gully	terminus	2.1+	0.23	0.09	steep and slightly concave	gently concave	LBA						
20	47	34	2	f	moderately firm, dark brownish grey, sandy silt, with occasional rounded pebbles and patches of yellow gravel.	gully							undated (prob LBA)	48			y		
20	48	34	2	c	regular and slightly curved to the south in plan, with moderately sharp top break of slope, aligned roughly E-W.	gully		2.5+	0.4	0.15	moderately steep, slightly concave to the north and slightly convex to the south.	concave	undated (prob LBA)						
21	49	31	2	f	moderately soft, dark yellowish brown, sandy silt with slight humic content, contained frequent semi-articulated and disarticulated animal bones and small angular stones.	gully	more animal bone than soil						Post-Med	50	15 litres <05>	y	y		
21	50	31	2	c	slightly wider in plan towards the east, curving from NW-SE to E-W, with sharp top break of slope.	gully		3.5+	0.56	0.21	steep and concave	concave	Post-Med						
21	93	31	2	f	soft, mid brown, sandy clayey silt, with occasional medium to large angular and sub-rounded stones and frequent animal bone.	gully	more animal bone than soil						Post-Med	94					
21	94	31	2	c	slightly wider in plan towards the east, curving from NW-SE to E-W, with sharp top break of slope.	gully		3.5+	0.94	0.28	steep and concave	concave	Post-Med						
22	51	30	4	f	firm, dark greyish brown, silty sand, post pipe, with frequent mixed gravels and rare charcoal flecks.	post hole	post pipe						undated (prob Meso)	53					
22	52	30	4	f	firm, mid brownish grey, silty sand, post packing, with frequent mixed gravels.	post hole	post packing						undated (prob Meso)	53					
22	53	30	4	c	sub-circular in plan with sharp top break of slope.	post hole		0.6	0.6	0.34	steep and straight	sharply concave	undated (prob Meso)						
23	54	30	4	f	moderately firm, dark brownish grey, slightly sandy silt, with rare small angular gravels and rare small charcoal flecks.	tree throw							Meso	55					

feature	context	Trench	Field	cut/ fill	Context Description	Feature Type	Notes	length (m)	width (m)	depth (m)	sides	base	spot date	associated cut	sample	pot	bone	flint	other
23	55	30	4	c	sub-linear in plan, irregular with sharp top break of slope.	tree throw		1.6+	1	0.45	irregular, steep and concave in places, almost vertical towards west	irregular, concave in places	Meso					y	
24	56	30	4	f	moderately firm, mid brownish grey, sandy silt, with rare small angular gravels and rare small charcoal flecks.	tree throw							undated (prob Meso)	57					
24	57	30	4	c	irregular in plan, truncated by tree throw F.23, moderate top break of slope.	tree throw		1.2+	0.48	0.15	shallow concave eastern side, truncated western	concave	undated (prob Meso)						
25	58	31	2	f	moderately firm, mid brownish grey, sandy silt, with rare small rounded pebbles and occasional patches of yellow gravel.	gully							Post-Med	59					
25	59	31	2	c	regular and slightly curved to the east in plan, with sharp top break of slope, aligned roughly NW-SE.	gully		5.6+	0.48	0.21	steep, straight eastern side	concave	Post-Med						
25	62	31	2	f	moderately firm, mid brownish grey, sandy silt, with occasional small rounded pebbles, contained frequent disarticulated animal bone	gully	40% animal bone						Post-Med	63	15 litres <04>		y		
25	63	31	2	c	regular and slightly curved to the east in plan, with sharp top break of slope, aligned roughly NW-SE.	gully		5.6+	0.61	0.19	steep and slightly convex eastern side	concave	Post-Med						
25	100	31	2	f	soft, highly mixed, dark greyish brown, silty loam and mid yellowish brown, clay marl and dark yellowy brown sandy clay, with frequent animal bone.	gully							Post-Med	101					
25	101	31	2	c	indeterminable cut in section, has been disturbed.	gully	F.25 or F.21 (or both)	n/a	n/a	0.35	n/a	concave	Post-Med						
26	60	31	2	f	moderately firm, light greyish brown, sandy silt, with rare small rounded pebbles.	gully							Post-Med	61					
26	61	31	2	c	regular and straight in plan, with sharp top break of slope, aligned roughly E-W.	gully		2.6+	0.4	0.17	steep and concave	gently concave	Post-Med						
27	66	30	4	f	firm, dark greyish brown, silty clay, with moderate small gravel inclusions, and rare yellowish brown sandy silt patches, heavily bioturbated.	tree throw							Meso	67				y	
27	67	30	4	c	irregular and sub-square in plan with sharp top break of slope.	tree throw		0.4	0.38	0.24	vertical eastern side and steep straight western side	concave	Meso						
28	68	30	4	f	firm, dark greyish brown, silt, with frequent small gravel inclusions.	post hole							undated (prob Meso)	69					
28	69	30	4	c	sub-circular in plan, with sharp top break of slope.	post hole		0.44	0.36	0.19	steep and concave	concave	undated (prob Meso)						
29	64	31	2	f	moderately firm, light yellowish brown, sandy silt, with occasional small rounded pebbles.	gully							Post-Med	65		y			SF <01>
29	65	31	2	c	regular and straight in plan, with moderate top break of slope, aligned roughly E-W.	gully		2.5+	0.23	0.1	moderately shallow and concave	gently concave	Post-Med						

feature	context	Trench	Field	cut/ fill	Context Description	Feature Type	Notes	length (m)	width (m)	depth (m)	sides	base	spot date	associated cut	sample	pot	bone	flint	other
30	71	02	5	f	firm, mid reddish brown, sandy silt, with frequent pea gravels and moderate mixed gravels.	post hole							undated (prob prehistoric)	72					
30	72	02	5	c	sub-circular in plan with sharp top break of slope.	post hole		0.56	0.5	0.16	steep and concave	concave	undated (prob prehistoric)						
31	73	02	5	f	moderately firm, mid reddish brown, sandy silt, with moderate charcoal flecks rare and mixed gravel.	post hole							undated (prob prehistoric)	74					
31	74	02	5	c	sub-circular in plan with sharp top break of slope.	post hole		0.52	0.44	0.17	steep and concave	concave	undated (prob prehistoric)						
32	75	03	5	f	loose and friable, dark purplish brown, sandy clay, with occasional mixed gravels.	tree throw							undated (prob prehistoric)	76					
32	76	03	5	c	irregular sub-rectangular in plan, with a shallow top break of slope.	tree throw		0.8	0.6	0.1	shallow and irregular	uneven	undated (prob prehistoric)						
33	77	03	5	f	moderately firm, dark purplish brown, sandy clay, with moderate mixed gravels.	tree throw							undated (prob prehistoric)	78					
33	78	03	5	c	sub-circular in plan with shallow top break of slope.	tree throw		0.3	0.3	0.08	shallow and slightly convex	concave	undated (prob prehistoric)						
34	79	02	5	f	firm, mid brown, sandy silt with frequent mixed gravels.	post hole							undated (prob prehistoric)	80					
34	80	02	5	c	sub-circular in plan, with sharp top break of slope.	post hole		0.5	0.45	0.12	steep and slightly concave	concave	undated (prob prehistoric)						
35	81	02	5	f	moderately firm, mid reddish brown, sandy silt, with frequent mixed gravels.	post hole							undated (prob prehistoric)	82					
35	82	02	5	c	circular in plan, with sharp top break of slope.	post hole		0.44	0.38	0.12	steep and slightly concave	flat	undated (prob prehistoric)						
36	83	02	5	f	moderately firm, mid brown, sandy silt, with frequent pea gravels and moderate mixed gravels.	post hole							undated (prob prehistoric)	84					
36	84	02	5	c	sub-circular in plan, with sharp top break of slope.	post hole		0.5	0.47	0.3	very steep and slightly concave	concave	undated (prob prehistoric)						
37	85	02	5	f	loose, light orangey brown, slightly silty sand, with occasional angular gravels.	post hole							undated (prob prehistoric)	86					
37	86	02	5	c	sub-circular in plan, with moderate top break of slope.	post hole		0.53	0.42	0.11	moderately shallow and concave	concave	undated (prob prehistoric)						
38	87	02	5	f	moderately firm, mid reddish brown, silty sand, with frequent angular gravels.	post hole							undated (prob prehistoric)	88					
38	88	02	5	c	sub-circular in plan, with moderate top break of slope.	post hole		0.48	0.38	0.11	moderately shallow and concave	concave	undated (prob prehistoric)						
39	89	02	5	f	moderately firm, mid greyish brown, silty sand, with frequent angular and sub-angular gravels.	post hole							undated (prob prehistoric)	90					
39	90	02	5	c	sub-circular in plan, with shallow top break of slope.	post hole		0.45	0.4	0.05	moderately shallow and concave	concave	undated (prob prehistoric)						
40	91	02	5	f	moderately firm, mid purplish brown, silty sand, with frequent angular and sub-angular gravels.	tree throw							undated (prob prehistoric)	92					
40	92	02	5	c	irregular and sub-circular in plan, with shallow top break of slope.	tree throw		0.38	0.33	0.1	shallow and irregular	irregular	undated (prob prehistoric)						

feature	context	Trench	Field	cut/ fill	Context Description	Feature Type	Notes	length (m)	width (m)	depth (m)	sides	base	spot date	associated cut	sample	pot	bone	flint	other
41	98	31	2	f	friable, light yellowy brown, gravely sand, with frequent small angular stones and rare medium rounded stones.	pit							Post-Med	99					
41	99	31	2	c	half a sub-circle in plan with a sharp top break of slope.	pit		n/a	0.95	0.43	steep and slightly convex southern side	concave	Post-Med						
42	95	04	5	f	moderately firm, dark reddish brown, homogenous, sandy clay, with moderate mixed gravels and flints, occasional medium rounded pebbles, rare chalk flecks and shells.	ditch							MBA	97					
42	96	04	5	f	moderately firm, dark reddish brown, sandy clay, with frequent medium and rounded pebbles, frequent mixed gravels and pea gravel towards the base.	ditch							MBA	97			y		
42	97	04	5	c	regular, even and slightly curved to the north in plan, with a sharp top break of slope, aligned roughly E-W.	ditch	ring ditch/ field system	2.4+	1.45	0.65	steep and slightly concave	concave	MBA						
43	102	20	3	f	firm, dark greyish brown, silty clay, with occasional mixed gravels.	pit							undated (prob prehistoric)	103					
43	103	20	3	c	sub-circular in plan, with sharp top break of slope.	pit		0.81	0.68	0.49	steep and slightly convex	flat	undated (prob prehistoric)						
44	108	26	4	f	soft, mid greyish brown, silty loam, with rare small angular stones.	ditch							Post-Med	112					
44	109	26	4	f	soft, mid yellowish brown, silty loam, with very rare small angular stones.	ditch							Post-Med	112					
44	110	26	4	f	moderately firm, dark greenish grey clayey silt, colluvium?	ditch							Post-Med	112					
44	111	26	4	f	soft, dark brown, sandy silt, with occasional small angular stones.	ditch							Post-Med	112					
44	112	26	4	c	curvilinear and irregular in profile, with a sharp top break of slope.	ditch		20+	3.75	1.2	very steep and concave	gently concave	Post-Med						
44	117	26	4	f	loose, banded, mid yellowy brown and mid reddish brown, gravel, silt and clay mix.	ditch							Post-Med	112					
45	104	21	3	L	firm and sticky, mid pinkish brown, clayey silt, colluvial, rare sand.	pond							undated (prob prehistoric)	107					
45	105	21	3	L	firm, mid yellowy brown, clay.	pond							undated (prob prehistoric)	107	10 litres <06>				
45	106	21	3	L	firm, dark blackish brown, silty clay, with very rare fine sand and pea gravels towards the base.	pond							undated (prob prehistoric)	107	10 litres <07>				
45	107	21	3	C	sub-circular in plan, with indeterminable top break of slope. (irregular and probably natural 'cut').	pond		14+	2.5+	0.36	very shallow and gradual	gently concave	undated (prob prehistoric)						
46	114	30	4	f	firm, dark greyish brown, sandy silt, with occasional mixed gravel.	post hole							undated (prob Meso)	115					
46	115	30	4	c	sub-circular in plan, with sharp top break of slope.	post hole		0.4	0.39	0.22	steep and straight	concave	undated (prob Meso)						
47	116	30	4	f	firm, dark greyish brown, sandy silt, with occasional mixed gravels.	tree throw							Meso	119		y		y	
47	118	30	4	f	friable, dark brown, sandy silt, with frequent gravels.	tree throw							Meso	119					
47	119	30	4	c	rounded terminus, regular and straight in plan, with a sharp top break of slope, aligned roughly NW-SE.	tree throw		1.1+	0.9	0.36	steep and concave	stepped, concave	Meso						

feature	context	Trench	Field	cut/ fill	Context Description	Feature Type	Notes	length (m)	width (m)	depth (m)	sides	base	spot date	associated cut	sample	pot	bone	flint	other
48	120	29	4	f	soft, mid greyish brown, clayey silt, with rare flecks of calcined bone and charcoal, occasional small angular and sub-rounded stones and a spread of pottery and animal bone.	ditch	Roman						Roman	122		y	y	y	quern
48	121	29	4	f	firm but friable, mid yellowy brown, sandy gravel, with small angular stones.	ditch	Roman						Roman	122	15 litres <08>				
48	122	29	4	c	regular, even and straight in plan with sharp top break of slope and V-shaped profile.	ditch	Roman	2.5+	2.25	1.2	steep and straight with occasional steps on both sides	V-shaped, sharply concave	Roman						
49	123	29	4	f	firm, mottled bluish grey and yellowy ochre, alluvial clay, with occasional sub-rounded pebbles.	pit							Post-Med	128		y			glass, pipes
49	124	29	4	f	loose, fine, dark brown, homogenous, silt, with well sorted, rare sand.	pit							Post-Med	128					
49	125	29	4	f	firm, dark brown, silty gravel slump, with abundant mixed gravels.	pit							Post-Med	128				y	
49	126	29	4	f	soft, fine, dark brown, silt, with rare sand and gravel.	pit							Post-Med	128					
49	127	29	4	f	firm, dark brown, silt, with frequent mixed gravels and rare sub-rounded pebbles.	pit							Post-Med	128					
49	128	29	4	c	irregular, sub-circular, with sharp top break of slope.	pit	quarry pit?	n/a	3.5+	0.8	steep and stepped, slightly concave	gently concave	Post-Med						
n/a	70	30	4	L	moderately firm, dark greyish brown, slightly sandy silt with occasional small gravels.	buried soil	buried soil	36+	2.5+	0.05 (east/ west) -0.2 in centre	n/a	moderately flat (covers natural underlying geology)	prob Meso	n/a				y	
n/a	113	26	4	L	loose, highly mixed re-deposited gravel with sandy and silty lenses.	ditch		n/a	n/a	0.45+			Post-Med			y			
n/a	129	106	7	L	dark brownish grey, soft, organic rich, silty peat, with moderate natural wood fragments, frequent stained dark sub-angular and sub-rounded gravels and flints and moderate white shell? fragments.	peat layer	peat layer	n/a	n/a	n/a	n/a	n/a	Prob Neo		15 litres <02>				wood

Bibliography

Allen, J.L. & Holt, A. 2002. *Health and Safety in Field Archaeology*. SCAUM.

Bartlett, A.H.B. 2005. *Dairy Farm Cople, Willington: report on archaeogeophysical survey.*

Beadsmoore, E. 2005. *An Archaeological Evaluation; Land at Dairy Farm South, Willington, Bedfordshire.* CAU Report 702.

Beedham, G.E. 1972. *Identification of the British Mollusca.* Amersham: Hulton Educational Publications.

Boessneck, J. 1969. Osteological differences between sheep (*Ovis aries*) and goat (*Capra hircus*), in D. Brothwell and E. S. Higgs (eds.), *Science in Archaeology*, 2nd edition: 331-358. London: Thames and Hudson.

Cohen, A. and Serjeantson, D. 1996. *A manual for the identification of bird bones from archaeological sites, revised edition*. London: Archetype Publications Ltd.

Cooper, A. & Edmonds, M. 2007. *Past and Present: Excavations at Broom, Bedfordshire 1996 – 2005*. Cambridge Archaeological Unit. Oxbow.

Dawson, M. 1996. Plantation Quarry, Willington: Excavations 1988 – 1991. *Bedfordshire Archaeology* No.22.

Dawson M. 2000. The Mesolithic Interlude. In. Dawson, M. (eds). *Prehistoric, Roman, and Post-Roman Landscapes of the Great Ouse Valley.* CBA Research Report 119. York. Council for British Archaeology.

de Vareilles, A. 2005. 'Assessment of Bulk Environmental Samples', pp.27–9 in Beadsmoore, E. 2005 *An Archaeological Evaluation; Land at Dairy Farm South, Willington, Bedfordshire.* CAU Report 702.

Dobney, K. and Reilly, K. 1988. A method for recording archaeological animal bones: the use of diagnostic zones, *Circaea* **5** (2): 79-96.

French, C. 2003. *Geoarchaeology in Action; Studies in Soil Micromorphology and Landscape Evolution*. Routledge. London.

Grant, A. 1982. The use of tooth wear as a guide to the age of domestic animals, in B. Wilson, C. Grigson and S. Payne, (eds.), *Ageing and sexing animal bones from archaeological sites*. Oxford: Brit. Archaeol. Rep. Brit. Ser. 109: 91-108.

Grant, A. 1989. Animals in Roman Britain, in M. Todd (ed.), *Research on Roman Britain*:*1960-1998.*Brittania Monograph Series 11: 135-146.

Halstead, P. Collins, P. &, Isaakidou. V. 2002. Sorting the sheep from the goats: morphological distinctions between the mandibles and mandibular teeth of adult *ovis* and *capra*, *J. Archaeol. Sci*. 29, 545-533.

Jacobi, R. 1978 The Mesolithic of Sussex. In Drewett, P.L. (ed.) *Archaeology in Sussex to AD 1500*. CBA Research Report 29: London.

Knight, M. & Cooper, A. 2004. *Land North of Broom Grange, near Biggleswade, Bedfordshire: an Archaeological Evaluation*. CAU Report 595.

Langdon, J. 1984. Horse hauling: a revolution in vehicle transport in the Twelfth- and Thirteenth- Century England? *Past and Present*, No. 103, pg. 37-66.

Lisboa, I.M.G. 2005a. *Summary Consultancy Report on a Magnetometry Survey at Dairy Farm South, Renhold, Bedfordshire*.

Lisboa, I.M.G. 2005b. *Written Scheme of Works for an Intrusive Archaeological Evaluation at Dairy Farm South, Willington, Bedfordshire*. Archaeologica.

Malim, T. The Ritual Lanscape of the Neolithic and Bronze Age along the middle and lower Ouse Valley. In. Dawson, M. (eds). *Prehistoric, Roman, and Post-Roman Landscapes of the Great Ouse Valley.* CBA Research Report 119. York. Council for British Archaeology.

Payne, S. 1985. Morphological distinction between the mandibular teeth of young sheep *Ovis* and goats *Capra*, *J. Archaeol. Sci.* 12: 139-147.

Pinder, A. 1986. Excavations at Willington, 1984: II Iron Age and Roman Periods. *Bedfordshire Archaeology* No.17.

Pitts, M. W. & Jacobi, R. M. 1979. Some Aspects of Change in Flaked Stone Industries of the Mesolithic and Neolithic in Southern Britain. *Journal of Archaeological Science.* 6, 163-77.

Ranson, C. 2007. *Black Cat Island, Roxton, Bedfordshire: An Archaeological Evaluation*. CAU Report 760.

Rapp, G. & Hill, C. 1998. *Geoarchaeology; The Earth-Science Approach to Archaeological Interpretation*. Yale University Press.

Schmid, E. 1972. *Atlas of animal bones*. Amstrdam: Elsevier.

Silver I. A. 1969. The ageing of domestic animals, in D. Brothwell and E. Higgs E. S. (eds.), *Science in archaeology*, 2nd edition: 283-301. London: Thames and Hudson.

Slater, A. 2008. *Broom Quarry Extension, Broom, Bedfordshire: Interim Report*. CAU Report 808.

Spence, C. 1990. *Archaeological site manual*. MOL.

Stace, C. 1997. *New Flora of the British Isles* (second edition). Cambridge: Cambridge University Press.

von den Driesch, A. 1976. A guide to the measurement of animal bones from archaeological sites, *Peabody Museum Bulletin* 1. Cambridge Mass., Harvard University.

Williams, D. 1973. Flotation at Siraf. *Antiquity* **47**, 288–92.

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