



# University of Leicester

## Archaeological Services

**A Mid-Late Iron Age Settlement  
At Waterfield Place,  
Market Harborough,  
Leicestershire  
NGR: SP 7358 8834**

Jennifer Browning

With specialist contributions from:  
Heidi Addison, Jennifer Browning,  
Lynden Cooper, Nicholas J. Cooper,  
Rebecca Hearne, Malin Holst,  
Elizabeth Johnson, Deborah Sawday and  
Rachel Small




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**For: Persimmon Homes Ltd.**

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## **A Mid-Late Iron Age Settlement at Waterfield Place, Market Harborough, Leicestershire NGR: SP 735 883**

*Jennifer Browning*

With specialist contributions from: Heidi Addison, Jennifer Browning, Lynden Cooper, Nicholas J. Cooper, Rebecca Hearne, Malin Holst, Elizabeth Johnson, Katie Keefe, Deborah Sawday and Rachel Small

### **Summary**

*Archaeological excavations were carried out by ULAS on land at Waterfield Place, Market Harborough between July and October 2014, in advance of the construction of new housing by Persimmon Homes Ltd. The work followed geophysical survey and trial trenching in 2011. Excavation revealed several enclosure complexes, representing activity dating from the early-mid Iron Age and ceasing by the end of the 1st century AD. The earliest phase began with several unenclosed circular dwellings, progressing to roundhouses within small enclosures. Towards the end of the Iron Age, the creation of new enclosures, mostly quite small, may reflect the increasing importance of pastoral farming. A diverse range of enclosure types were observed on the site; including concentric ditches, sub-square, sub-circular and oval enclosures. Structures were predominantly circular however a post-built rectangular structure was also identified within an enclosure. Only part of the settlement was exposed, with the remainder lying beneath an earlier housing development to the south.*

*Although it was clear that the settlement had several phases, chronological divisions were not clearly distinguished within the mid-late Iron Age. In the later Iron Age however, some of the enclosures become disused and were backfilled. During the 1st century BC, a male individual, aged approximately 36 to 45 years, was buried in a prone position in the terminal of a disused ditch. Towards the end of the life of the settlement, activity seemed to be mostly associated with farming. The last features to remain in use were a remodelled enclosure to the west and a penannular enclosure in the centre of the site, both of which were backfilled in the late 1st century AD. The excavations have offered a glimpse of a complex and long-lived Iron Age settlement, which appears to have been largely self-sufficient having an emphasis on domestic scale activities, with little evidence of specialisation and few traded goods. The settlement may represent an Iron Age predecessor to the long-suspected Roman small town on the Ridgeway. Evidence implies that that occupation moved to the eastern end of the ridge with the development of an adjacent Roman settlement. Waterfield Place seems, therefore, to fit within wider patterns of occupation observed within the region, which demonstrate upheaval in the 1st century AD. Sometimes settlements showed continuity of use through the transition, however more frequently earlier sites were abandoned, while new sites grew up, often in close proximity.*

*After the cessation of the main phase of occupation there was a gap in activity. Two post-holes containing Anglo-Saxon pottery suggest sporadic occupation in the 6th or 7th century AD. By the medieval period, the site was cultivated as part of the south fields of Great Bowden, as demonstrated by the extensive remains of north-south aligned ridge and furrow. In the post-medieval period, the site was under pasture, later becoming two enclosed paddocks in the modern period, until archaeological work revealed its Iron Age past.*



## 1. Introduction

An archaeological excavation was undertaken on land off Waterfield Place, Market Harborough, Leicestershire, prior to residential development. The site was known to lie within an area of high archaeological potential, as indicated by its location west of a suspected Roman Small Town and close to archaeologically significant sites listed on the Historic Environment Record (Leicestershire HER). In view of the potential impact of the development upon archaeological remains, in accordance with National Planning Policy Framework (NPPF; 2012) and following recommendations by the Leicestershire County Council (LCC) Senior Planning Archaeologist, the planning authority required archaeological investigation to be carried out following a staged programme, which encompassed geophysical survey, trial trenching and open-area excavation, the latter secured by planning condition. The archaeological excavation was carried out between July and October 2014, following geophysical survey and trial trenching in 2011.

All archaeological work was in accordance with the Institute for Archaeologists (IfA) Code of Conduct (2010) and adhered to their *Standard and Guidance for Archaeological Excavations* (2008) and the LCC *Guidelines and Procedures for Archaeological work Leicestershire and Rutland* (1997). The work followed a *Written Scheme of Investigation (WSI)* prepared by University of Leicester Archaeological Services (ULAS).

## 2. Site Description, Topography and Geology

The development area was located on the northern edge of Market Harborough, 1km north of the town centre (figs. 1 and 2). The site consists of two fields, previously used as paddocks and covers an area of c.1.2ha. It is bordered to the south by the gardens of properties fronting onto Pochin Drive, to the east by a footpath and the playing fields of Ridgeway School and to the north and west by adjacent paddock fields. The general topography slopes gently down from 116m at the west end of the site to 112m at its eastern extent. The wider topography is more pronounced with the land dropping away steeply to the north and also more gradually to the east and south towards the River Welland (fig. 3). The underlying bedrock geology is Dyrham formation, siltstone and mudstone interbedded. The overlying superficial deposits are mid Pleistocene Diamicton Till.

(<http://mapapps.bgs.ac.uk/geologyofbritain/home.html> Accessed October 2014).

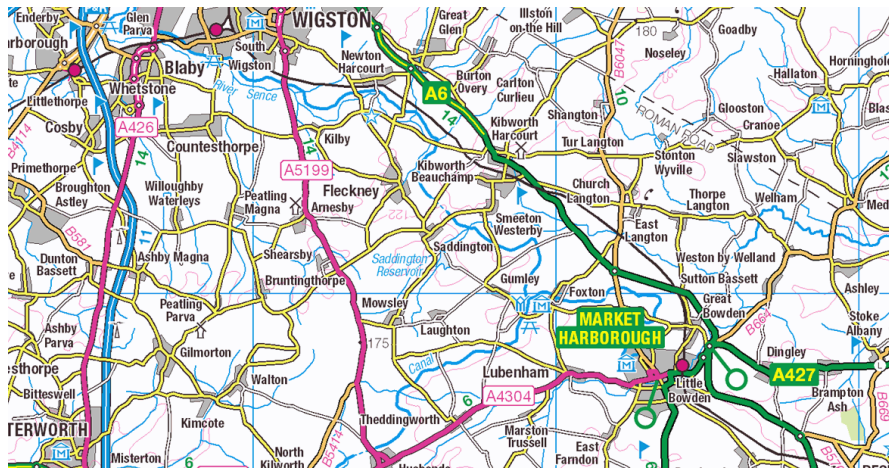


Figure 1: Site Location (Scale 1:250000)

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Figure 2: Site location plan

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Figure 3: Close-up of site location (100m Grid, application area marked in bold)

### 3. Archaeological and Historical Background

#### *Historical Background*

Market Harborough is first mentioned in the Pipe Roll of 1199 (Davies 1964, 41). At the time of the Norman Conquest, the manorial centre was at Great Bowden, while Harborough was part of the Great Bowden field system. It is believed that the town was a planned creation under the encouragement of Henry II (Davies 1984, 14), located close to the crossing point of the River Welland on the Leicester to Northampton road. The name Harborough is derived from the Anglo-Saxon *haefera-beorg*, oat-hill, which may have originally been the field name where the settlement was established (Davies 1984, 14). The hill that fits this interpretation is the present Mill Hill. Although there is no surviving foundation for a market, it is likely that this was the reason for the town's creation as a market place for the manor.

Great Bowden village is situated above the Welland floodplain, a site reflected in its Old English meaning *Bucga's Hill*. Domesday and other evidence indicate that Great Bowden was an important estate centre in the eleventh century. The village is mentioned in Domesday and was amongst the holdings of William I subsequent to its ownership by Edward the Confessor. It consisted of nine and a half curacates of land. Robert de Bucy held land here from Countess Judith and William de Bucy also held land in Great Bowden. The ancient parish of Great Bowden was bounded to the south and west by the River Welland, which forms the boundary between Leicestershire and Northamptonshire for much of its length (although Market Harborough is now wholly within Leicestershire). The ancient parish formerly contained, besides Great Bowden, two dependent chapelries, St. Mary in Arden and Market Harborough (VCH Volume 5: Gartree Hundred.1964).

In 1086 Great Bowden was the centre of a large soke (a subordinate unit to a mother parish), which included lands in twelve other Leicestershire villages. The origin of the soke is unknown, but it seems to have existed under Edward the Confessor. Great Bowden soke is mentioned in 1173, but not subsequently. Nothing more is known of its organization although part of its territories evolved into a separate entity known as the soke of Stretton.

### *Archaeological Background*

The application area is within an area of known archaeological potential recorded on the Leicestershire and Rutland Historic Environment Record. Most notably a large Roman settlement has been suggested from numerous findspots recorded from the gardens of properties fronting The Ridgeway, located c.150m east of the site. A wide range of finds is recorded including high quantities of Roman pottery, smaller quantities of Iron Age Pottery, floor tesserae, coins, a quern stone and a cobbled floor surface (**MLE 1948**; **MLE16564**). A further Iron Age/Roman quern stone was found c.250m south of the application area (**MLE6591**). An Iron Age/Roman site has also been recorded c.500m to the north of the application area through metal detector and subsequent fieldwalking surveys which have located numerous coins, brooches, sherds of Iron Age and Roman pottery, flue tile and tesserae (**MLE1999**). Also a further collection of Iron Age/Roman pottery was located 1km north of the application area (**MLE10148**).

In the wider context part of an Iron Age settlement has been recently excavated c.1.5km west of the application area. Here a sub-squared enclosure was recorded containing an internal division and a single roundhouse gully. The enclosure was connected to a driveway along its south-eastern side with further enclosures also partially recorded along the opposite side of the driveway (**MLE15729**; Clarke and Chapman 2009). Further enclosures and roundhouses as well as possible barrow ring ditches have also been recorded immediately south of this site through geophysical survey (**MLE19057-59**). These results would suggest a large scale complex of late prehistoric settlement activity within this area.

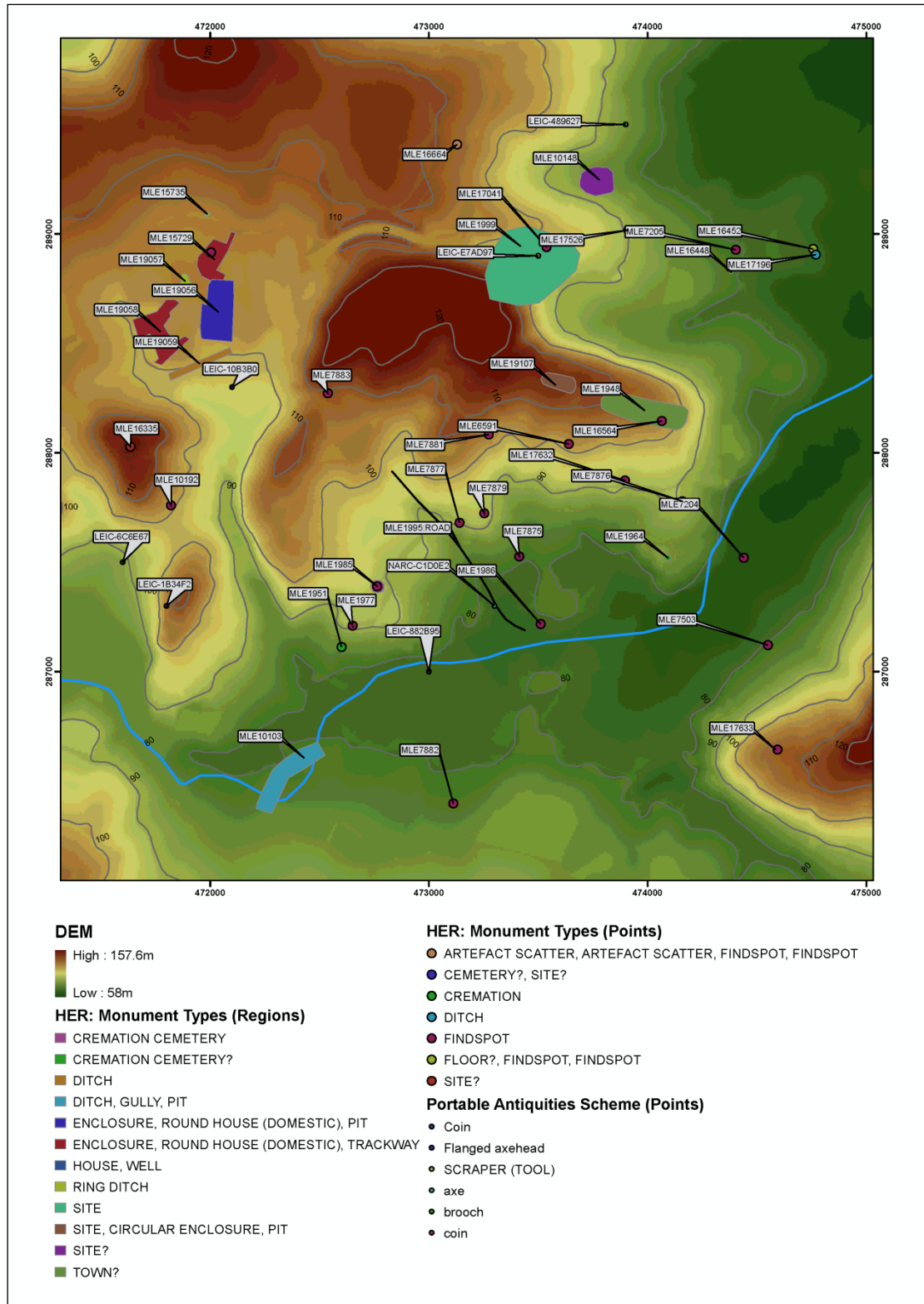


Figure 4: Topographic Map of HER data including the geophysical survey of the application area (MLE 19107)

Archaeological evaluation in the form of geophysical survey and trial trench evaluation of the site was undertaken in 2011 (Haddrell 2011; Harvey 2011a). A detailed magnetic survey (gradiometry) was undertaken across the majority of the application area by Stratascan (Haddrell 2011; Figure 5). A number of positive curvilinear anomalies (highlighted in red) with associated negative responses (blue) were recorded and it was suggested that they could represent evidence of prehistoric enclosures with associated banks. There was some overlap of the features that suggested a number of different phases of human activity may be present. Smaller discrete positive anomalies were also recorded close to the enclosures and these probably represent archaeological pits. Other features included more amorphous positive anomalies and weak negative anomalies that may also represent evidence of further archaeological features. Areas of magnetic disturbance, recorded mainly around the edges of the site, may be masking further potential archaeology (Haddrell 2011, 6-7).

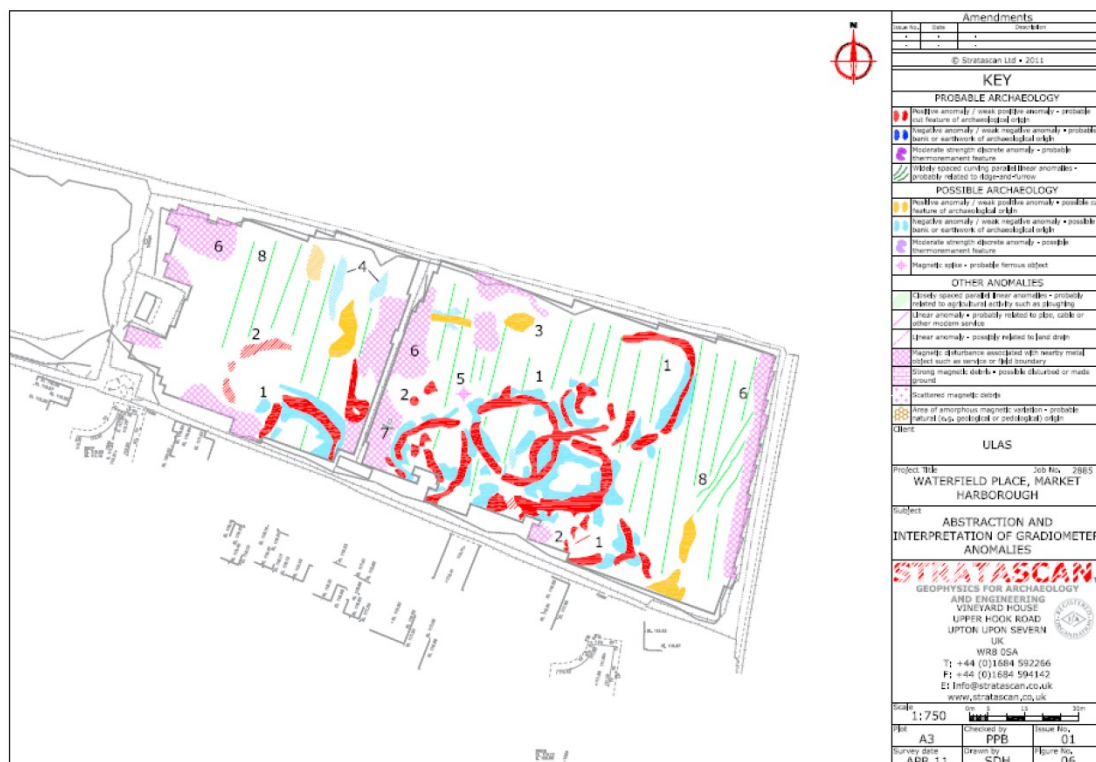


Figure 5: Plan of the interpreted geophysical survey results (Haddrell 2011)

A programme of archaeological trial trench investigation was completed and reported upon in the summer of 2011 (Harvey 2011a). Nine trenches were excavated in order to target the anomalies identified by the geophysical survey as well as to evaluate apparently 'archaeologically blank' areas of the site. Positive results were recorded within seven of the excavated trenches, which confirmed the results of the geophysical survey, as well as recording archaeological features not previously identified. Six enclosure ditches were investigated that broadly spread east to west across the site. These features varied in form but all produced pottery dating between the Middle to Late Iron Age (4th century BC to the middle 1st century AD). The ditches recorded within Trenches 2, 6, 7 and 9 appeared to represent single cut features whereas the ditches in Trenches 3 and 8 exhibited an apparently long tradition of re-cutting. Trench 5 and 7 recorded structural features potentially representing the remains of roundhouses within the recorded enclosures. A further possible roundhouse structure was also recorded within Trench 6 that may relate to a phase of unenclosed settlement on the site. Evidence of structural deposition was recorded within

Trench 5 where two complete miniature pottery vessels had been deliberately placed within the centre of a gully terminal.

At the time of the evaluation, it was unclear whether the activity represented a large 'aggregated' settlement or whether the features suggested a shifting settlement pattern of smaller groups of people over a longer period of time. Clear overlapping of the features was recorded, suggesting distinctive phases of activity but there was little evidence for clear differentiation within the dating of the material recovered. However, two areas containing ditches and gullies of probable late Iron Age/early Roman date were identified in the north-east and south-west corners, some of which were not apparent in the geophysical data.

## 4. Aims and Objectives

### *Research Aims*

The site was recognised as having the potential to contribute to the following research questions:

*The evolution of rural Iron Age settlement* (EH 1997; T3; Willis 2006; Knight et al 2012; English Heritage 2010). Recording the distribution of remains on the site may help to define domestic activity in contrast to other activity such as crop processing and may help to determine patterns of deposition on the site. It has been suggested recently that rates of change may vary between different regions. Comparison with other regions may show differences in resources exploited and crops grown over time.

*Settlement and land use on the East Midlands claylands* (Clay 2002; Willis 2006). Comparison with sites on different geologies may show differences in agriculture or economy. The agricultural economy of the region in the prehistoric period is poorly understood and this is only likely to be improved by consideration of a larger number of sites to study the area as a whole. The trial trench evaluation suggested that the survival of biological data (bone and charred plant remains) is good in this area and the site has a high potential for further understanding Iron Age economies.

*Deposition patterns on Iron Age sites.* Structured deposition is a phenomenon identified within Iron Age settlements (e.g. Marsden 1998b; Charles *et al* 2000; Willis 2006). Examination of deposition patterns within the possible pit features will provide further evidence of whether material has been discarded as rubbish or deliberately placed as special deposits.

The main objectives of the archaeological recording were:

- To identify the presence/absence of any archaeological deposits.
- To record the remains to be impacted by the proposed ground works including a sufficient record to establish the character, extent and date range for any archaeological deposits.
- To produce an archive and report of any results.

Within the stated project objectives, the principal aim of the recording was to establish the nature, extent, date, depth, and significance of the heritage assets within their local and regional context in mitigation of the potential impact upon them from the development (Cooper ed. 2006).

## 5. Methodology

The area of impact covered *c.* 0.8 ha, which was subject to machine stripping to confirm the extent of the deposits indicated by the trial trenching. Topsoil and overburden were removed carefully in level spits, under continuous archaeological supervision using a 360° mechanical excavator with a toothless bucket. The areas were excavated to the top of archaeological deposits or natural undisturbed substratum, whichever was reached first. The ground surface was examined and potential archaeological deposits were investigated by hand cleaning. All plans and sections were tied in to the Ordnance Survey National Grid by use of differential GPS and total station survey. The site was metal-detected on behalf of ULAS by members of the Hallaton Fieldworkers.

The full methodology for the work was set out in the WSI (Clay 2014) and is summarised here.

The stripped surface will be examined by hand cleaning and any archaeological deposits located will be planned and sample-excavated by hand as appropriate to establishing the stratigraphic and chronological sequence. All plans will be tied into the Ordnance Survey National Grid. Spot heights will be taken as appropriate. 50% of discrete archaeological features will be excavated. Where these form part of a recognisable structure or contain deposits of particular value or significant artefacts or ecofacts they will be fully excavated. The sampling strategy for deposits will be as follows:

- 25% of the exposed lengths of linear features associated with settlement or activity areas will normally be excavated (this includes pit alignments and slotted ditches). Sufficient samples of other linear features will be excavation (*c.* 10%). All excavation slots will be at least 1m wide and sections will be placed to provide adequate coverage of the features and will include excavation of intersections and terminals. A flexible approach will be adopted to the location of excavation samples, such that areas of exposed ditch fill with higher artefact or ecofact content may be targeted. Further sections may be investigated if significant patterns of deposition occur (for example indications of unexpected stratigraphy or specialised activity).
- 25% of ring gullies will normally be excavated to include excavation of the terminals and sections at each side and to the rear of the gully. Special regard will be given to significant stratigraphic relationships and concentrations of artefactual material. 25% of pit alignments will be excavated.
- In the event that stone structures or other buildings are encountered, these will be excavated in sufficient detail to establish their construction sequence and sequence of repairs or extensions. All stratigraphic associations will be recorded.
- All industrial features including potential ovens and hearths will be fully excavated and sampled for analysis



- Sufficient samples of other linear features not associated with settlement will be excavated. All excavation slots will be at least 1m wide. The spacing and interval of excavation slots will depend on the exposed length and nature of the feature.
- 5% of field boundaries will be excavated (ditches). Excavation slots will be at least 1m wide and located away from intersections with other features or deposits to obtain unmixed samples of material.
- A sample of tree throw holes/possible natural or geological features will be excavated sufficient to establish the nature of the features and to provide dating evidence.
- Furnaces or kilns are not anticipated but should these be encountered they will be left *in situ* until a strategy for their excavation has been developed.
- Any increase or decrease in sample ratio will be agreed with the Planning Archaeologist.
- The location of sections will be informed by metal detector survey over each unexcavated feature.
- Sections of any excavated archaeological features will be drawn. All sections will be levelled and tied to the Ordnance Survey Datum, or a permanent fixed bench mark.
- The area of recording will be recorded using GPS or an electronic distance measurer. These will then be tied in to the Ordnance Survey National Grid.
- Any human remains will initially be left *in situ* and will only be removed, under Ministry of Justice guidelines and in compliance with relevant environmental health regulations.

## 6. Results

The overall area of excavation comprised 0.8ha, extending over the two former paddocks (1.1 ha in total). The excavation was conducted between August and October 2014 following geophysical survey and trial trenching in 2011. Throughout August and most of September the weather was predominantly warm and dry, with occasional showers. The ground was therefore dry and some features were difficult to distinguish from the subsoil. Frequent rainstorms occurred from late September, which caused considerable waterlogging of the clay subsoil and hindered excavation.

The area was excavated in adjoining areas, which were not all open to excavation at the same time. However, the archaeology of all excavated areas was part of one continuous site and will be discussed as such in the text below. Area 1 constituted the greater part of the excavation, comprising a substantial level rectangular area with a projection to the south-east corner covering *c.*5472m<sup>2</sup>, across the eastern paddock. Principal features included several sub-circular and sub-rectangular enclosure ditches, associated with numerous pits, gullies and post-holes.

Area 2 covered approximately 465 metres square and was located on the north-western side of the site, adjoined to Area 1. The area was characterised by thinner topsoil and subsoil than was the case in Area 1, resulting in considerably heavier (plough) truncation, and featured a more variable geology with bands of clay interspersed with sand and gravel. Area 3 was the last part of the site to be excavated. It comprised the western part of the site, close to the entrance and covered an area of 1998 metres square. Several features continued from Area 1,

however, archaeology was generally less dense in this location, particularly towards the west of the area.

### ***6.1 A note on the Grouping, Phasing and Projection of Features***

Where ditches and gullies have been obliterated by later features and furrows, it has sometimes been necessary to project their line or to suggest where they might have terminated. Furrows in particular caused considerable damage to the earlier archaeology.

There are several stratigraphic phases of activity. However, it is not until the end of the Iron Age that the pottery can provide clear phasing evidence. The southern side of the site in particular contained dense archaeology, including a convergence of enclosure ditches, further complicated by furrows, and it was not possible to satisfactorily untangle all elements. The phasing has been defined by pottery and stratigraphic groupings; however Phases 2, 3 and 4 are overlapping and will be discussed together:

Phase 1a	Earlier prehistoric	No cut features, worked flints indicate human activity
Phase 1b	Bronze Age	One feature consisting of a pit containing an articulated sheep. Dated by C <sup>14</sup> .
Phase 2	Mid-late Iron Age	Earliest stratigraphic level or no stratigraphic relationships. Mainly pits, post-holes, ring gullies and gullies.
Phase 3	Mid-late Iron Age	Pits, post-holes, ring gullies, gullies and ditches, including enclosures. Truncating earlier features,
Phase 4	Mid-late Iron Age	Mainly ditched enclosures, overlying earlier features.
Phase 5	Belgic	Ditches, pits and post-holes, marking the end of late Iron Age activity
Phase 6	Mid-1st century AD	Ditches and pits.
Phase 7	Late 1st century AD	Ditched enclosures, marking the end of settlement activity on the site.
Phase 8	Saxon	Two post-holes containing Saxon pottery.
Phase 9	Medieval	Furrows
Phase 10	Post-medieval	Land-drains

The cut numbers are shown in square brackets e.g [1043] whereas the fills are shown in round brackets e.g (1042).

### ***6.2 Phase 1a: Earlier prehistoric (pre- 1000BC)***

There are no earth-fast features associated with this phase of activity, however, flints recovered from the site were considered to be residual in later features (L. Cooper, this report). Two flints, a bladelet and a serrated flake hint at Mesolithic activity, the remaining flints are 'domestic' tools and knapping debris dating from the Neolithic – Bronze Age.

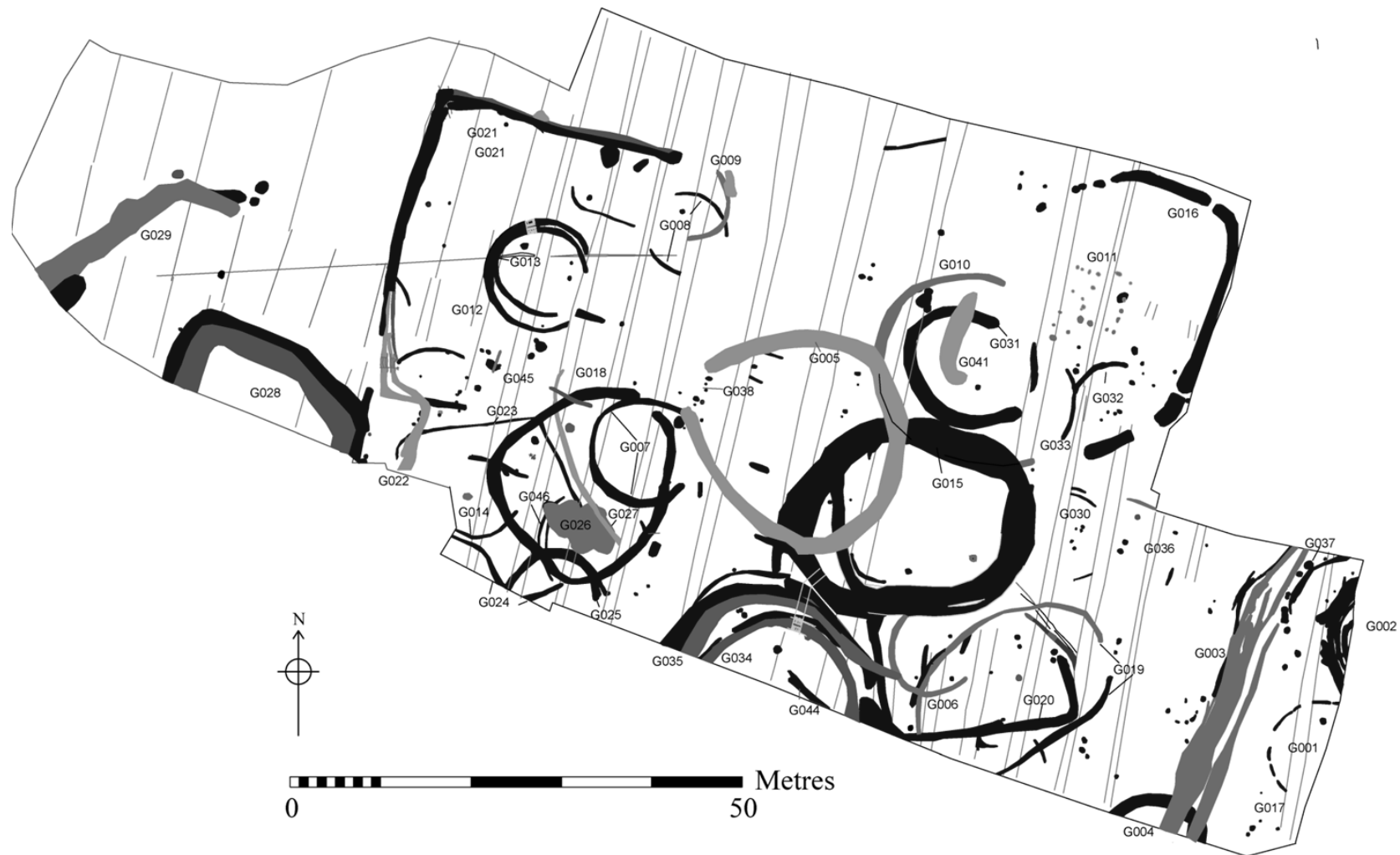


Figure 6: Plan showing all archaeological features

### **6.3 Phase 1b: Bronze Age (2000-800BC)**

Only one feature was dated to this period. It was located within the large sub-circular enclosure towards the east of the site (G015) however there is no direct physical association between the two features or any other evidence to suggest that the two features are contemporary.

#### **Pit SG1597 (1595 (skeleton), 1596)**

The pit was located in the south-east corner of enclosure G0015, approximately 1.4m from the boundary (Figure 8). It had a sub-circular cut with concave sides and base, measuring 0.79m in diameter and was 0.26m deep. The fill consisted of mid grey brown sandy-clay. A virtually complete sheep skeleton was recovered from the feature, orientated roughly east-west. It was laid on its left side, with its legs folded and the head bent backwards over its spine. There was little space in the pit around the burial and no other finds were recovered other than flint, which may be residual. Due to the lack of dating evidence a sample of the bone was sent off for C14 dating, which produced the result of BP3018+-31, placing it in the late Bronze Age.



Figure 7: Sheep skeleton within pit SG1597

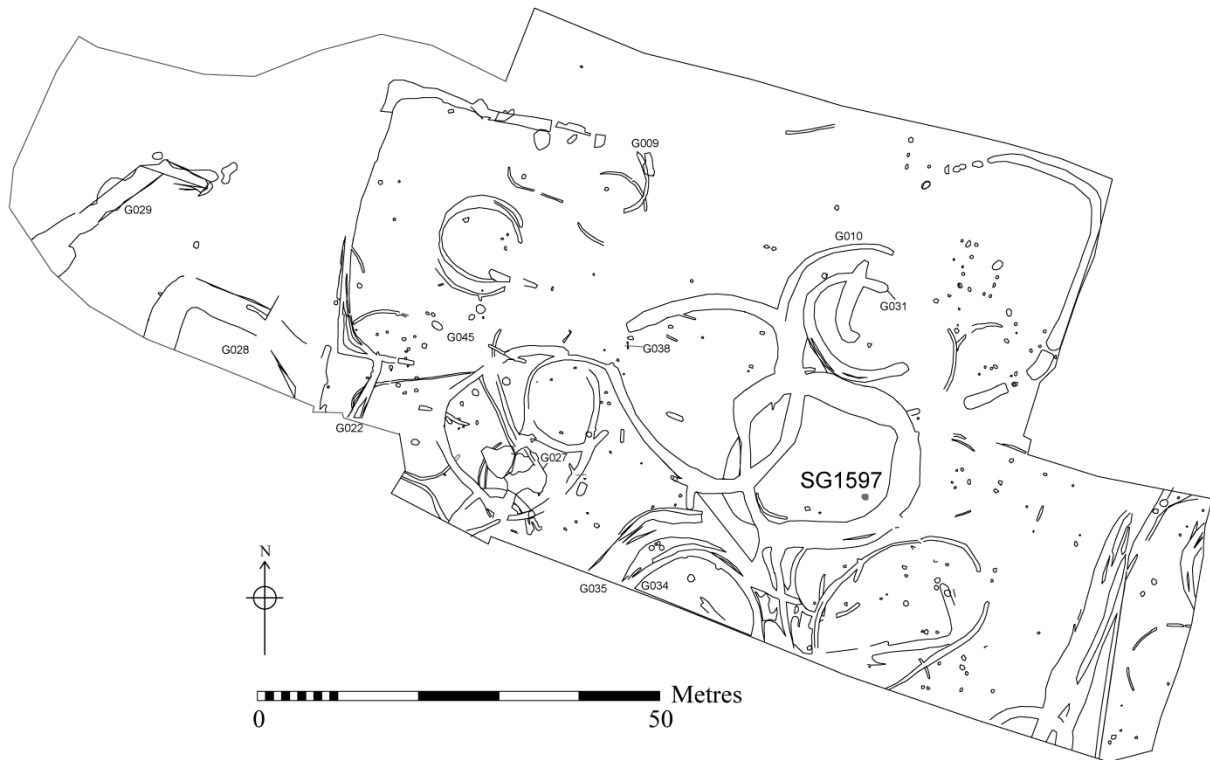


Figure 8: Plan showing location of pit SG 1597

#### ***6.4 Phase 2-4: Mid-late Iron Age (450BC-AD50)***

The majority of activity on site took place during the broad parameters of the mid-late Iron Age. While there are some indications that features containing Scored Ware are later rather than earlier (see Johnson, this report), it was not possible to definitely phase features within the period based on the pottery evidence. Stratigraphic relationships indicate relative phasing within particular areas of the site, but cannot be correlated with stratigraphic phases across the site where no direct relationships exist (e.g. Phase 4 (Iron Age Strat 3) in one area of the site is not necessarily contemporary with Phase 4 elsewhere). However, it is clear that the peak of occupation occurred within this period and features were cut and re-cut, with many overlying each other, indicating the longevity of the settlement.

The archaeological deposits are described broadly from east to west, organised by group where possible.

#### ***South-east side of site***

##### **G001 Ring gully (Figure 10)**

Pit SG 1043: [1043] (1042)

Ring Gully SG 1007: [1007]; (1070), (1007), (1006), (1005), (1004), (1003), (1056), (1069)

Approximately half of ring gully SG1007 was exposed on the eastern edge of the site, with the remainder outside of the excavation area. This feature comprised a shallow and ephemeral ring gully, sometimes little more than a stain on the surface. Its shallow nature meant that it was difficult to know whether the feature was originally non-continuous or if, as is more likely, the feature had an undulating base and has been truncated to an extent that the more shallow sections have been obliterated. The feature varied in width between 0.18m and 0.23m and was a minimum of 0.06m and a maximum of 0.14m in depth. The fill consisted of mid/dark greyish brown clayey silt, with moderate small stones and pebbles. The feature had an estimated internal diameter of 11.0m.

The only internal feature seen was a shallow pit, SG1043, seen in the northern half of the ring gully. It was sub-rectangular in shape, measuring 0.90 x 0.70m and was only 0.09m deep with a flat base, presumably highly truncated. It was filled with grey brown sandy-clay.

### **G002: Ring ditch (Figure 10)**

SG1062, Ditch: [1062] (1061);  
SG1062 Ditch: [1113], (1113);  
SG 1064 Gully: [1064], (1063);  
SG1066 Gully: [1066], (1065);  
SG1066 Ditch: [1171], (1170);  
SG 1068 Ring Gully: [1068], (1067);  
SG1068 Ditch: [1165], (1164);  
SG1067 Ditch: [1167], (1068);  
SG 1115 Ditch: [1115], (1114);  
SG1169 Ditch: [1169], (1168);  
SG1173 Pit: [1173], (1172);  
SG1175Ditch: [1175], (1174);  
SG1339Gully: [1339], (1338);  
SG1341 Gully: [1341], (1340), (1348);  
SG1343 Gully: [1343], (1349) (1342);  
SG1345 Gully [1345] (1344);  
SG 1347 Gully: [1347], (1346);

G002 comprised a partially exposed series of ring ditches on the eastern edge of the site north of G001 (Figure 9). Although broadly concentric, some of the ditches are more curvilinear, appearing to splay away from each other at their terminals. Three butt ends suggests repeated re-cutting of an entrance on the west side, ranging in size from 1.4m- 1.8m. A series of at least three continuous ditches, which truncate the terminals suggest that the position of the entrance may have changed in the later phase of use. The maximum external estimated diameter is 18.5m and the minimum internal diameter is 13.5m. Although the ditches intercut each other, they do appear be part of the same broad group and have no evident interaction with other groups of features on site.



Figure 9: The ditches of G002, looking east

Details of the individual features are as follows:

SG1062 (1061) was a V-shaped ditch and the western-most of three ditches, measuring 0.80m wide and 0.40m deep. It contained mid brown sandy silty-clay with which mid-late Iron Age pottery and was truncated by SG1068. The central of the three ditches was SG1068, (1067), a shallow U-shaped gully, see SG1064 and SG1061. It truncated SG1062 but had an unclear relationship with SG1064. The southern terminal was 0.23m deep and 0.39m wide. It appeared to correlate with cut 1167, seen further south (and which appears to be a recut within 1169). The fill consisted of dark brown clayey silt with clay lenses. SG1064, (1063) was a wide, steep-sided, flat based gully adjacent to SG1068 and SG1062, with a width of 0.66m and a depth of 0.25m. It had an unclear relationship with SG1068 but was probably the same as [1113] seen further south. The fill consisted of mid brown sandy silty-clay from which mid-late Iron Age pottery was retrieved.

Gully SG1066 (fill 1065) was located east of SG1064 and was a shallow flat-bottomed gully representing the inner part of ring ditch. Although it was highly truncated, with only the very base remaining, it showed clearly in plan and was 0.28m wide. It correlated with [1171] (1172), which was seen to the south and was 0.27m wide and 0.11m deep. The fill was light greyish brown silty-clay.

SG1115 (fill 1114), the south-west terminal of the linear ditch, was truncated by ditch 1113 (SG1062). It was steep sided with a flat base, measuring 0.36 wide and had a depth of 0.19m. The fill consisted of mid greyish brown clayey silt.

Ditch SG1169 (1168) had steep, almost vertical sides and a concave base, containing mid-yellowish brown silty-clay. It measured 0.40m wide and was 0.34m deep but was later recut to a more shallow depth (0.27m) ([1167], (1166)). It was relatively finds-rich suggesting deliberate backfilling with occupational debris. SG1173 (1172) was either a ditch terminal or possibly a truncated pit. Its relationship with the other features in this area is unclear.

Ring Ditch 1175 (1174) was the inner-most of the ring ditches, encountered on the eastern edge of the site. A section excavated through the ditch showed that it measured 0.65m wide and was 0.30m deep, with a U-shaped profile. The feature had a single fill (1174), which was mid greyish brown clayey silt, from which mid-late Iron Age pottery was recovered.

The southern part of the ring ditch complex remained unexcavated, however the area was cleaned and planned and finds were recovered from their surfaces.

SG1339 (1338), SG1343 (1342), SG1345 (1344): Unexcavated ditch terminals, intercutting relationships seen on surface.

SG1341 (1340): Unexcavated part of ring ditch, impossible to be sure exactly how it fits into the sequence.

SG1347 (1346): Unexcavated part of ring ditch. Only a small portion seen in plan but it appears to be cut by SG1339.

### **G017: Post-holes in South-east corner (Figure 10)**

Post-hole SG1060, (1059)

Beam Slot SG1029, (1028)

Post-hole SG1027, (1026)

Post-hole SG1025, (1024)

Post-hole SG 1011, (1010)

South of G001, four post-holes were clustered in the southeast corner of the site. Together these could form part of a structure which extends outside the area. However, they do differ in form. SG1027 is a post-hole with a deeper rounded cut on one side (0.13m) and a flatter area on the other. SG1025 was circular and shallow (0.06m deep) with a flattish base. SG1029 has a 'classic' post-hole profile with steep sides and a possible post pipe observed in the fill; it was 0.61 x 0.41 in size and was 0.17m deep. SG1060 was shallow (0.09m) and had a lop-sided profile, deeper on one side than another. A small post-hole, SG1011, was located between the cluster and G001.

All of the features had similar fills consisting of mid greyish brown clayey silt, although SG1011 and SG1029 had a higher charcoal content. Pottery dating to the mid-late Iron Age was retrieved from SG1011 and SG1027.

### **G003: Boundary/drainage gullies (Figure 10)**

Gully SG1072, Gully SG1074, Ditch SG1076, Curvilinear Gully SG1082, Pit SG1084], Curvilinear Gully SG087, Gully SG1089, Curvilinear Gully SG1090, Ditch SG1092, Ditch SG1095, Ditch SG1096, Ditch SG1098, Gully SG1100, Gully SG1137, Ditch SG1139, Curvilinear Gully SG1143, Gully SG1145, Ditch SG1149, Post-hole SG1151, Gully SG1153, Curvilinear Gully SG1177, Ditch SG1214, Ditch SG1216, Ditch SG1218

West of G001 and G002, a series of shallow, narrow, intercutting, curvilinear gullies were observed running through the excavation area, orientated approximately north-north-east to south-south-east, with a slight turn to the east at the northern end. Several excavated sections showed that the gullies were dug as separate features and none were completely linear. The



number of terminals indicated that the gullies were dug as short stretches and, while orientated approximately the same way, could be seen crossing each other. It was rarely possible to trace individual ditches between the excavated slots.

The fills for most of the features were very similar, consisting of mid greyish brown silty-clay. The similarity in fill coupled with the shallow depth of most of the features meant that it was difficult to determine the relationships between the features. At the northern end of the excavation area the features appeared to be particularly shallow, rarely more than 0.15m deep. However, survival appeared to be better at the southern end; the ditches were up to 0.50m deep here. Occasional shallow post-holes were recorded, although these appear rather insubstantial to be fence-posts.

They are very narrow and shallow for boundary ditches, therefore it is suggested that they are more likely to be for drainage, perhaps associated with agricultural practices (Figure 14). The pottery was mid-late Iron Age with the exception of a sherd of Belgic pottery from SG1107, indicating the longevity of the gully system.

Table 1: Summary of features contributing to G003

SG	Context	Width (m)	Depth (m)	Shape	Relationship?
Gully 1072	1071	0.20	0.08	Concave base, terminal	
Gully 1074	1073	0.26	0.09	Concave	
Ditch 1076	1075	0.54	0.08	concave	Same as 1141 (1140)
Curvilinear Gully 1082	1081	0.52	0.08	Concave	
Pit 1084	1083	0.88 x 0.38	0.22	Sub-rectangular, steep-sided, concave base	
Curvilinear Gully 1087	1085, 1086	0.40	0.12		Cuts 1089
Gully 1089	1088	0.20	0.08	Flat base, irregular sides	Cut by 1087
Curvilinear Gully 1090	1091	0.28	0.05	Undulating base, irreg sides	
Ditch 1092	1093	1.18	0.36	45 degree sides, flat sides	Cut by 1110 (pit)
Ditch 1095	1094	0.75	0.27	30 degree, undulating	
Ditch 1096	1097	0.48	0.16	30 degree, undulating	
Ditch 1098	1099	0.60	0.10	30 degree, undulating	
Gully 1100	1101	0.50	0.13	30 degree, undulating	Same as 1182
Gully 1137	1136	0.25	0.10	30 degree, undulating	
Gully 1107					
Ditch 1139	1138	0.40-0.65	0.15	Irreg. flat, terminal	
Curvilinear Gully 1143	1142	0.23-0.60	0.13	Terminal	
Gully 1145	1144	0.50	0.16	Irregular sides, flat base	
Ditch 1149	1148	0.40	0.10	Irregular sides, flat base	
Post-hole 1151	1150	0.18	0.08		
Gully 1153	1152	0.35	0.11	Terminal	
Curvilinear Gully 1177	1176	0.30	0.05		
Ditch 1214	1215	0.90	0.50		Cuts 1218
Ditch 1216	1217	-	0.36	Flattish base	Cuts 1218
Ditch 1218	1219	-	0.40		Cut by 1214 & 1216

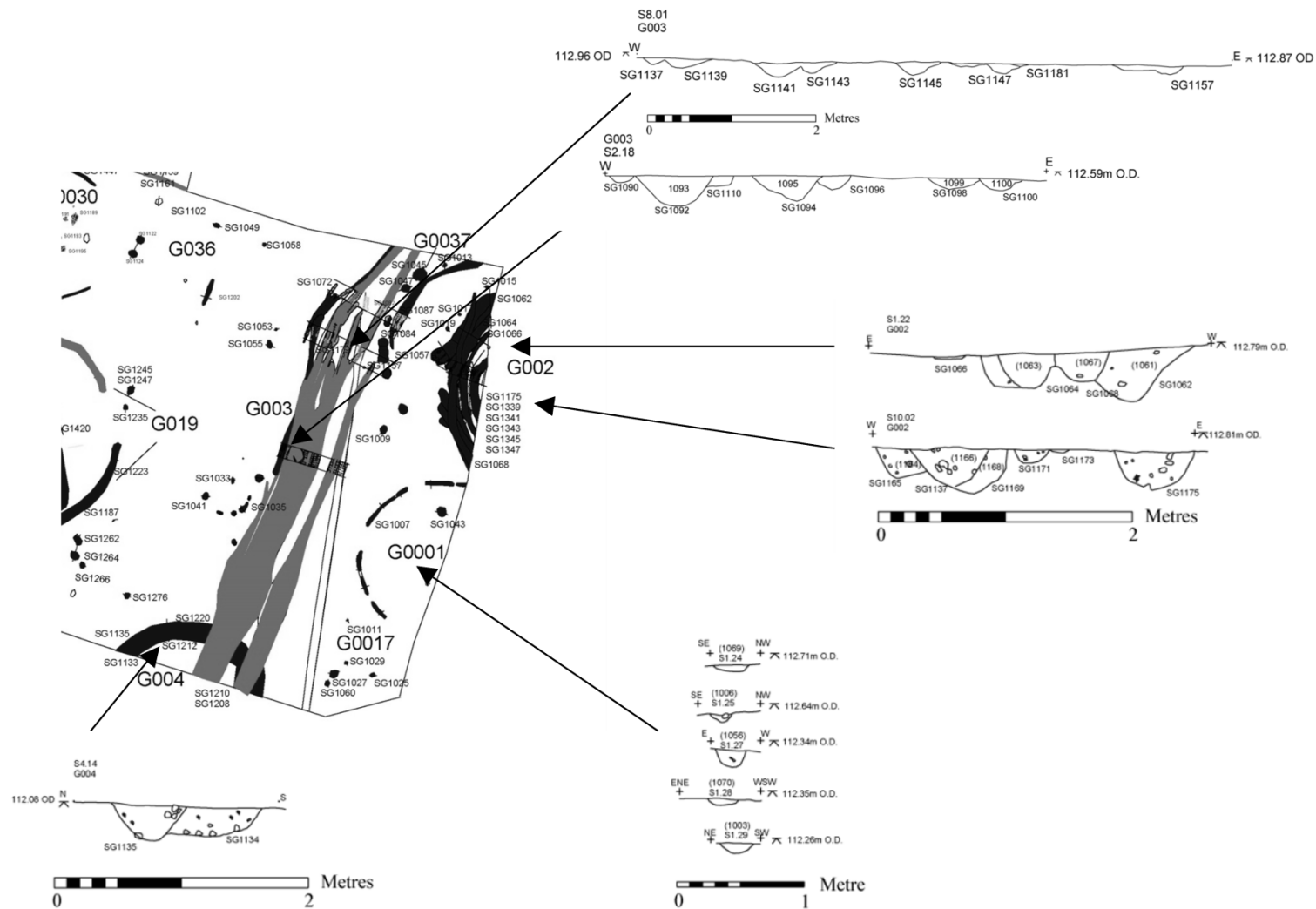


Figure 10: The eastern edge of the site: G001, 002, 003 and 004

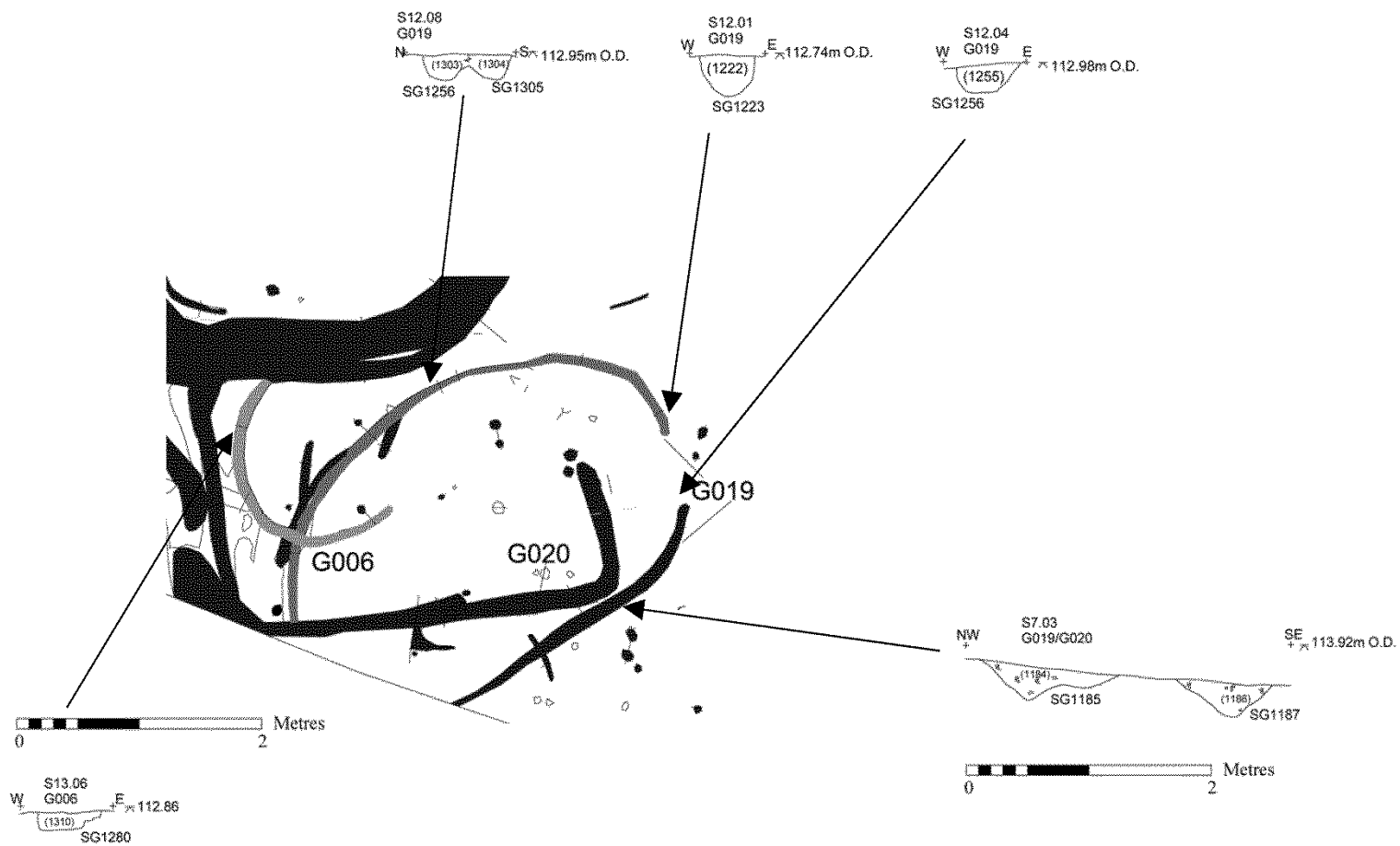


Figure 11: G006, 019 and 020; sections

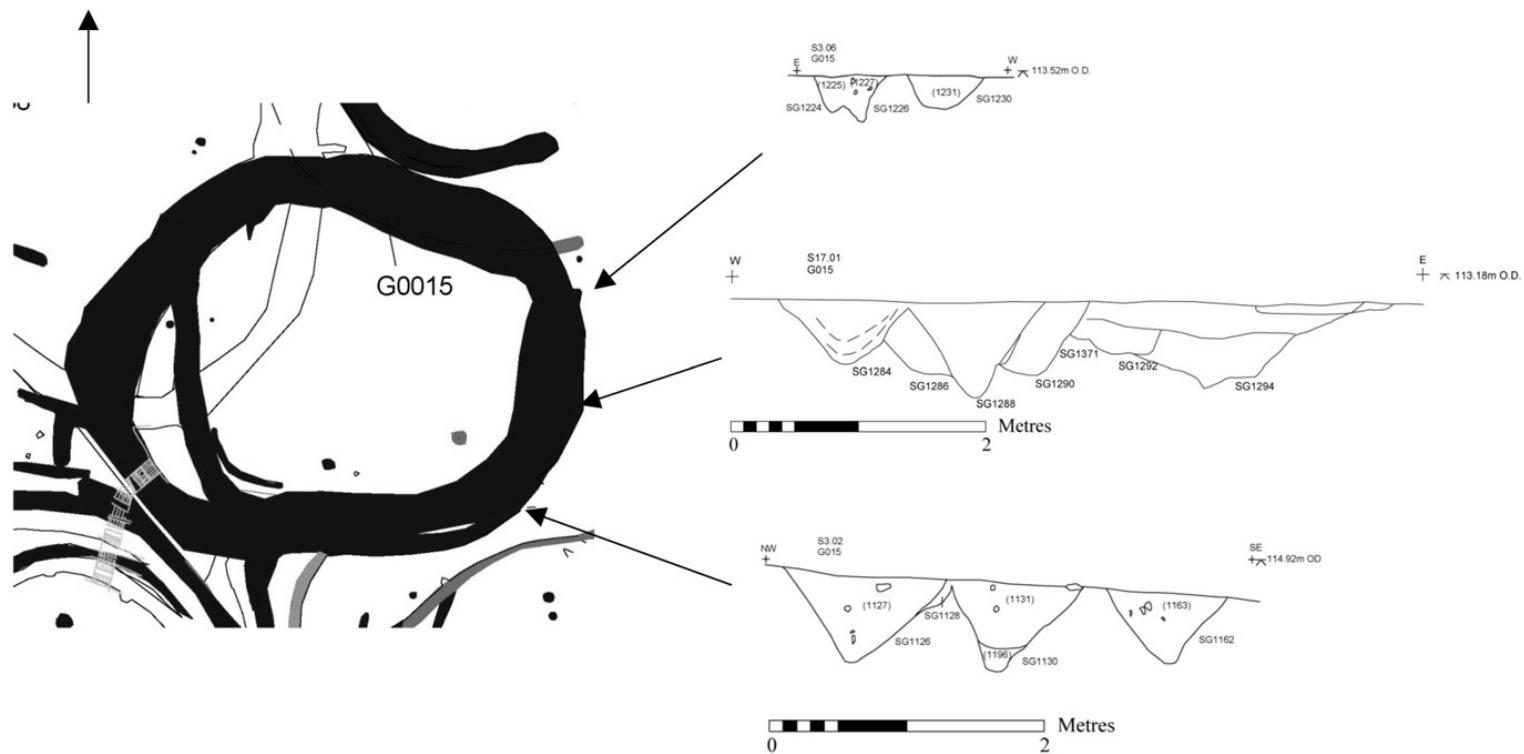


Figure 12: G015, showing sections on east side of feature

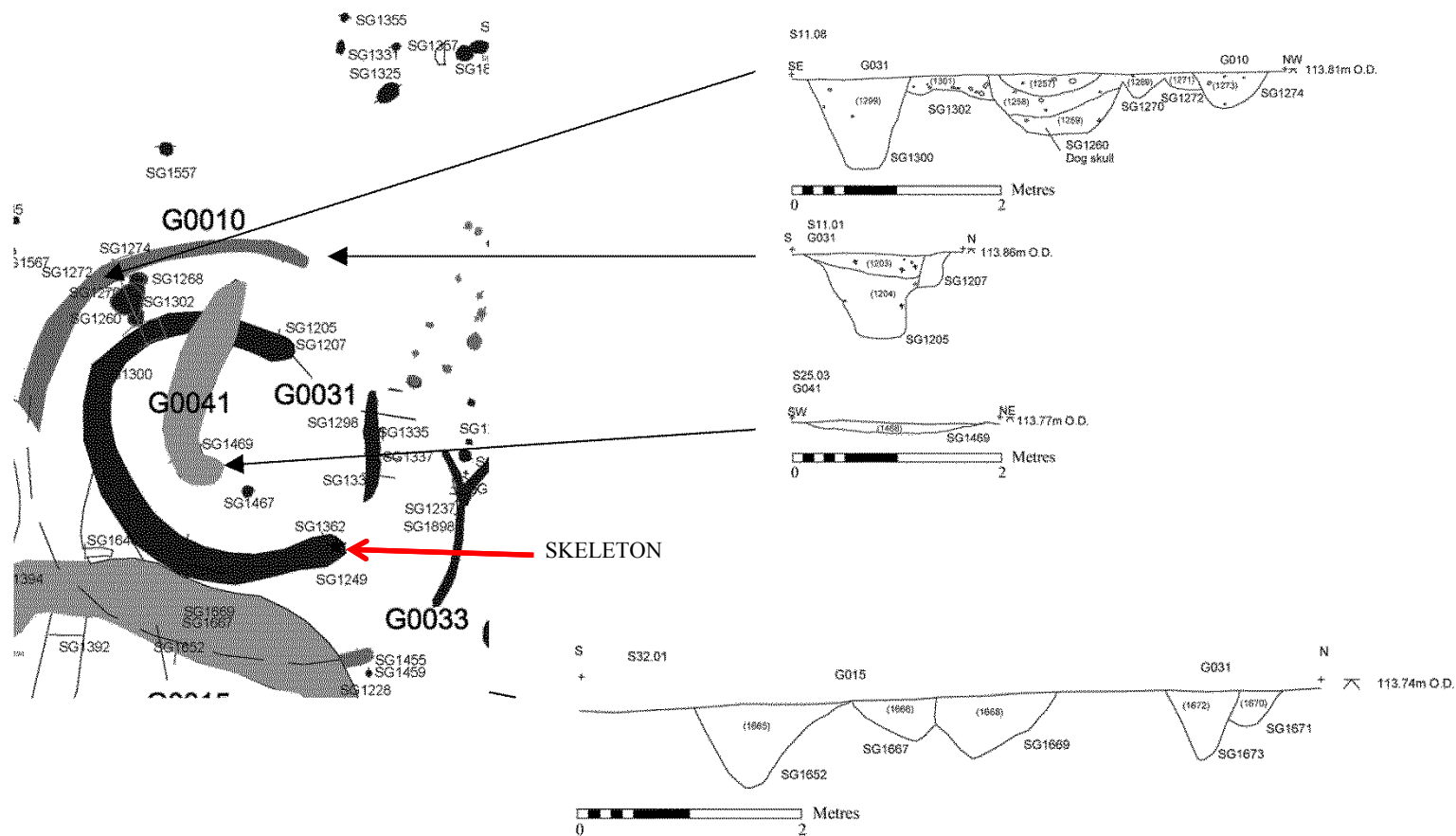


Figure 13: G010, 031 and 041; sections



Figure 14: The gullies of G003 and post-holes of G037, looking south

**G037: Possible roundhouse- ring gully near north-eastern baulk (Figure 10)**

Post-hole SG1013, Pit SG1045, Pit SG1047, Pit SG1084, Pit SG1155

A group of post-holes and an inner gully form an arc which could potentially be another roundhouse.

SG1013 (1012) was a post-hole located on the north-eastern edge of Area 1. It was circular, straight-sided with a flat base and 0.29m deep.

SG1045 (1044) was a large shallow pit/post-hole next to enclosure with possible post/stake hole within (1050, 1051). It measured approximately 1m wide and was 0.15m deep.

The fill of SG1047 (1046) was light grey brown sandy-clay. The feature measured 0.60 x 0.70m and was 0.20m deep. It was sub-circular, straight sided with flat base.

SG1084 (1083) was irregular in shape with vertical sides and a concave base. It had a mid-grey brown silty-clay fill.

SG1155 (1154) was a sub-circular pit/post-hole measuring 0.60 x 0.70m and 0.23m deep.

Gully SG1089 (1088) was associated with G003 but was located inside the ring of post-holes and it may group more appropriately with G037. It was truncated by SG1087, measured 0.20m wide and was 0.08m deep. The fill was mid grey brown silty-clay.

**G004: Ring ditch, south end of site (Figure 10)**

Ring Ditch SG1133, Ring Ditch SG1135, Ring Ditch SG1209, Ring Ditch SG1210, Ditch SG1212, Ring Ditch SG1220

A series of curving ditches was partially exposed close to the southern baulk. On the surface they appeared to be a single feature but were actually composed of several, ranging from two, on the western side, to a minimum of four, when seen in the second slot. Stratigraphically, it was hard to distinguish the features from each other, particularly as the excavated sections showed neither the same number of features nor the same sequence of events. From this it can be concluded that the G004 ring ditches were excavated in short stretches and re-cut multiple times. However, it was clear in section that G004 was truncated by the north-south aligned ditches (G003), and therefore represent an earlier phase of activity.

Two slots excavated though the feature revealed the following details. Within the western slot, ditch SG1133 (-1132) had steep sides and a flattish base. It was a minimum of 0.6m wide and was 0.23m deep. The fill consisted of mid-greyish brown silty-clay. This was truncated by a second and deeper ditch SG1135 (-1134), which had steeply sloping-sides and a rounded base. It was 0.55m wide and 0.28m deep. The fill consisted of dark brownish grey clay and was more finds-rich than SG1133.

A slot excavated 2.5m further east did not provide corresponding evidence. A shallow gully, SG1208, (-1209) represented the inner side of ring ditch and appeared to be truncated by SG1210. It had a minimum width of 0.30m and depth of 0.13m. The fill was mid-greyish brown sandy-clay. SG1210, (-1211) was the next ditch in the sequence, although the fill was very similar to SG1208. It had a minimum width of 0.30, and was 0.23m deep. Although ditch SG1220 (-1221) was not fully excavated, it was possibly truncated by SG1212, although the relationship was unclear. The fill was dark reddish brown sandy-clay. Ditch SG1212 (-1213) was positioned in the centre of the ring ditches, and appeared to be the latest recut in the sequence, possibly cutting both SG1210 and SG1220. The fill was a firm, dark orange brown sandy-clay. The primary reason for the excavation of this slot was to determine the relationship with the linear gully group G003 (which established that the ring ditch was truncated by G003).

**Post-holes:** SG1262; SG1264; SG1266; SG1276; SG1041; SG1033; SG1035 (Figure 10)

A series of post-holes were noted in the area west of G003. These were quite variable in terms of size, shape and depth. While their proximity to each other suggests an association between them, they do not clearly represent either round or rectangular structures. Some appear to be in pairs, for example SG1262 and SG1264, which may hint at the present of two-post structures, however, with little further evidence there is a limit to possible interpretations.

**G030: Concentric ring gullies and post-holes east of G0015 (**

Figure 15 and Figure 16)

Post-hole SG1189, Post-hole SG1191, Post-hole SG1193, Ring Gully SG1447, Ring Gully SG1449

A series of ring gullies and post-holes, generally of a shallow and ephemeral nature represented two concentric roundhouse gullies. The inner one has a diameter of c.10m. Although the terminals are not aligned with each other they do both indicate an entrance on the east side of the structure. SG1449 (fill 1448) was the outer ring, comprising the northern stretch of gully and its terminal. The fill consisted of mid-grey brown silty-clay and it was 0.20m wide and 0.07m deep. It was truncated on the west side by a furrow and did not re-appear beyond it. Pottery dated the feature to the mid-late Iron Age. SG1447 (-1446) was the inner gully, which had a returning section on the south side (recorded in plan only). The

feature was probably heavily truncated, measuring just 0.22m in width and 0.06m in depth. The terminal is located further east than that of SG1449.

Several post-holes are located within the ring gullies and their central position suggests an association with the structure. They had similar fills consisting of mid greyish brown sandy-clay. SG1191 (-1190) measured 0.19m in diameter and was 0.15m deep with a flat base.

Adjacent post-holes SG1189 (fill 1188) and SG1198 (-1197) were circular, with steep vertical sides and flat bases. SG1189 was shallow with no finds. SG1198 measured 0.35m in diameter and was 0.20m deep. The relationship was unclear. SG1193 (-1192) was oval, slightly irregular at the surface, with vertical sides and a flat base. It measured 0.34 x 0.20m and was 0.22m deep.

Post-holes SG1122 and SG1124, described with G036 below, may also belong to this group. There was a distance of c.0.80m between them, which would be sufficiently wide for a doorway and they are also located on the east of the ring gully group, which would be the expected place for an entrance.

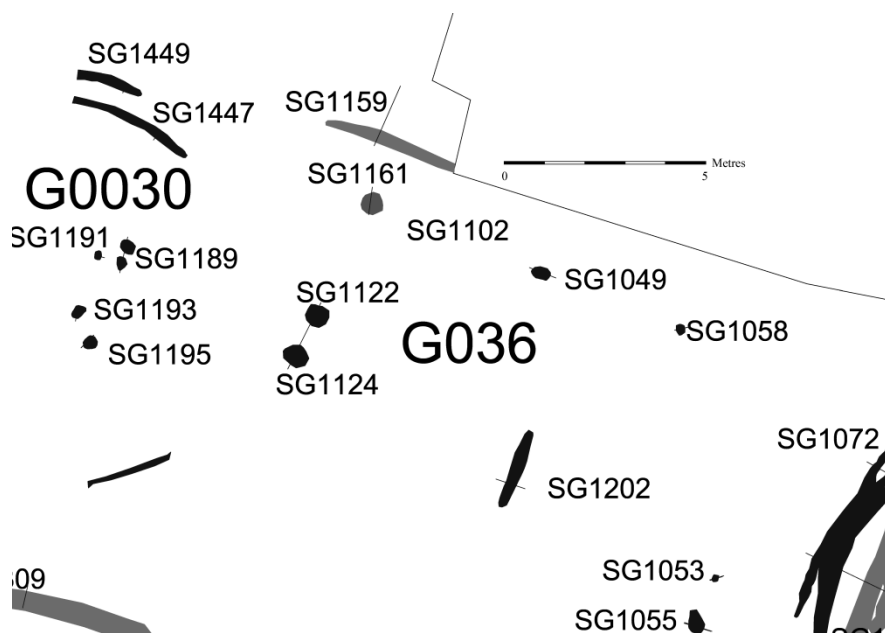


Figure 15: Plan of G036 and G030



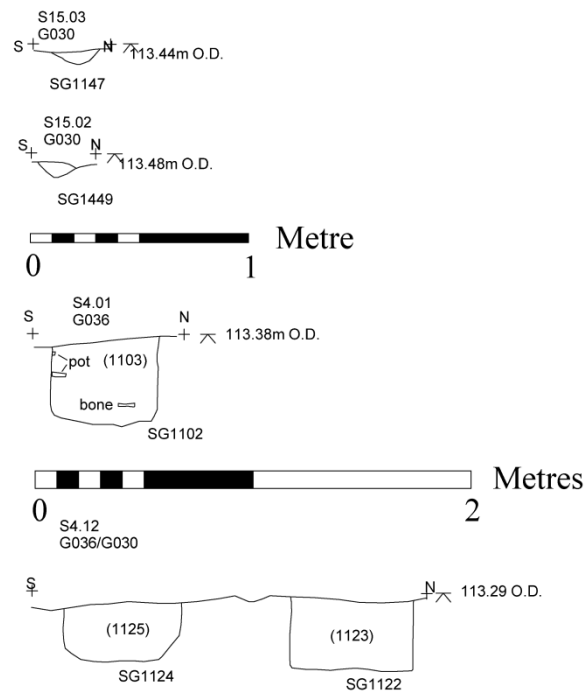


Figure 16: Sections through G030 and G030

### **G036: Possible structure, east of ring gully G030 (**

Figure 15 and Figure 16)

Pit SG1049, Post-hole SG1058, Post-hole SG1102, Post-hole SG1122, Post-hole SG1124

Several substantial post-holes with charcoal-rich fills, vertical sides and flat bases were positioned on a north-south alignment, east of G015 and west of G003. Their proximity to the northern edge of excavation raises the possibility that further features associated with this group were present under the baulk. Post-holes on an east-west orientation have been included in this group because they appear associated in plan, forming a right-angled shape. The visible part of this potential structure measured 8.45m x 7.75m.

The north-south aligned post-holes included SG1102 (Figure 17), which had dark charcoal-rich sandy-clay fill with frequent fire-cracked pebbles, possibly forming packing. It had a diameter of 0.57m and was 0.40m deep; with almost vertical sides and a flat base. This feature was the only one in the group to contain contained Belgic pottery and is therefore also included in that section of the report.



Figure 17: Post-hole SG1102, G036

Post-holes SG1122 and SG1124 were located further south on the same line. SG1122 measured 0.55m in diameter by 0.30m deep and had a rich fill of mid-greyish brown sandy-clay with pebbles and charcoal. It was north of SG1124, which had similar dimensions of 0.58m in diameter by 0.24m deep. It had a charcoal-rich fill of greyish brown sandy-clay with moderate heat-cracked pebbles. Both had steep sides and a flat base. There was a distance of *c.*0.80m between them. Although these have been grouped with G036, it is possible that they actually belong with G030, as they may represent an entrance on the eastern side of one of the ephemeral roundhouses.

Two post-holes on an east-west alignment, that may be part of the group included SG1058 (1057). This was oval with steep sides, measuring 0.23m x 0.15m and was 0.23m in depth with a point at the base, possibly for a stake. There were no finds. A second post-hole SG1049 (1048) was also present to the west.

A short stretch of gully or beam slot SG1202 (1201) east of SG1122 and SG1124, may be associated with the post-hole group. It contained mid-late Iron Age pottery and heat-cracked pebbles. A series of very ephemeral, potential post-holes were seen but these may equally have been natural variation within the subsoil and failed to fully convince.

#### **G019: Shallow sub-oval enclosure gully (Figure 11)**

Ditch SG1187, Gully SG1223, Ditch SG1254, Ring Gully SG1256, Gully SG1738

To the south-west of G036 were a series of intercutting features including G019. This was a well-defined but narrow ditch enclosure, mostly containing a single fill and therefore indicative of one phase of activity. There were two clearly delineated sections, each with a rounded terminal to the north-east, indicating an entrance at this point. The proximity of the two terminals and similarities in the profile and fill led to the definition of the group. The south-western corner of the feature was located beyond the southern baulk. However, the feature cuts SG1233 but in turn appears to be cut by the putative roundhouse within the

square enclosure (SG1280). The distance between the entrance terminals was 3.8m, the exposed length of the feature was 22m and the width was 14m.

Two sections were excavated through the linear southern arm of the enclosure. SG1223, a terminal with U-shaped profile, measured 0.40m wide and 0.30m deep. The feature widened away from the terminal, as a section excavated through the length of the feature demonstrated, measuring 0.80 in width and 0.30m in depth (SG1187).

A series of sections were excavated through the curvilinear northern arm of the feature (SG1256: (1303), (1278), (1277), and (1255)). At the northern terminal it measured 0.52m wide and was 0.21m deep. In the next section along (W:0.48m D:0.29m), there were two fills: (1277) was the main backfill, with (1278) being a layer of slumped or backwashed natural subsoil into the feature. A single fill, consisting of mid greyish brown sandy-clay, was noted in the subsequent section (1303). The gully measured 0.42m wide by 0.20m deep at this point. In this section, an association with several post-holes was evident. The gully had an unclear relationship with post-hole SG1305 (1304) but cut SG1309 (1308). A third post-hole was positioned on the northern (external) side, SG1307 (1306), had no direct relationship. A further section of the ditch (SG1254 (1253) appeared to truncate a short but deep section of gully (SG1233).

Towards the southern baulk, a further section SG1738 (1737) was excavated. The feature was slightly wider at this point (W:0.53m; D:0.30m). The fill comprises greyish brown, silty-clay with charcoal flecks, animal bone and mid-late Iron Age pottery.

#### **G020: Square enclosure associated with G006 (Figure 11)**

Gully SG1185, Ditch SG1420], Gully SG1432, Gully SG1544, Ditch SG1546, Ditch SG1740 Post-hole SG1414, Post-hole SG1416

In the same area as G019, but evidently not contemporary, there was a square-sided enclosure. Unfortunately, there were no exposed junctions where the relationship between the two features could be established. The enclosure was orientated slightly off an east-west alignment and measured 19.5m x 13m. Three sides of this feature were recorded and there was some variation in its width and depth. A terminal indicated an entrance on the north-eastern side, on a similar orientation to that of the ring gully (G006), with which it may be associated. This feature had a single fill in all excavated sections, with the exception of the ditch terminal SG1432 (1431), which contained recut SG1432 (1419). The original profile was masked by the recut and the ditch was also obscured by a furrow further south. Two post-holes SG1414 and SG1416 were positioned close to the terminal, perhaps representing posts located at the entrance.

Two further sections were excavated on the south-eastern arm of the feature; SG1185 and SG1546 (1545). The fill was dark brown clay sandy-silt and contained pottery and bone. The width of the feature was 0.92m at this point and it was 0.47m deep. It truncated an adjoining gully, SG1544, and was adjacent to post-holes SG550 and SG1577, which may also indicate associated fencing or a palisade. SG1544 (fill 1543) was the terminal of a north-east to south-west aligned gully, which was truncated by SG1546. The fill was mid-grey brown silty-clay and the gully measured 0.33m wide and was 0.13m deep. It was not possible to trace it further due to disturbance by the furrows.

A slot excavated through the western arm of the feature SG1720 (1719) had a U shaped cut and measuring 0.55m wide by 0.23m deep. The feature contained a single fill, which consisted of brown silty-clay with fragmented bone and slag inclusions.

There were several post-holes which may be associated with activities taking place within the enclosure. SG1327 and SG1329 are located together, facing the entrance. Others, such as SG1473 are more randomly located.

**G006: Ring gully (Figure 11)**

Ring Gully SG1280 (1279) and (1310)

G006 was a putative roundhouse on the southern side of the site, which appeared to be within the square enclosure G020. The feature was composed of a continuous (drip) gully, curving round the west and south. There was a terminal indicating an entrance on the east side but no corresponding terminal to the west. The shallow nature of the feature suggests that this has been truncated. The diameter of the feature was estimated to be 9m. The ring gully is recorded as cutting G019, which therefore suggests that G006 and, consequently G020, are the later features.

The fill of the terminal (1279), consisted of dark grey brown sandy-clay with charcoal and fire-cracked pebbles. It measured 0.46m wide and was 0.17m deep and there was a post-hole, SG1282, next to the terminal. Fill 1310 was assigned to the fill of a mid-section through the gully (measurements: W:0.60m, D:0.16m).

**G015: Largest complex circular enclosure in centre of A1 (Figure 12)**

Ring Ditch SG1126, Ring Ditch SG1128, Ring Ditch SG1130, Ring Ditch SG1162, Ring Ditch SG1224, Ring Ditch SG1226, Ring Ditch SG1228, Ring Ditch SG1230, Ditch SG1284, Ring Ditch SG1286, Ring Ditch SG1290, Ring Ditch SG1292, Ring Gully SG1294, SG1366, Ring Ditch SG1380, Ring Ditch SG1382,

Directly north of G006 and possibly joining G020 was a large complex sub-circular enclosure formed of multiple intercutting ditches and gullies. It had a minimum internal diameter of *c.*15m and a maximum diameter to the external edge of *c.* 26m. The line of the complex and, clearly long-lived enclosure, G015, showed evidence for a change in shape on the west side. A section excavated through G034, 035 and part of G015 helped to assign some of the ditches to particular enclosures. Pottery from the outermost ditch on this side indicates a later Iron Age date for this part of the enclosure and it is therefore possible to suggest that it was remodelled in this period.

Sections excavated at several intervals across the enclosure revealed that the area was demarcated by a large number of different parallel ditches, and had multiple backfilling and re-cutting episodes. It was not possible to establish the detailed sequence of construction. This was due in part to similarities between the fills and sometimes to the lack of any stratigraphic relationships. The ditches were sometimes separated by natural subsoil, indicating that they were not always recut in the same location but diverged from each other for a stretch. As one section clearly shows (Figure 18), the ditches were not just re-cut but were actually excavated side by side, sometimes slightly cutting into each other. Excavation also revealed evidence for multiple ditch terminals, showing that they were not originally dug as continuous features but were excavated in shorter stretches, often terminating and restarting within the space of a metre. The core of the feature comprises a minimum of three

adjacent ditches, with some sections containing evidence for further recuts. Pottery evidence was not sufficient to indicate phase change between the ditches, which all contained pottery dating from the mid-late Iron Age. Most of the ditches were very steep sided with a rounded almost V-shaped point at the base, although some had a softer U-shaped profile. Depths for the recuts varied between 0.2m and 0.8m, while the narrowest ditch was 0.4m and the widest 1.25m. Since the contributing ditches have been shown to be discontinuous, it is unfeasible (and probably of little archaeological significance) to establish a phase sequence for the individual cuts. Rather more important is the overall pattern and the relationship of the enclosure with the surrounding features. One particularly interesting aspect of the enclosure is the absence of an obvious entrance. Either the centre was reached via a bridge or causeway or the entrance shifted over time. On the west side the inner ditch, SG1380 appears to diverge from the outer ones, indicating that remodelling has occurred in this location and it is tempting to speculate that the entrance may have originally been here.

The enclosure is evidently a long-standing landscape feature and was maintained and remodelled over a significant period of time. It was cut on the west side by G005, which indicates that it was no longer in use at the time that G005 was constructed.

Table 2: Summary of features contributing to G015

SG	Shape	Width	Depth	Section	\	Position
1126	V	1.25	0.63	3.02		
1128		1.8	0.2	3.02	recut	
1130		0.95	0.63	3.02		
1224	U	0.5	0.5	3.06	terminal	
1226		0.6	0.62	3.06		middle
1228	U	0.8	0.3	3.08		
1230		1.1	0.45	3.08		
1284		0.75	0.3	17.01		
1286		1.1	0.5	17.01	cut on both sides by 1288 and other	middle
1290		0.4	0.23	17.01	cut by 1288 and cuts 1371	middle
1292		0.65	0.25	17.01	terminal	outer
1294		1	0.4	17.01		
1366				17.01	part of 1284	
1371				17.01	step in the side of 1292	
1390					partial linear seen in section	
1394					not fully excavated	
1652	V	1.2	0.75	32.01	machine excavated	inner
1667		0.8	0.35	32.01	machine excavated	middle
1669		1	0.55	32.01	machine excavated	
1162		1.1	0.5	3.02		



Figure 18: Section through G015, on the south side of the enclosure

### **G039: Partial ring gully in enclosure G015**

Curvilinear Gully SG1723 (1722);

SG1723 (1722) was a curvilinear gully with an irregular base suggesting deeper, circular sections perhaps indicating posts cut at *c.* 1m intervals along its length. It was 0.25m wide and varied in depth between 0.06m and 0.32m. It had a mid-grey brown silty-clay fill. The feature was located close to the south-western edge of the enclosure ditch. However since the enclosure has been remodelled, it is either likely to be associated with the phase when the ditch was at a greater distance from the ring gully or to pre-date the enclosure altogether.

### *North-east side of site*

### **G010: Flattened circular enclosure, associated with G0031 (Figure 13)**

Ditch SG1506, SG1455, SG1274,

Directly north of G015, there was a slightly flattened circular enclosure with an east-facing entrance. The northern part of the curve of the enclosure was visible, resulting in a rounded terminal at the north-east end of the arc. The feature measured *c.* 18-22m across and the distance between the ditch terminals was 19.5m. It was therefore almost entirely open on the east side. The feature became obscured on the south-west, where it was truncated by early Roman enclosure G005. Similarly, it was not possible to trace it running through the multiple ditches of G015; however a ditch terminal, similar in size and profile, emerging from the east side of this enclosure (SG1455) is confidently believed to belong to G010. It appeared to be truncated by G015, indicating that it pre-dated at least some of G0015's recuts.

The northern ditch terminal SG1506 (1505) was 0.79m wide and 0.34m deep and was steep-sided with a concave base. The single fill consisted of mid grey brown silty-clay with pottery and bone fragments.

The southern terminal SG1455 (1454) was 0.73m wide and 0.28m deep with a dark brownish grey silty-clay fill containing both pottery and bone.

A section excavated through the length of the feature SG1274 (fill 1273), measured 0.74m by 0.35m deep and had sloping sides and a concave base. It truncated a shallow pit, SG1271, but had no other direct relationships.

**G031: Inner ditch towards the north of the site, associated with G010 (Figure 13)**

Ring Ditch 1316, Curvilinear Gully 1321, Ditch 1744

Within G010 and echoing its curve, was a second ditch feature, G031, which had a sub-circular plan with terminals on the north-east and south-east sides. Internally, the feature measures *c.* 1.1m north to south and 9.40m east to west, enclosing an area of 88 square metres. There was a distance of 9.30m between the terminals. It is therefore effectively open on the eastern side, again echoing the enclosure G010, which encircles it. A number of cuts and recuts were noted, but the core of this feature appears to be a steep sided ditch with a narrow but flat base. This profile was evident with SG1673, SG1362, SG1300 and SG1205. In two sections, the deeper ditch truncated a more shallow one; in the southern terminal it was not clear, while in the fourth section there was no shallow ditch present. The deep ditch was the inner feature in each case except for the section on the southern side where it was on the outside edge (SG1671). From this it might be assumed that the deeper ditch was a continuous feature excavated as one event (and possibly backfilled as one event also). However, the shallow ditch does not seem to be continuous and disappears entirely on the north-west side of the feature. In addition, the enclosure cuts several other shallow features. The feature was truncated by SG1469 (G041).

The southern terminal was composed of two parallel features. SG1249 (1248), the outer ditch, was disturbed by a medieval furrow however, it appeared to be a minimum of 0.60m wide and was 0.25m deep. The fill consisted of mid-dark greyish brown silty-clay with small pebbles and rare charcoal and, notably, contained Skeleton 1. During excavation, it appeared that SG1249 was part of a ditch, however it was not visible in the same form further west and therefore it may actually be a shallow feature at the ditch terminal. SG1362 (1361) was the terminal of a ditch running parallel to SG1249; unfortunately the relationship between the two was uncertain. The single fill consisted of dark grey brown silty-clay with charcoal and rare cobbles. The two features were quite different in form; SG1249 was shallow and broad, while SG1362 was narrower and deeper at 0.85m wide and 0.65m deep, with steep sides and a flat base. A furrow obscured the terminal of ditch 1249. The ditch ran parallel with ditch SG1362 and while there was clearly a relationship between the two features it was not evident in section which ditch was the latest.

***SG1249 Skeleton 1***

Articulated human remains were recovered from the top of the terminal of enclosure ditch SG1249, within (1248). The individual was articulated but the burial had been truncated by ploughing in the medieval period, which had severed and disturbed the leg and foot bones (Figure 19; Figure 20). The attitude of the body was prone, the head appeared slightly raised, the arms were flexed with the left hand extended under the pelvis and the right hand extended beneath the chest. The ribcage was collapsed and the right leg was flexed. The right leg was severed through the proximal part of the tibia and, of the left leg, only the head of the femur was present, still in the correct anatomical position within the skeleton. The skull was

fragmented, probably through plough disturbance due to the shallow depth of the burial and the fact that the head was in a slightly raised position.



Figure 19: Skeleton 1, looking north



Figure 20: Skeleton 1, looking west

#### *Further ditch sections*

A section excavated *c.*6m from the terminal, again showed two parallel ditches SG1671 (inner), which was truncated by SG1673 (outer). SG1671 (1670) was a slightly smaller feature, measuring an estimated 0.60m wide (0.40m still extant) and 0.30m deep, with steep sides and a rounded base. The fill was mid grey brown silty-clay with stones and flints. SG1673 (fill 1672) measured 0.65m wide by 0.60m deep and had steep sides with a rounded pointed base. It was filled with dark grey brown silty-clay.

A section excavated through the north side of the enclosure revealed a single ditch measuring 1.0m x 0.86m with steeply sloping sides down to a narrow but flattish base, SG1300 (1299).



At the northern terminal, two ditches were noted. The outer ditch SG1207 (1206) measured 0.26m wide by 0.34m deep. It contained only one fill, which consisted of mid brownish grey clayey silt. It was truncated by SG1205 (1203), (1204), which represents a much deeper re-cut. SG1205 was located on the inner side of the enclosure and was similar in profile and depth to SG1300 suggesting that they are the same ditch. It was 1.02m wide and 0.82m deep, with steep sides and a narrow but flat base. The lower and main fill of SG1205 was (1204) which was fairly rich in finds, containing occupational waste including bone, pot and fire cracked pebbles. The upper fill, context 1203, also contained pot, bone, fire-cracked pebbles and charcoal flecks. An interrupted enclosure (G041 and G016) was the main feature on the north-east side of the site.

*Pit SG1260 (fills 1258, 1259)*

A pit was located on the north-west side of ditch SG1300 (G031), between it and ditch SG1274 (G010). It was roughly circular and measured 1.66m x 1.36m and was 0.56m deep. The upper fill (1258) consisted of mid orange brown silty-clay and the lower fill (1259) was mid grey brown silty-clay and contained an articulated dog skull and mandibles, placed on its side near the base of the feature. No other bones were recovered.



Figure 21: Articulated dog skull and mandibles in SG1260

*SG1467 (1466)*

Towards the south of the enclosure there was a circular pit measuring 0.56m in diameter and 0.17m deep. It was notable by its very charcoal rich fill. However, there were no finds and the environmental sample (100%), produced little other than charcoal.

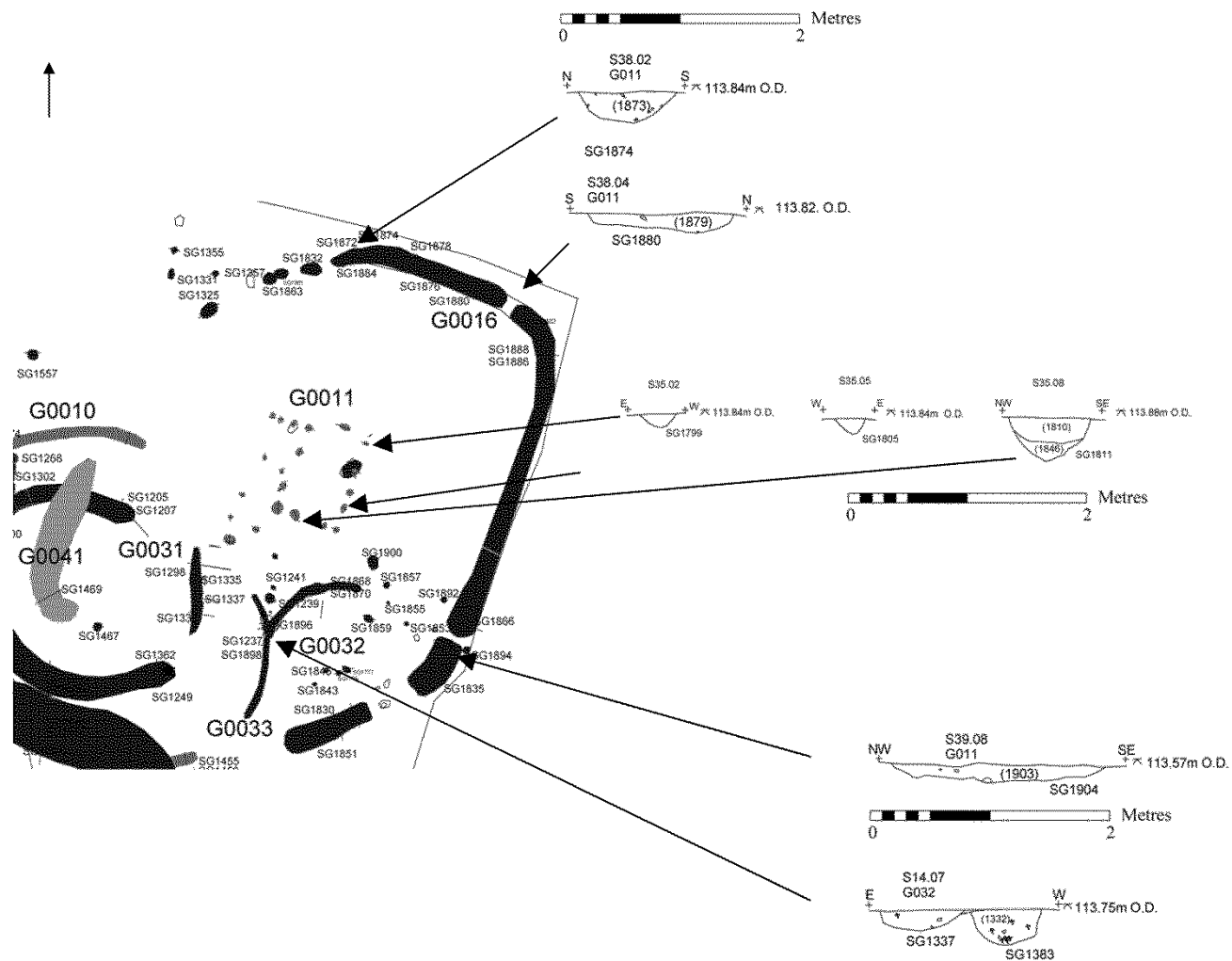


Figure 22: G011 016, 032 and 033. Sections

#### **G040: Gullies associated with G031**

Curvilinear Gully [1298], Gully [1337]

This is an irregular feature composed of two intercutting ditches and gullies, orientated north-south, that have been truncated and obscured by a furrow. The feature was located east of the entrance to G031. Iron Age pottery and bone was recovered from both fills. Their relationship with nearby features is uncertain.

SG1298=1333 (1297), (1332) was a north-south aligned curvilinear cut with concave base, 0.3m deep. The main part of the ditch was 0.6m wide tapering to 0.4m at the terminal at the north end of the feature. SG1298 was truncated by a later feature, SG1337 (fill 1336), which was an irregular gully, ranging in width from 0.20m to 0.65m and in depth from 0.10 to 0.17m.

#### **G016: Shallow sub-rectangular enclosure (North-east corner) (Figure 22)**

Ditch 1851, Curvilinear Gully 1868, Curvilinear Gully 1870, Ditch 1872, Post-hole 1874, Ditch 1876, Post-hole 1878, Ditch 1880, Ditch 1886, Ditch 1888

A shallow, non-continuous, curvilinear feature demarcated an area containing a post-built structure (G011) and was located in the north-east of the excavation. The east and north sides were enclosed but the feature was open on the western side. It measured *c.*31m, from approximately north to south and *c.*16m, north-west to south-east. A series of deeper pits (SG1863, SG1832 and SG1325) were in line with the north end of the feature, appearing as an extension to it. The feature was very shallow, rarely exceeding a depth of 0.10m -0.15m and with an overall width of *c.* 1.30m. Despite this, the feature was showed as an anomaly on the geophysical survey, indicating that the fill was enhanced magnetically.

As shallow as the feature was, it was no less complex than some of the other enclosures on the site generally having more than one recut; most sections showed evidence for two or more linear features, although it was not often possible to establish the relationship between them. The feature was composed of short linear stretches with rounded butt-ends, rather than being continuous. Shallow circular features, possibly representing post-holes, were noted at both the north-western and the south-eastern corners, cut into the base of the feature.

Several pits and post-holes were present at the north-east corner and appeared to align with enclosure G016. The closest was SG1832, a substantial pit with a mid greyish brown sandy-clay upper fill (1831), containing several burnt stones while the lower fill (1833) was slightly more mixed. The pit was oval, with steep vertical sides and an undulating base and measured 1.24m in length by 0.84m wide by 0.50m deep.



Figure 23: Typical section through feature, G016

SG1863 was an oval post-hole, 0.21m deep, with shallow sloping sides and a flat base. The fill (1862) was mid grey brown sandy-clay with pottery and bone.

SG1325 was an oval pit with a fill that contained burnt material, including charcoal, clay and fire-cracked pebbles. It measured 1.3m by 0.8m and was 0.27m deep.

**G041: Shallow ditch, similar to G016 (Figure 22)**

G041 was located west of G016 and contained only one feature, SG1469 (1468). It was *c.* 1.6m side and 0.10m deep and contained a mid-grey brown clayey silt fill. Similarity of profile, fill and its location suggest that it is associated with G016, which was formed of shallow 'ditches' of similar type. If this is the case, then it represents a detached portion on the west side of the enclosure. G041 truncates G031 and was the latest feature in the archaeological sequence in this area.

**G0011: Rectangular post-built structure within shallow enclosure (Figure 22)**

Post-hole [1781] (1780), Post-hole [1783] (1782), Post-hole [1785] (1784); Post-hole [1789], Post-hole [1791], Post-hole [1793], Post-hole [1795], Post-hole [1799], Post-hole [1801], Post-hole [1803], Post-hole [1805], Post-hole [1807], (1809), Post-hole [1811] (1810), (1846), Post-hole [1813], Post-hole [1817], Post-hole [1819], Post-hole [1821], Post-hole [1823], [1825], Post-hole [1827]

A group comprising 22 mostly fairly shallow post-holes were set in the centre of the shallow enclosure, G016. Clear in plan, they formed a basic structure measuring 5.8m (north-south) by 4.3m (east-west). A sub-divided adjoining structure was noted on the west side, adding a further *c.* 2.0m to the building, suggesting an entrance, aligned to the open side of the enclosure. The majority of the post-holes were very shallow but several different profiles were noted. The largest, SG1811, on the southern post line, measured approximately 0.70m in diameter and was 0.38m deep with steep sides and a pointed round base. It contained two fills (1810) and (1846). Several others SG1819; SG1813 and SG1825, were of similar diameter but only *c.* 0.15m deep with flat bases. The most common type were smaller,

shallow but with a rounded base; *c.* 0.25m across and *c.* 0.15m deep; SG1798; SG1801; SG1803; SG1805; SG1809; SG1815 and SG1823. Other examples were very insubstantial at less than 0.10m deep. The position of the deeper post-holes does not seem obviously significant within the context of the building. Overall, it appears that the area must have been very truncated to leave so few traces. A post-hole slightly off the northern wall line, SG1797, contained significant amounts of charcoal, possibly representing hearth material. On the north-east side, post-hole SG1801 cut through an earlier pit, SG1841, oval in shape and measuring 1.25m x 0.95m by 0.30m deep.

The group produced very few finds however pottery recovered dated to the mid-late Iron Age.



Figure 24: Rectangular structure, G011, within enclosure G016, looking west



Figure 25: Rectangular structure, G011, looking west.

### **G032: Ring or curvilinear gully in Area 2 (Figure 22)**

Curvilinear Gully [1868], Curvilinear Gully [1870], [1896]

Two intercutting ring gullies were also located within this area but probably pre-date the enclosure. The first, G032, had an unusually uneven base, suggesting it was either created in a piecemeal fashion or with little care. Several sections were excavated through the feature

including where it intersected with another ring gully (G0033), which truncated it. The following are all parts of the same feature.

SG1868 (1867) was the terminal of the curvilinear gully, 0.25m wide and 0.10m deep. It contained mid greyish brown clayish silt fill. A section through the body of the feature SG1870 (1869) revealed a similar fill but containing more occupational debris including charcoal flecks, mid-late Iron Age pottery and bones. The feature was much more substantial in this section than at its terminal, measuring c0.74m wide and 0.34m in depth.

A further section SG1896 (1895) was excavated at the junction with G033. It was linear with near vertical sides and a rounded base. The drawings suggest that the gully ended in a rounded terminal within this slot.

**G033: Later ring or curvilinear gully in Area 2 (Figure 22)**

Gully 1237, Curvilinear Gully 1898

A second and larger ring gully truncated G032. The gully was 0.28m wide and 0.08m deep terminal of curvilinear gully SG1237 (fill 1236). The fill consisted of friable mid brownish grey sandy silt. A section excavated at the intersection with SG1896 (G0032), showed that it measured c.0.45m wide and 0.14m deep at this point and also indicated that it was the later feature. Pottery dating to the mid-late Iron Age was recovered.

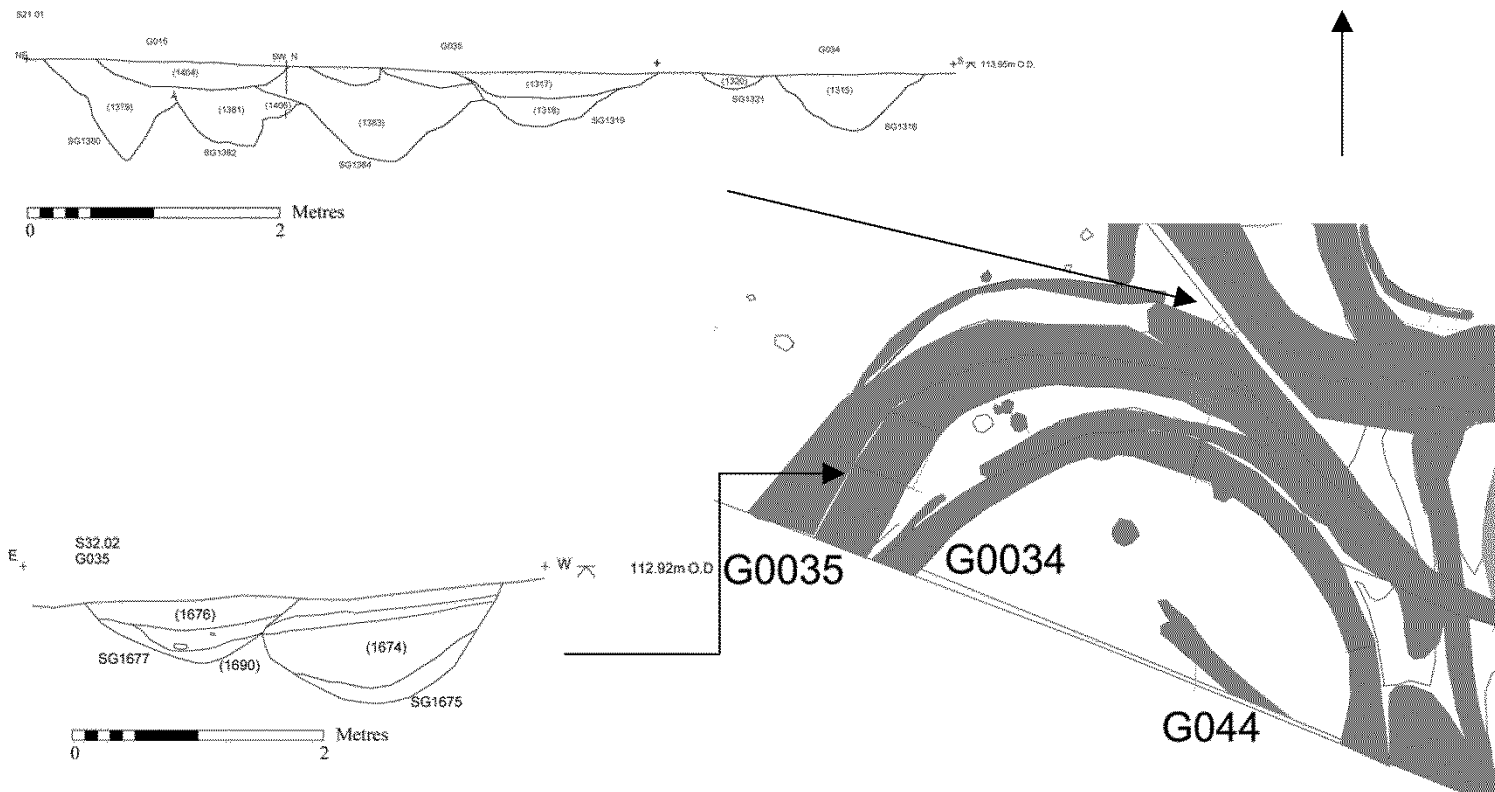


Figure 26: G034 and G035; sections

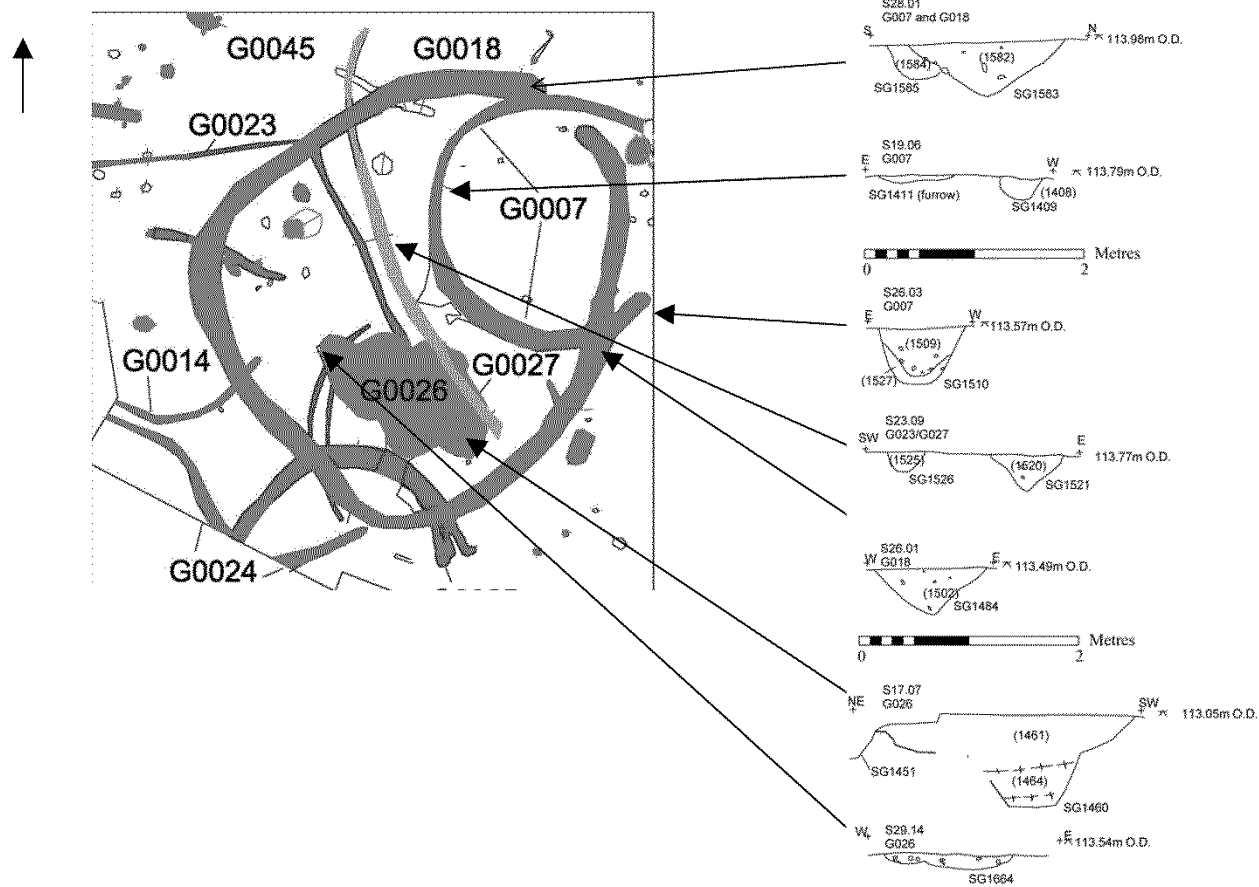


Figure 27: G007, 018, 023, 027, 026; sections



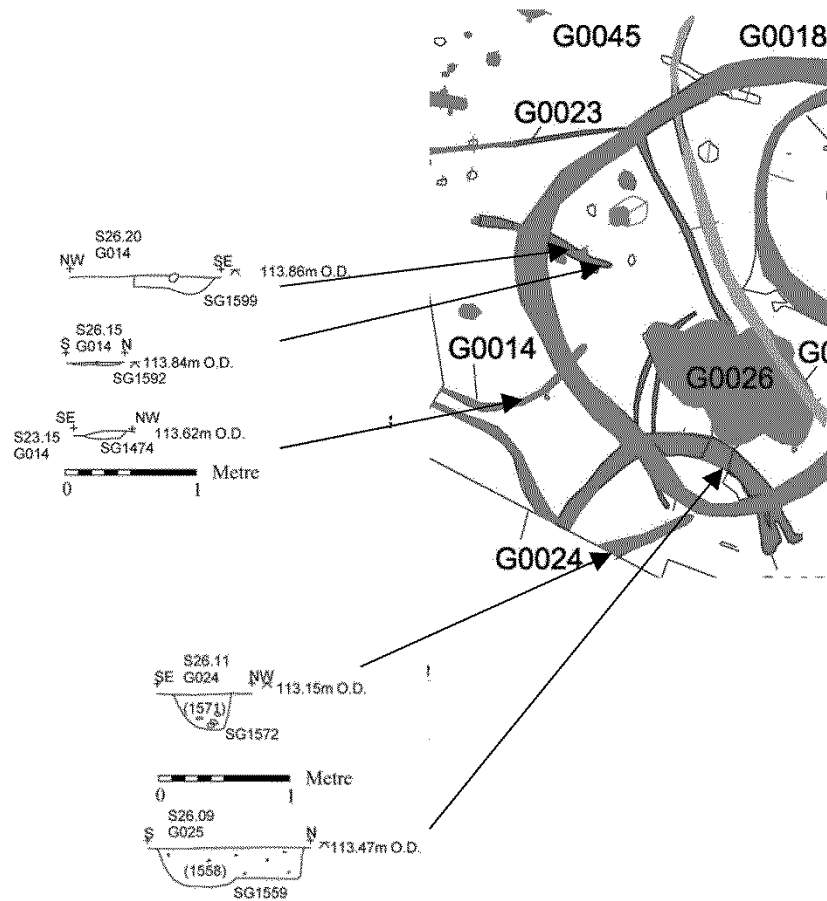


Figure 28: G014, 023, 024 and 025 sections

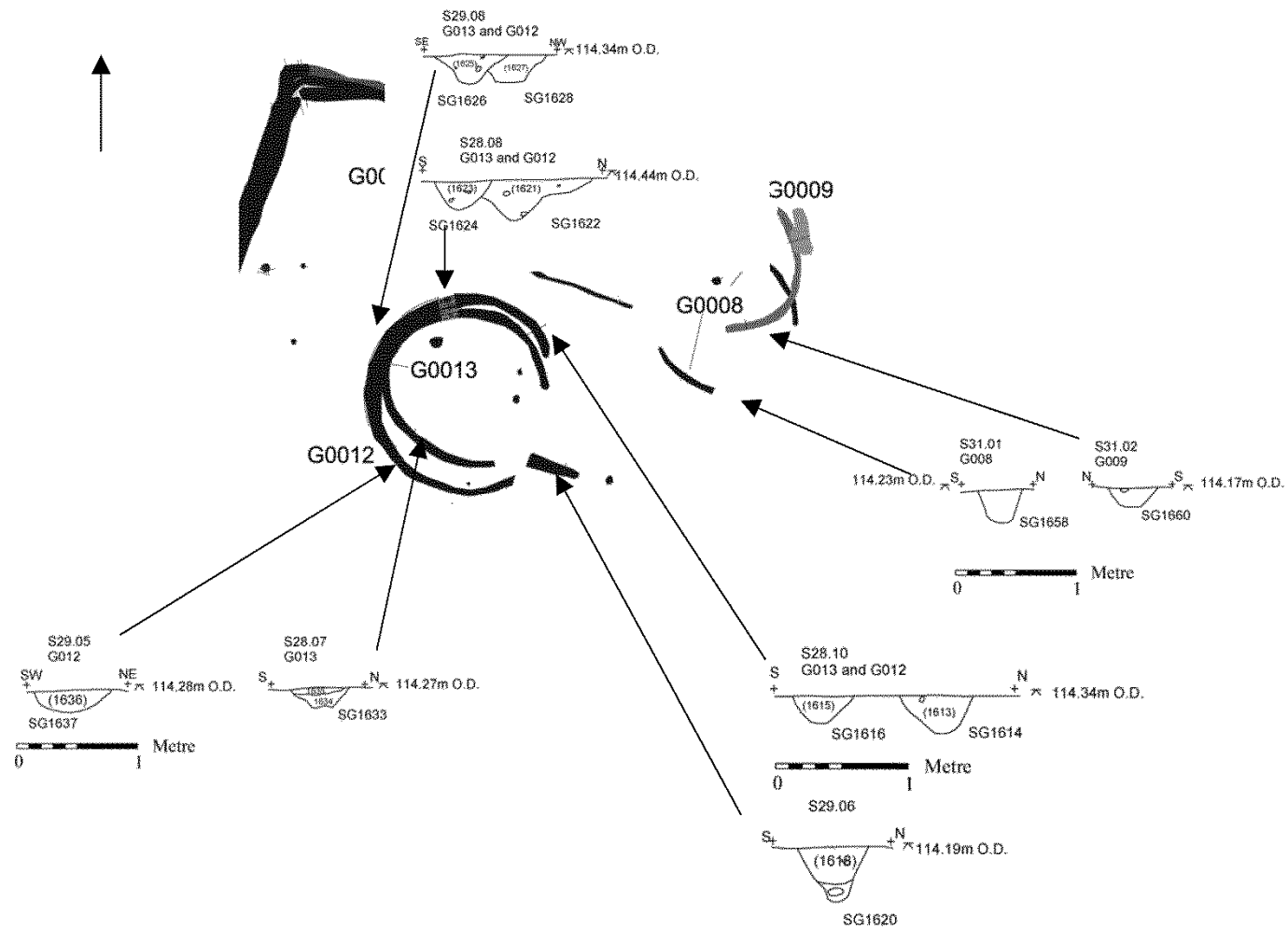


Figure 29: Ring gullies, G008, 009, 012, 013; sections

### ***Central part of site***

The concentration of features increased towards the southern part of the site.

#### **G035: Ring ditches north of G0034 (Figure 26)**

SG1319 (1317), (1318) = SG1677 ((1676), (1690)

SG1384 (1383) = SG1675 (1674)

A complex of inter-cutting ditches was present on the south side of the site. A section excavated through the west end of the ditches enabled a match to be made with the ditches encountered further to the east (G015). In both sections the outer ditch was cut by the inner ditch and therefore it is likely that SG1675 = SG1384 and SG1677 = SG1319. These represent a series of successive ring ditches and boundaries reminiscent of other enclosures on the site.

SG1384 = SG1675 was the substantial ditch outer ditch of the enclosure. It measured c1.70 - 1.80m wide by 0.70 - 0.90m deep and had a single fill consisting of dark grey brown silty-clay with charcoal flecks, pebbles and chalky stones. At the west end a more silty primary deposit was observed at the base of the ditch (0.15m thick). The ditch pre-dated SG1319, located on its south side. Re-deposited natural partly overlay the surface of the ditch, and may have been thrown up during the excavation of SG1319. Pottery recovered from the ditch dated to the mid-late Iron Age.

The later ditch, SG1319 = SG1677, contained two fills; the upper fill (1317) contained Belgic pottery and was 0.25m thick, over the lower fill (1318). The ditch was parallel with ditch SG1316 and gully SG1321 but had no direct relationship. The ditch varied from 1.50m to 1.70m in width wide and was c. 0.45m deep.

SG1708 (1707) was the ditch terminal, which was exposed following ground reduction to try to clarify the features in this area. It could be either the eastern terminal of SG1319 or of SG1384. However, it more closely resembles SG1319, measuring 0.85m wide and 0.34m deep with a rounded base. The single fill consisted of dark brown silty-clay.

#### **G044: features on the southern edge of the site (Figure 26)**

Gully 1385, Ditch 1387

Two adjoining features containing debris associated with occupation were located on the southern edge of the site.

SG1385 (fill 1384) was apparently within ring ditch G034 on the southern edge of site. It was 0.20m wide and 0.08m deep. It had an unclear relationship with SG1387 being more shallow and projecting further but had a similar fill. Gully SG1387 (1386) was only just exposed within the site and continued to the south beyond the excavation limits. It measured approximately 0.73m wide and was 0.30m deep. The fill was mid greyish brown clayey silt and it contained a large proportion of occupational debris such as fire-cracked pebbles, Iron Age pottery and bones. It was not possible to ascertain whether it truncated or was truncated by SG1385.

**G038: Post-holes in entrance to G005 (Figure 35)**

Gully [1471], Post-hole [1481], Pit [1487], Curvilinear Gully [1489], Post-hole [1493], Post-hole [1497], Stakehole [1499], Post-hole [1501], Post-hole [1537], Hearth [1538], Pit [1540], Post-hole [1542]

A slightly disparate group of post-holes, shallow pits and gullies located within and close to the entrance of G005. Many of these do not have any dating evidence; a small number contain Iron Age pottery. Some, for example, SG1487 and SG1489 are truncated by G005. Most do not have a stratigraphic relationship. Most are shallow post-holes, which could suggest earlier activity or a gate or fence to close off the entrance, however they could be associated with earlier occupation activity and their position in the entranceway is coincidental. Two of the features, SG1537 and SG1538 contained burnt material, appearing to be hearth residue.

Gully [1471] and Gully [1489]

These were parallel, set *c.* 3m apart on and northwest to southeast alignment. SG1471 measured 0.30m wide by 0.15m deep, while G1489 was slightly smaller measuring 0.23m wide by 0.05m deep.

SG1537 had the profile of a substantial post-hole (sub-circular 0.4m in diameter and with vertical sides 0.4m deep) but contained a grey ashy and charcoal rich fill (1518) and was capped by red clay, possibly part of a hearth base. The adjacent feature SG1538 was very shallow and lacking definition but contained similar hearth material.

**G007: Ring gully (Figure 27)**

Ring Gully [1409], Ring Ditch [1510], Ring gully [1585], Ring gully [1736]

Ring gully G007 was located on towards the south side of the site and appeared to be continuous. A lack of recuts suggests a single phase of use. It had an internal diameter of 10.30m and a terminal on the east side of the feature; the second terminal was missing, almost certainly truncated by a later enclosure G005. The structure was also truncated on its north side by enclosure G018. There was some variation in width and depth at various parts of the feature

On the west side the gully was 0.36m wide and 0.21m deep with an uneven stony base; SG1409 (1408). On the north side (SG 1585 (1584)), the feature measured *c.* 0.50m and was 0.30m deep with a U-shaped profile. It was cut by ditch SG1583 (G018). The fill consisted of mid brownish grey sandy-clay and contained moderate charcoal and stones and occasional fire-cracked pebbles. On the south side the ring ditch SG1736 (1735) was found it to be 1.0m wide and 0.38m deep. The fill was dark greyish brown silty-clay, containing pottery, flint and bone with most finds were recovered from the top part of the fill.

There were two fills in the eastern terminal, SG1510 (1509)=(1522), (1527). The upper fill (1509)=(1522) was charcoal-rich (Sample no 38). The lower fill (1527) was more clayey and yellow brown in colour, appearing to be natural subsoil washed in from the sides and surface during use. It contained no finds.

**G026: Group of intercutting pits (Figure 27)**

Pit [1401], Pit [1428], Pit [1430], Pit [1460], Pit [1683], Pit [1684], Pit [1685],

An area of intercutting pits was located towards the south end of the site, measuring 8.8m by 4.5m. The line of two ditches SG1526 (G023) and SG1521/SG1451 (G027) ran into group from the north; SG1451 (G027) was found to truncate the pit group and emerged from the south side. Slots excavated through the pits failed to clearly establish the number and full sequence of features. The ground level was later reduced by machine in an effort to clarify the plan but this simply served to confirm the complexity and intercutting nature of the features.

Two of the earlier pits, located towards the north side of the mass were SG1428 (1427) and SG1430 (1429). SG1428 was partially excavated feature with mid grey brown silty-clay fill with charcoal and pebbles. A corner of SG1430 (1429), was seen in a slot and was a minimum of 0.60m in diameter and 0.45m deep. The fill consisted of mid brown silty-clay with occasional; charcoal flecks. Neither pit had any finds but both were truncated by SG1401. SG1401=1424 (1402), (1403)=(1423) was 1.5m wide and 0.70m deep. It had two fills, both dark grey brown silty-clay with charcoal and pebbles, although the lower fill was also mixed with natural subsoil. Pottery dated the pit to the mid-late Iron Age. SG1460 (fills 1461, 1464 1465) was located at the southwest side of the mass and contained three fills. The upper fill 1461 was dark grey brown clayey silt with pebbles Fill 1464 consisted of mid brown sandy silty-clay and had a higher proportion of natural subsoil mixed in, while 1465 was the primary fill of the feature and consisted largely of re-deposited natural subsoil. The cut 1460 was 2.30m wide and 0.80m deep. It had steep sides and a flat base, although the bottom of the feature was below the water table. The feature was truncated by ditch SG1451 (G027) (Figure 30).

The following features were recorded following the reduction of ground level and were located within the central area of the pit group. They were not easily reconciled with the features recorded above and time constraints unfortunately prevented detailed excavation.

SG1683 (fill 1678) was partially excavated and sampled. The fill consisted of dark greyish brown clayey silt with occasional stones and charcoal flecks becoming lighter towards the base of the cut. The pit was broadly circular measuring 1.40m x 1.30m, however it was not bottomed. SG1685 (fill 1682) measured c1.0m x 0.80m and only cursory excavation was carried out for finds retrieval. SG1684 (fill 1679) measured 1.0m x 0.90m. The fill consisted of mid yellowish brown clayish silt from which mid-late Iron Age pottery was recovered.



Figure 30: Ditch SG1451 (G027) cutting through pit SG1460 (G026)

**G027: Curvilinear ditch (Figure 27)**

Gully 1451, Ditch 1521, Gully 1747

A curvilinear boundary was recorded running on a north-west- south-east alignment with a terminal at the northern end. Unfortunately, none was seen on the south, where the feature was obscured by a furrow. No corresponding features were identified. Three sections were excavated through the feature, which had a clear V-shaped cut and contained a single fill, consisting of mid brown silty-clay with frequent charcoal flecks and burnt stones. At the southern end, SG1451 (fill 1450), the feature was 0.75m wide by 0.40m deep and truncated pit SG1460. A section excavated mid-way through the feature, SG1521 (fill 1520), was very similar. The gully was traced to its northern terminal SG1747 (fill 1748) where it appeared quite truncated, measuring 0.40m wide and being 0.17m deep, with a slightly more rounded profile. The feature was cut by both SG1553 (G018) and SG1689. It may be associated with ring gully G006.

**G023: Shallow sub-square gully in Area 3 (associated with G024 and G014) (Figure 27)**

Gully [1526], Curvilinear Gully [2020]

G023 was a narrow sub-square gully with moderately sloping sides with a pointy base. It was a shallow and faint feature on its western side, surviving better on the east. It presumably demarcates an area of occupation and may have a link with ring gully G014, which appears to be positioned within it. It was sub-square in shape with arms running on a northeast-southwest (SG2020) and a northwest-southeast orientation. It was truncated twice at its

western end by early Roman ditch G022 and also by G018. The feature runs into but does not emerge south-west of an area of intercutting pits (G026).

SG2020=2072 (2019)=(2071) was very shallow on its western arm (W:0.20m; D:0.03m) but survived at a greater depth in Area 1, where it was 0.30m wide and 0.10m deep. The fill consisted of dark brownish grey, silty-clay with occasional charcoal flecks and burnt stone. SG1526 (1525) comprised the eastern part of the feature, running at right angles to SG2020. It was truncated by G018. It was 0.34m wide and 0.17m deep and contained mid greyish brown clayish silt with burnt pebbles/cobbles and charcoal flecks. It was spot-dated to the mid-late Iron Age.

#### **G024: Curvilinear gully on the S edge of site (associated with G023 and G014)**

(Figure 28)

Curvilinear Gully [1572], Curvilinear Gully [1610]

G024 comprises two sections of a curvilinear gully, which may belong to the same feature and may also be associated with G023 and G014. There is little that can be said about this gully since the feature is only partially exposed and there was no clear relationship with any other features. However, its size and depth was variable. The fill consisted of dark orangish brown silty-clay.

The eastern terminal (SG1572 (1571) of the northeast-southwest aligned linear gully had steeply sloping sides and a flattish base. It measured 0.47m wide and was 0.26m deep. (Sample number 44). Two sections were excavated through the feature on either side of a furrow, SG1610 (1609) and (1640). The first was through the body of the feature and was 0.60m wide and 0.34m deep with steeply sloping sides and a rounded point base. A section excavated west of the furrow (1640) terminated in a shallow butt end (W:0.22m and D:0.05m).

#### **G014: Shallow ring gully, cut by G018 (associated with G023 and G024)**

Ring Gully [1574], Gully [1592]

A very shallow ring gully was encountered in two places on the south of the site and appeared spatially related to SG023. Both a northern and a southern section were identified but the western side was missing. It had an estimated internal diameter of 8.3m and an east-facing entrance. There was a distance of 3.7m between the terminals. The group was truncated by the ditch enclosure, G018 (SG1590/1484). SG1592 (1591) was the base of the northern terminal, which was 0.35m wide but extremely truncated; only 0.01m remained. In plan, the terminal appeared to flare outwards slightly to the north.

SG1574 was the southern gully section and was truncated both by G018 and a furrow. The fill of the southern terminal (1575) consisted of dark orange brown silty-clay with pebbles and charcoal. The feature was 0.53m wide and 0.07m deep but narrower at a second section (1573); 0.36m wide and 0.03m deep.

#### **SG1589 (hearth) (Figure 31)**

(1593) (1594)

A deposit of cobbles formed a flat base, with a burnt clay layer below. The burnt clay forms a spread of up to 2m but the surviving stones occupied a smaller area of c. 0.58 x 0.45m. The

feature was spot-dated to the mid-late Iron Age. It has no clear association with any other feature so it is not certain to which structure it belongs. However, its location 3m north of the entrance to roundhouse G014 and 1m from its presumed enclosure G023, may group it with these features.



Figure 31: Hearth (SG1589) (1593)

**G025: Partial ring ditch on S edge of site, S of G018 (Figure 28)**  
Gully SG1559

SG1559 (1558)=(1570) was a partial ring ditch was seen on the southern periphery of the site. It was truncated by G018. The general shape of the feature has been estimated from what remained. If it was broadly circular, then it would have an estimated minimum diameter of 9.1m. SG1559 (1558)=(1570) contained mid brown silty-clay with contained pottery and bone. The cut was curvilinear with near vertical sides and a flat base, measuring 1.10m wide by 0.25m deep. Although the middle section of the ditch was recorded as a single feature, it is possible that it was two intercutting gullies, the inner one slightly deeper and narrower than the other, (although excavated over a natural fissure, which complicates the situation). The eastern side of the feature was in an area which appeared to be disturbed by burrowing, however two parallel terminals were noted, which indicating an entrance on this side. G025 was also truncated by a pit (SG1587), which was excavated at the junction with G018. Its location suggests that it is unlikely to have been in existence at the same time as G024, but it is unclear which feature was earliest.

**G018: Pennanular enclosure (Figure 27)**  
Curvilinear Gully SG1484, Ditch SG1583

The latest major feature in this complex area was G018, which truncated G007, G027, G023, G014 and G025. This was a ditch with a V-shaped profile (located south-west of G005), forming a sub-oval enclosure, with an entrance on the northeast side. The south-west side was



fairly square, narrowing towards the entrance. It measured 19m from north-east to south-west and 17m from north-west to south-east. The entrance was estimated at *c.* 2.2m wide, although unfortunately the south-eastern terminal had been lost beneath a furrow. Three sections were excavated through the feature. The size of the gully varied from 1.0-1.4m wide and 0.40-0.47m deep. Although smaller and with a different backfill date, the feature resembles G005 in plan and the entrances of the two features are complimentary to each other. The fill consisted of dark greyish brown silty-clay, with pebbles, charcoal and chalky stone fragments.

#### Ditch SG1583 (Figure 32)

This V-shaped ditch was *c.* 1.0m wide and 0.48m deep and truncated gully SG1585 (G007). It was itself truncated by SG1689.

Two large post-holes or pits, SG1529 and SG1587 were cut through the fill of the ditch on the eastern side. SG1529 (1528) was 0.65m in diameter and 0.29m deep and SG1587 was oval (0.17 x 0.29m) and 0.27m deep. These post-date G018 but still contained mid-late Iron Age pottery.



Figure 32: Section through terminal of SG1583 (G018) and SG1585 (G007), which it truncates

To the north of this complex of features, a series of ring gullies were observed. It is evident that they occupied the area successively.

#### **G008: Ring gully (Figure 29)**

Ring Gully SG1453, Ring Gully SG1504, Ring Gully SG1658

G008 comprises two gullies at the north end of the site, together forming the remains of a circular eavesdrop gully. The feature had an internal diameter of 8.30m. SG1453 and SG1504 are on the north side while SG1658 is on the south side. The gully was very shallow, suggesting that it is highly truncated. The fill consisted of light grey brown silty-clay with small pebbles. The ring gully was truncated by a second ring gully, G009, as well as by furrows. There was no dating evidence.

Three slots were excavated through the northern section of gully, which was 0.30m wide and had a variable depth of between 0.05m and 0.13m: SG1453=1463, (1452)=(1462), SG1504 (terminal). SG1658 was the southern section of gully and was less truncated having a width of 0.38m and greater depth (0.28m), despite being very faint on the surface. The fill contained a moderate amount of charcoal and burnt sandstone fragments were noted near the surface.

**G009: Ring gully (Figure 29)**

Ring Gully SG1441 (1440), Ring gully SG1660 (1659)

G009 was composed of a single feature; a stretch of curvilinear gully, with sloping sides and flat base, on a north-east to south-west alignment, representing part of a round house gully, with a terminal indicating an entrance on the south side. The feature post-dates G008 (Ring gully) but is earlier than a pit, SG1439, which truncates it on the east side. Two sections were excavated through the gully. The first was through the southern terminal (SG1660), which ended beneath a furrow. The feature measured 0.40m wide and was 0.18m deep at this point. The fill consisted of mid greyish brown silty-clay with moderate charcoal flecks and occasional burnt sandstone fragments. Pottery of mid-late Iron Age date was recovered and the feature was sampled (Sample No 60). The second section was excavated at the intersection between the gully and the pit, SG1439. The gully was c. 0.40m wide and 0.20m deep, although truncated by the pit on the northeast side. A possible terminal was observed here but it was unclear and the gully did continue south, so it was not wide enough to be an entrance.

**Pit SG1439 (fill 1438)**

The latest feature in this sequence was pit SG1439, which truncated G009. The feature was a slightly irregular oval in plan, measured 2.90m x 1.05m and was 0.30m deep.

**Curvilinear gully SG1732 = 1734 (1731)=(1733)**

SG1732 was located north of roundhouse groups G012 and G013 and west of G008 and G009, measuring 0.23m wide by 0.16m deep. This curvilinear gully had a shallow sloping rounded base and was on an east-west orientation, curving upwards towards the north at its western end. The fill consisted of mid/dark grey brown silty-clay with crushed sandstone fragments but there were no finds.

**G021 Sub-square enclosure (see also Late 1st century)**

Two overlapping ring gullies were positioned centrally within a square enclosure G021. Spatially, these certainly appear to be related, however in terms of dating there is a conflict with the square enclosure. G021 clearly remained in use into the first century AD and therefore is discussed more fully below.

**G012: Outer ring gully in rectangular enclosure (Figure 29)**

Gully SG1614, Ring Gully SG1632,

The outer ring gully G012 was positioned within the centre of a square enclosure G021. The internal diameter was 11.25m and the feature appeared to be continuous except where it intersected with the inner ring gully. Although a possible terminal was seen within one of the slots, the ring gully had no conclusive butt end, as the eastern side, where they would be expected, was truncated by a furrow. The feature only has a direct relationship with G013, the inner ring gully, which appears to truncate G012. The outer gully is generally wider than the

inner one; ranging between 0.50m and 0.90m at its widest point on the northwest side, and 0.13-0.32m deep.

SG1614 (1622)=(1628), (1613)=(1621)=(1627), (1617). These contexts make up the ring gully on the northern part of the feature. The fill consisted of dark greyish brown silty-clay, with occasional charcoal flecks and moderate stones. Pottery from the feature provided a mid-late Iron Age date.

The contexts recorded on the south side of the feature are grouped under SG1632, (1631) (1636, cut 1637). These are almost certainly the equivalent of the contexts on the northern side but could not be directly traced through the feature.



Figure 33: Section through north side of ring gullies G013 (left) and G012 (right)

**G013: Inner ring gully in rectangular enclosure (Figure 29)**

Ring Gully SG1616, Gully SG1620, Ring Gully SG1633

The inner ring gully intersected with the outer gully on the west side although it was not quite clear where the feature was truncated and partially obscured by a furrow. The internal diameter of the feature was 8.3m. Where it was possible to tell, it appeared to be later than the outer ring gully. In general it was narrower than the outer gully, reaching a maximum width of 0.60m towards the west side; at all other excavated slots it was between 0.40 and 0.45m in width. The feature was generally more shallow on the southern side, (maximum 0.15m as opposed to maximum 0.26m on the northern side. The entrance is on the east side, although only one terminal was visible. The feature has a relationship with SG1620, a short gully or beam slot. However, the point at which the features intersect is obscured by a furrow, so it is not possible to be certain about the precise nature of this relationship. As with G012 the pottery dates to the mid-late Iron Age.

SG1616 (1626), (1651)=(1625). The fill of the terminal (1651) was dark brownish grey silty-clay with frequent charcoal flecks; the base was packed with large cobbles, flat chunks of limestone, fire-cracked pebbles and a few fragments of pottery. The feature was 0.36m wide and 0.18m deep at this point. It had sloping sides and a rounded point at the base.

SG1633 (1630), (1632)=(1633). Probably the same as SG1616 but the two groups are interrupted by a furrow so it's impossible to be 100% sure.

**Possible entranceway feature SG1620 (1618), (1619) (Figure 29)**

This north-east to south-west aligned feature was located close to the entrance on the east side of the roundhouse. This deep gully was truncated by a furrow to the west, obscuring much of the feature, which is likely to have ranged between 2m and 4m long.

The gully measured 0.50m wide at the surface and was 0.40m deep in total. The upper fill 1618 was rich and organic in appearance, with frequent charcoal and contained pottery and bone, appearing to represent a deliberate backfill of occupational debris. The lower fill 1619 was 0.12m thick, within a tapered base (0.20m wide) and consisted of mixed grey and orange sandy-clay with occasional pebbles and charcoal flecks. It is likely to represent primary silting and erosion from the sides of the feature.

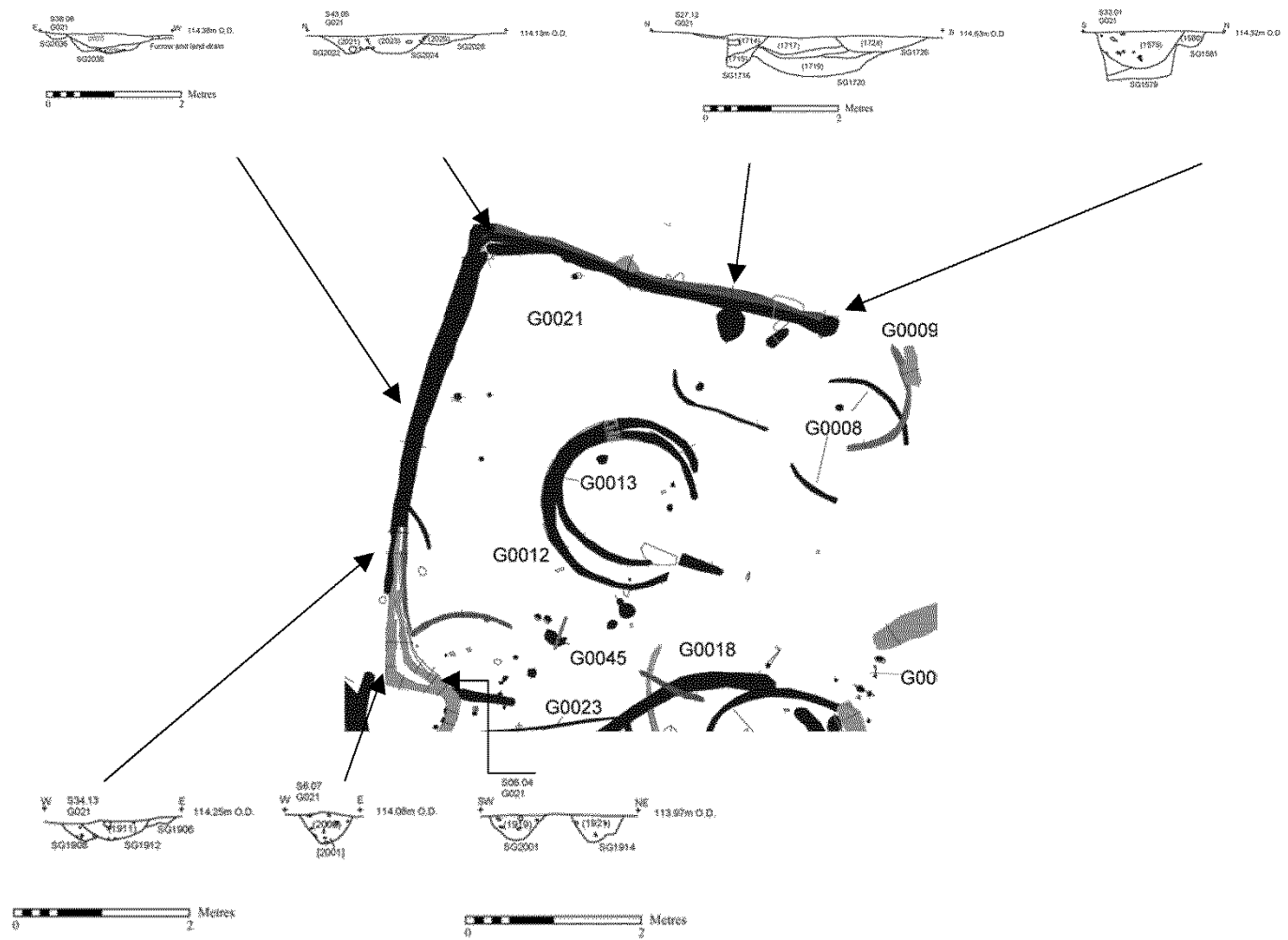


Figure 34: G021 sections

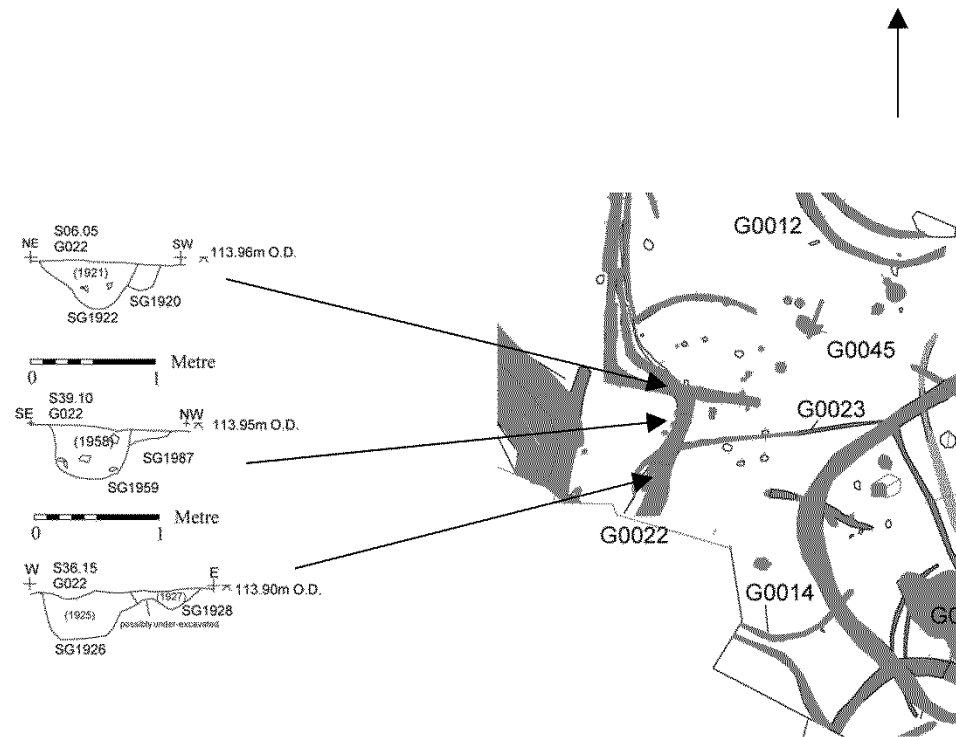


Figure 35:G022 sections

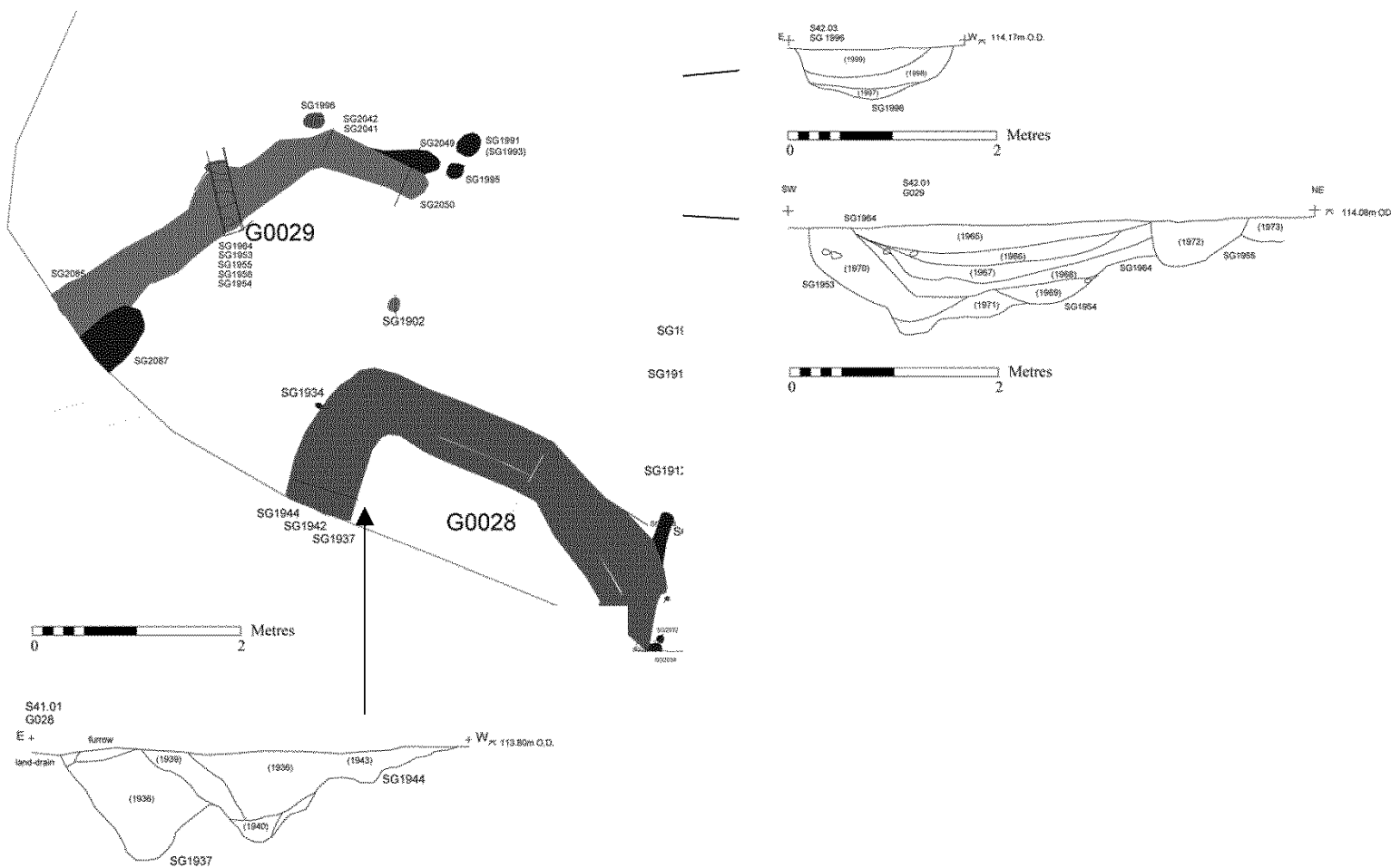


Figure 36: G028 and G029





### *Western part of the site*

#### **G029: Large crooked boundary on west of site (Figure 36)**

SG1964 (1965) (upper fill), (1966), (1967) and (1968) (lowest fill)

SG1953 (1970 (upper) and 1971 (lower)

SG1955 (1972)

SG1954 (1969)

At the western end of the site, a series of parallel, intercutting ditches formed a north-east to south-west aligned linear boundary, turning towards the south-west at the northern end. There were two terminals on diverse angles, showing that the feature was remodelled to create a more acute angle. Little pottery was recovered and the stratigraphic relationships were not always clear. The boundary varied between 2m and 3m in width, up to 1.2m in depth and the exposed part was nearly 20m long. At the south end of the feature, close to the baulk, an adjoining feature was located (SG2087) but not excavated. This appeared to be a large ditch terminal, or possibly a pit, which continued beyond the edge of excavation to the south and serves to confirm the multiphase nature of the boundary. Three slots were excavated through the feature, one through the centre (Figure 38), a second close to the corner and a third across the terminals.

SG1955 (1972), the latest ditch in the sequence, truncated ditch [1964] and pit [1956] but terminated in the centre of the boundary. SG1964 was the next in sequence, truncating both SG1953 and SG1954. Unlike SG1954, SG1955, and possibly SG1953, it did not terminate within the excavated portion but continued in both directions. Belgic pottery was recovered from the upper fill.

SG1954 (1969) was one of the central ditches, with sloping sides and a roughly flat base. This ditch was earlier than SG1964 but appears to truncate SG1953. SG2042 (2045), (2046), (2047) and (2048) was located to the north and is likely to be the part of the same feature. SG2050 (2051), (2052) and (2053) was a ditch terminal seen at the north end of the boundary, and is possibly the terminal for SG1954. It cut SG2049 and is therefore the later feature in the sequence.

SG1953 was a large ditch on the south-eastern side of the enclosure, which contained two fills and was truncated by both SG1954 and SG1964. Curving ditch SG2041 (2043), (2044) located to the north in section was probably part of the same feature. Similarly SG2049 (2054), (2055), (2056) was probably the terminal of the same ditch, which was cut by SG2050.

Three pits were clustered around the north-east terminal of G029: SG1991, SG1995 and SG1996.

SG1991 (1990) (post-hole 1993, (1992)

This pit was positioned directly north-east of the terminals of ditch group G029. A post-hole SG1993, 0.46m deep, was noted at the base of the south end of the pit, sealed by the fill. The pit was 0.25m deep and had a sub-circular cut 1.44m wide, with sloping sides gently merging with the base. An adjacent pit, SG1995, (1994) measured 1.12m wide by 0.56m deep and was

filled with a mid yellow brown silty-clay. It had an irregular, sub-circular cut with straight sides and slightly wavy base. Unfortunately, neither pit contained dateable finds.

SG1996 (1997), (1998), (1999)

A substantial pit was located immediately north-west of the corner of G029. The pit was oval with stepped sides and a concave base and measured 1.5m x 0.9m. It was 0.47m deep. The feature contained three fills, which were all variations on greyish brown silty-clay. The two lower fills (1997) and (1998) contained pottery dating to the mid-late Iron Age but the uppermost fill (1999) contained mid-1st century AD pottery.



Figure 38: Section through series of ditches of G029

#### **G042: Partial ring gully**

Gully SG1979, Curvilinear Gully SG1985

SG1985 (1984) = [1960] (1957) A small stretch of ring gully was identified on an east-west alignment. It measured 0.33m wide and was 0.12m deep, with a U-shaped profile and was spot-dated to the late 1st-century AD although it also contained Iron Age pottery. It was located in the south-west corner of G021. If the gully was part of a roundhouse it would have an estimated diameter of 13.6m. The position of the feature in relation to enclosure G021 and boundary G022 indicates that it could not have been in existence at the same time and must therefore be earlier. The 1st century pottery sherd is tiny and therefore could be intrusive. A sherd of Iron Age pottery, also recovered, is likely to reflect its true date.

SG1979=1981 (1978)=(1980) represents the western end of the gully, including the terminal. It was very shallow and measured c. 0.12m wide and a maximum of 0.08m deep. No finds were recovered.

To the north of SG1985, there was a second probable remnant of roundhouse gully SG1962 (-1961), which was also truncated by the western arm of G021. Only a very shallow curvilinear cut survived, measuring 3.4m x 0.24m wide and was 0.09m deep, with a concave base. There were no finds.

#### **G045: Discrete features on the south side of enclosure G021**

Pit SG1662, Gully SG1687, Post-hole SG1692, Post-hole SG1694, Pit SG1696

The following features may be associated with the partial ring gully G042. The features include two adjacent post-holes SG1694 (fill 1693) and (SG1692 (1691).

SG1687 (1686) was a short gully or possibly beam slot measuring 0.76 x 0.21 x 0.10m and had a linear cut with sloping sides and flat base. Despite its shallow depth, the fill was distinct consisting of dark grey brown clay with charcoal flecks and pebbles from which Iron Age pottery was recovered. It truncated shallow pit SG1681.

SG1696 (1695) was located within the sub-square enclosure G021, about a metre from the southern side of roundhouse G012 and may therefore be associated. It had a sub-circular cut with sloping sides and a flat base and truncated an extremely shallow spread/post-hole [1698]. It measured 1.12m in diameter but was only 0.12m deep.

Oval pit SG1662 (1661) measured 0.70 x 0.36 x 0.18m. It had a charcoal rich fill and contained Iron Age pottery and bone, as well as a good environmental assemblage.

### **Hearth SG2017 (2016) and (2017)**

A circular cut containing large and medium sized heat-cracked sandstone fragments, laid on a level but in an irregular pattern. They appeared to be set directly within a shallow cut into the natural clay and there were no obvious deposits beneath. There is no clear significance to the location, which is adjacent (1.25m away) to the centre of the western arm of G021 (square enclosure), on the interior of the enclosure. There were no finds.

### **Ungrouped pits and gullies**

#### **Elongated pits**

There were several elongated oval pits across the site, which were not always associated with other features. As a rule these were steep sided but shallow.

#### **SG1378 pit (1377)**

A pit on the southern side of the interior of G015 was oval in shape, measuring 1.04 x 0.62m x 0.32m deep and had steep sides and a flat base. The pottery provided a Belgic spot-date.

#### **SG1746 (1745)**

Short linear pit was located on the southeast side of G018. The pit was approximately 10m x 0.45m x 0.23m and on a north-south orientation with a V profiled cut. The fill consisted of dark brown silty-clay with occasional charcoal flecks.

#### **SG1491 (1490)**

Shallow oval feature on the northwest side of enclosure G021, which was partially excavated on its southern side during the evaluation (Trench 5: [22] - recorded as a gully). The remainder of the feature was excavated during this phase of work. It was oval with a slightly irregular flat base and had the following dimensions: 1.50m x 0.65m x 0.20m. The fill consisted of mid dark grey brown silty-clay. Two miniature vessels, known as thumb pots, were recovered during the evaluation (see discussion); however no finds were recovered during the excavation.

A slightly irregular pit **SG1364** measured 2.40m by 0.68m x 0.19m was located within the area enclosed by G005. The fill (1363) was mid-greyish brown sandy-clay with charcoal and cobbles.

Pit SG1552 (1551) was located adjacent to the southwest side (exterior) of the ditch for enclosure G018. The pit was 1.7m long, 0.87m wide and 0.22m deep. Only the base was remaining but it contained burnt stones and slag.

## **Gullies**

### **SG1200 (1199)**

Fragment of ring gully, possibly part of a roundhouse south of the site. It was truncated by G019.

### **SG1323 (1322)**

Gully inside ring SG1280 and possibly cut by SG1254. It was 0.51m wide and 0.11m deep and contained yellowish brown sandy-clay with pebbles. Possibly associated with G006.

### **SG1443=1445 (1442)=(1444),**

Linear gully on a north-west to south-east alignment it is tapering towards the terminal at the north-west. It was 0.44m wide and 0.16m deep and Belgic pottery was recovered from the fill. Although it was shallow the profile was a rounded V-shape. This may be associated with G0019, which also contained Belgic pottery.

### **SG1524 (fill 1523)**

Short length of gully recorded at the north end of the site, with a concave base on an east-west alignment. It was 0.27m wide and 0.06m deep. The fill was a mid grey brown clayey silt and there were no finds.

### **SG1548 (fill 1547)**

A further feature was seen next to SG1546 and SG1544 but it is uncertain whether it belongs to the enclosure (G020), since the feature was only seen here. It was linear with a rounded terminal and was extremely shallow and truncated. There were no finds.

### **SG1646 (1645)**

Gully seen emerging from the north side of ditch enclosure G015. Its relationship with the enclosure was unrecorded and only a short stretch (c. 1.5m) was visible. It was 0.15m deep and c. 0.45m wide. The fill was dark greyish brown clayey silt with charcoal and stones from which Iron Age pottery, bone and flint was recovered.

### **G046 Partial ring gully**

A partial ring gully was observed south-west of G026. This consisted of two very narrow concentric gullies on the west side, 0.8m apart, and a very short stretch on the opposite side of the structure, possibly a terminal, projecting from the ditch of G018, which truncated it. This feature was unexcavated but also appeared to be truncated by the pit group G026. A projected diameter of 11.5m is suggested, based on the curve of the gully and the two opposing sides. Two post-holes on the south-east side of the projected structure may also belong with this group; SG1514 and SG1516.

## **6.5 Phase 5: Belgic (c. AD20-60)**

A small number of features contained Belgic-type pottery. However these were spread across the site, rather than clustered in one location. Essentially, this phase represents the very end

of the Iron Age and it is therefore unsurprising that these features are associated with other features of mid-late Iron Age date. They do not indicate a significant change in form or function for the site but merely suggest its continuation in this period.

Post-hole SG1102 (G036) had a dark charcoal-rich, sandy-clay fill with fire-cracked pebbles. It had a diameter of 0.57m and was 0.40m deep; with almost vertical sides and a flat base.

SG1107 (1106) was part of a complex of gullies (G003), which predominantly dated to the mid-late Iron Age. It contained a sherd of Belgic pottery suggesting continuation into this period.

Ditch SG1319 (1317), (1318) = SG1677 (1676), (1690) contained two fills; the upper fill (1317) contained Belgic pottery and was 0.25m thick, over the lower fill (1318). The ditch truncates adjacent ditch, SG1384. It was parallel with ditch SG1316 and gully SG1321. In the centre the ditch measured 1.5m wide and 0.43m deep; but was 1.65m wide and 0.45m deep on the west side of the site (SG1677).

SG1435 (1433), (1434) was a sub-circular post-hole located within enclosures G019 and G020 but with no direct relationship to either. It measured 0.65m in diameter and was 0.37m deep and contained two fills; Belgic type pottery was recovered from the upper fill.

## ***6.6 Phase 6: Mid- First Century AD***

Activity declined on the site in the middle first century AD. However, the following features were dated to this period, showing that settlement activity continued but was less intense.

### **SG1996 (1997), (1998) and (1999) (Figure 36)**

A substantial pit was located immediately north-west of the corner of ditch group G029. The pit was oval with stepped sides and a concave base and measured 1.5m x 0.9m. It was 0.47m deep. The feature contained three fills, which were all variations on greyish brown silty-clay. The two lower fills (1997 and 1998) contained pottery dating to the mid-late Iron Age but the uppermost fill (1999) contained mid-1st century AD.

### **SG1689 (1688, 1721)**

This gully was cut through the top of the north side of G018 on a north-west to south-east alignment. It measured *c* 4.0m in length and was 0.30-0.40m wide and 0.30m deep. The fills were given different numbers in the two slots that were excavated; both consisted of silty sandy-clay, dark brownish grey in colour with frequent charcoal and fire-cracked pebbles. The fill on the north side of the feature contained lots of pottery from close to the intersection with ditch SG1583, to which an AD mid-1st century date was assigned, in agreement with its stratigraphic position. There is some resemblance between this feature and SG1620, located 3.7m to the north on the same alignment.

### **SG1443 (1442) =1445, (1444)**

SG1443 was a linear gully on a north-west to south-east alignment, tapering towards the terminal at the north-west. It was 0.44m wide and 0.16m deep and two sherds of pottery dating from the mid first century AD were recovered from the fill. Although it was shallow, it had a rounded v-shaped profile. Although this gully is within the area contained by G019, it is not obviously associated with any nearby features.

**G034: ring ditch (partial on the southern edge of site) (Figure 26)**  
Ring Ditch SG1316, Curvilinear Gully SG1321], Ditch SG1744

This ring ditch was located on the south side of a series of concentric ditches. It had no direct relationship with any other features but the shape echoed the ditches to the north (G035), which suggested that they were in existence when it was created.

Two sections were excavated through the ditch. SG1316 (1315) refers to a section excavated in the centre of the ditch. It was a very clear ditch with steeply sloping sides and a slightly rounded base and measured 1.30m wide and 0.45m deep. The fill consisted of mid grey brown silty-clay and was spot-dated to the mid-first century AD. Following the reduction of ground level by machine in order to clarify the myriad of features in this area, a section was excavated towards the east end of the ditch. SG1744 (1743) but unfortunately contained no finds. The ditch was 0.85m wide and 0.32m deep at this point.

Two other features were also associated with this group. They were SG1321 (1320), which was a shallow gully located on the north side of SG1316 and SG1399 (1400), a narrow gully also located on the north side of the ditch group. It measured 0.26 by 0.03m and contains orange brown clayey silt. There were no finds.

**G028: Enclosure ditch to the south/west (Area 3) (Figure 36)**  
Ditch SG1918, Ditch SG1937, Ditch SG1942, Ditch SG1944

A series of ditches contributed to a sub-rectangular enclosure at the western end of the site, which was partially exposed close to the southern boundary. The outer length of the complete exposed side was *c.* 21m and the feature had an estimated internal diameter of 16m. The enclosure appeared to be a single *c.* 4m wide feature on the surface but excavation showed it was composed of a number of intercutting ditches (Figure 39). The two inner ditches were spot-dated to the 1st century AD, although the timespan for backfilling is unclear, due to the number of recuts. The most shallow ditch was seen on the outer edge and the deepest was on the inner. No obvious entrance was identified. The feature resembles G0015 in size and complexity and possibly also longevity. The ditches had originally been examined during the evaluation phase, where it was found that the most shallow ditch, *c.* 0.30m deep, was located on the outer edge, while the deepest was on the inside. A minimum of six recuts was noted. However, it is interesting that the pottery recovered from the ditches during the evaluation is in the Iron Age scored ware tradition rather than the early Roman, as suggested by the excavation sections.



Figure 39: Section through ditches of G028

A slot excavated on the west side, close to the southern boundary, revealed the following features:

SG1944 (1943) was the outer ditch and the most shallow. It was a minimum of 0.45m wide and a maximum of 0.30m deep. The fill consisted of mid grey brown silty-clay. The ditch was truncated by a furrow on the west side and the relationship with the middle ditch [1942] is unclear. There were no finds.

SG1937 (1936) was an internal enclosure ditch and pre-dated SG1942, although both were dated to the mid-1st century AD. It measured 1.32m in width and was 1.04m deep.

SG1942 (1938), (1939), (1940) and (1941) was one of the central ditches, measuring a minimum of 0.38m wide and 0.39m in depth. It was truncated by (1939) but truncated ditch SG1937. The relationship with SG1944 was not established. The earliest deposit was fill (1941), followed by (1940). Both consisted of silty-clay and neither contained finds. Fill (1939) lay along the eastern side of the cut, possibly representing a re-cut. The main backfill was (1938), consisting of mid grey brown silty-clay and containing pottery dating to the mid-1st century AD.

SG1918 (1917) was the terminal of a north-south orientated curvilinear ditch, on the east side of G028. The fill contained pottery of Iron Age date, bone and flint, as well as lumps of re-deposited natural subsoil. However its relationship to the rest of the group is unclear.

### ***6.7 Phase 7: Late-First century AD***

The density of features declined dramatically during the first century AD and there is only one enclosure that can be considered purely Roman. This was the large penannular enclosure G005, located in the centre of the site. However, there is evidence that G022 and G021 were extant on site until final backfilling in the late 1st century AD.

#### **G021: Square enclosure, associated with G012 and G013 (Figure 34)**

Curvilinear Gully SG1581, Ditch SG1716, Ditch SG1908, Ditch SG1910, Ditch SG1912, Ditch SG2001, Ditch SG2024, Ditch SG2026, Gully SG2028, Ditch SG2030, Ditch SG2038, Ditch SG2058, Ditch SG2066

*Sub-rectangular enclosure towards west of the site*

G021 was sub-square in shape but open to the rest of the settlement on the eastern side. It was aligned along the ridge and measured *c.*32m (north-north-east to south-south-west) and *c.*28m (north-north-west to east-south-east). The northern and western arms were continuous and the northern arm ended in a deep pit, containing part of a quern, cut by a later gully (SG1579 and SG1581). However, the southern arm is short with a small, weak terminal (SG2066). The south-west corner was clearly remodelled in a later period associated with a north-south boundary, G022.

Excavation of various sections proved that it was not formed of continuous ditches but rather numerous linear features of various width and depth, which follow the same alignment but start, stop and truncate each other. Generally between two and four ditches were noted in each excavated slot indicating multiple backfilling and re-digging episodes. It was not possible to reconcile all these linear features with each other since different sequences were seen in each section. It was therefore concluded that the boundary developed in a piecemeal fashion.

The pottery indicates that the enclosure spans the late Iron Age into the late 1st century AD. Examination of the pottery resulting from individual sections presents quite a confused picture- it is evident that the ditches were not all open at the same time, yet it cannot be said that there is a single late recut. Roman pottery was present in several gullies on the north and west arms and also on the southern extension, G022. Therefore it is suggested that the feature originated in the late Iron Age, when it was associated with the ring gullies G012 and G013, which are positioned almost centrally, yet have a mid-late Iron Age date. There is no evidence to suggest that the roundhouses were in use in the later phase, but the enclosure itself was re-modelled and re-used until activity ceased on the site in the late 1st century AD. However, the smaller size, lack of complexity and absence of Roman pottery from the south-eastern terminal, suggested that it was not part of the later re-modelling.

The following text contains details of the sections excavated through the enclosure:

*Northern terminal and northern arm of the feature*

The northern terminal displayed evidence for several different events. A large deep feature SG1579 (1578) (W:1.30m; D0.75m) may represent a large pit. There was initial erosion from the pit sides into the base of the feature, prior to deliberate backfilling (Figure 40). The pit contained mid-late Iron Age pottery and a complete rotary quern lower stone (SF3, see Hearne, this report), which was placed in the backfill. A narrow gully, SG1581 (1580), formed the outer part of the enclosure, measuring 0.42m wide by 0.25m deep. The fill consisted of mid dark silty-clay with occasional charcoal flecks. A similar gully was observed in several locations across the northern arm of the enclosure (S34.16 (SG1930) and S43.05 (SG2024), probably also corresponding to a gully excavated during the evaluation in 2011 (26). In each case the gullies were of similar dimensions and have been therefore been grouped together under SG1581. Two of the gullies contained mid-1st century pottery, including the section next to SG1579, suggesting that the pit was the earlier feature.





Figure 40: Section through pit SG1579 and ditch terminal SG1581 (G021), looking west

The enclosure was identified during trial trenching undertaken in 2011 (Harvey 2011a); a section revealed that it was formed of three features; the widest gully C28 (W:0.65, D0.35m) had a terminal in the trench and was a recut of a second gully C26 (W:>0.4m D0.3m). On the inner side there was a separate narrow feature C24 (W0.37, D0.24m). C26 is likely to be a continuation of SG1581.

SG1716 (1714) and (1715) refers to a section excavated to the west of the evaluation trench, which established that the enclosure truncated a large pit, (SG1720). The enclosure gully was on the same line as SG1579 but far more shallow (the depth difference adds further weight to the idea that SG1579 was actually a pit rather than part of the enclosure ditch sequence). Fill (1714) was mid-dark brown silty-clay, with no finds, while the lower fill, (1715), was primary erosion from the sides of the feature.

SG1581=1930=2022 (1929)=(2021) was the outer ditch of corner of the enclosure. The relationship with the adjacent ditch [2024] is not clear in section or plan. The ditch appeared to truncate a pit, SG1932 (however, this was dated to the late 1st century).

#### *The north-west corner*

A series of shallow intercutting ditches and gullies made up the north-west corner of the enclosure. These were fairly well defined on the surface but lacked definition on excavation. Some started or terminated in this location and they were surprisingly shallow. However, mid-late Iron Age pottery was recovered from SG2028.

SG2024 (2023) (W:0.8m, D0.30) was the middle ditch in enclosure corner; the relationship with the outer ditch is unclear. Inner ditch SG2026 appears to be cut by SG2024. The fill consisted of light grey brown silty-clay with rare charcoal fragments and chalky stones. The feature had sloping sides and a flat base and became very shallow towards the northern end.

SG2026 (2025) was a short stretch of gully/ditch on the inner corner of the enclosure, which terminated within the excavated slot. It measured c. 4m in length, and was 0.80m wide and 0.20m deep. The fill contained much backfilled natural substratum and appeared to be truncated by SG2024.

SG2028 (2027) was a narrow U-shaped gully on the inner edge of enclosure (W:0.40m, D:0.22m), starting at the corner, just south of the terminal of SG2026 and ran south, possibly cutting SG2030. The fill consisted of light greyish brown silty-clay with occasional charcoal flecks and fire-cracked pebbles, as well as chalky stones.

SG2030 (2029) was unexpectedly insubstantial, consisting of a shallow smear of fill over natural (W:1.0m; D:0.12m). It was located on the outer edge (west) of the enclosure and in theory should represent two ditches, running southwards from the corner of enclosure. It was not possible to determine the relationship with other features.

*Western arm of the enclosure*

SG2038 (2037) and SG2058 (2057) were located in the middle of the western arm of the feature and measured c.1.40m, D 0.25m-0.30m). One section profile hinted at two ditches but there was less complexity than in other parts of the enclosure. The fill consisted of mid greyish brown silty-clay, with occasional charcoal flecks from which some pottery and bone fragments were recovered. A lower fill was observed in one of the sections. The ditch was truncated by a furrow and later by a land-drain on the western side. Pottery dated the ditch to the late 1st century AD, indicating that it was also part of the remodelled ditch system.

A gully, SG2036 (2037), was observed running parallel to the ditch on the east. It was narrow and heavily truncated, measuring 0.3m wide by just 0.1m deep.

Approximately 5m north of the south-west corner of the enclosure, the ditch sequence became more complex but ditches were also deeper and better defined (Figure 41). SG1908 (1907) was located on the western (outer) side. It was linear, with concave sides and base and was truncated by SG1912. It contained Iron Age pottery.

SG1910 (1909) was also a short length of ditch/gully on the outside edge in line with SG1908. It measured c. 4.15m x 0.45m x 0.15m and had a terminal within the excavation slot, offering further evidence that the enclosure was excavated as a series of short gullies. It was truncated by SG1912 and contained both Iron Age and AD mid-first century pottery.



Figure 41: South-facing section through SG1906, SG112 and SG1910

SG1912 (1911), (1935) was 0.66m wide. Upper fill (1911) was mid-dark greyish brown silty-clay with small pebbles and charcoal flecks, 0.25m deep. The lower fill (1935) consisted of mid yellowish brown silty-clay with small pebbles and flecks of charcoal, 0.33m deep. The

profile of the ditch at this point was U-shaped, with sloping sides and a flattish base. This ditch is probably the same as SG2001, which spans the corner of the enclosure

*The south-west corner*

The various ditches diverge in the south-west corner of the enclosure. The main ditch SG2001 forms a sharp right-angle. This may be the same feature as SG1912, seen on the northern arm, which had a spot date of mid- 1st century AD.

SG2001(=1919) (2000)=(1920) refers to the section excavated through the south-west corner of the feature, measuring 0.96m in width and 0.37m deep. The fill consisted of dark orange brown silty-clay with pebbles, containing more finds close to the top part of the fill. The profile was steep sided with a slightly rounded base and the corner was a sharp 90 degrees (Figure 42).



Figure 42: The south-west corner of G021 (SG2001)

*The south-eastern terminal*

SG2066 (-2065), (2081) was the southern terminal of the enclosure ditch (south side). There were no recuts and it was of small size, compared with the complexity of the northern terminal. It appeared to truncate post-hole [2068] but this is not certain. Fill (2065) consisted of dark grey with mottled orange, silty-clay, some charcoal flecks and chalky stones. An earlier fill, consistent with some natural substratum slumping and in-wash from the sides of the feature, was identified on the northern side. It was 0.70m wide and 0.30m deep at this point. Mid-late Iron Age pottery was recovered, which suggests that this terminal was backfilled by this end of this period and not included in the remodelling of the ditch.

**G022: Remodelled curvilinear North-South boundary (Figure 35)**

Ditch SG1914, Gully SG1916, Ditch SG1928, Ditch SG1959

A series of intercutting ditches, forming a curvilinear north-south boundary, diverged from G021 approximately 5m north of the south-west corner. It seems likely that the northern and western arms of the enclosure were re-used. They were excavated across the south-west

corner of the enclosure and continued to the south forming a dog-leg, possibly respecting the large, partially-exposed enclosure to the west (G028). The main ditch was SG1922, which may be the same as SG1914 but there were also associated ditches and re-cuts.



Figure 43: Junction of SG1922 (G022) and SG1920 (G021)

SG1916=1924 (1915) and (1923) was a very narrow shallow gully (a width of 0.13m and a maximum depth of 0.13m), located north of the southern arm of the square enclosure. It was located on the inner edge. It was on a north-west to south-east alignment and had shallow vertical sides and flat base. It was truncated to the south by SG1922.

SG1914=1975 (1913)=(1974) was parallel to SG1916, excavated north of the southern arm of the square enclosure. Although it was dated to the mid-late Iron Age, it may be part of SG1922. It was 0.40 wide by 0.30m deep.

SG1922=1959=1926 (1921=1958=1925)

SG1922 was the main ditch of the boundary, measuring 0.60m wide and 0.38m deep. It was part of a curving linear feature, beginning approximately 5m north of the corner of the enclosure G021. The ditch swings from the north to the south-east and in doing so truncates SG1920, part of G021 (Figure 43). SG1959 (1958) was a single ditch located south of the square enclosure (G021) and was a direct continuation of SG1922. It was *c.* 0.75m wide and 0.50m deep and truncated post-holes SG1987 and SG1989. Pottery of the late 1st century AD was recovered. This ditch continued towards the southern baulk as SG1926. At this point, it was truncated on the east side by a second ditch on the east side SG1928. Pottery of the mid-1st century AD was recovered.

SG1928 (1927) was located on the east side of the ditch group. It truncated parallel ditch SG1926 on the east side and had a terminal towards the south. The two ditches were of the same period, dating to the mid-1st century AD.

Two post-holes located near G021 and G022 on the southwest side of the site, SG2009 and SG2003 also contained mid-1st century pottery.

#### **G005: Ring ditch with west entrance (Figure 37)**

Ring ditches SG1392, SG1396, SG1437, SG1447, SG1457

The internal dimensions of the enclosure were 20m (north-east to south-west) and 22mm (north-west to south-east) and there was a distance of 4.6m between the entrance terminals. A number of features are present within the area that G005 enclosure, but there is no evidence beyond their location to suggest that any of them belong to this phase of activity. Wherever G005 encountered other features, it truncated them, including pit SG1487 and enclosure ditch SG1394. Several sections were excavated along the ditch, including both terminals (Figure 45) and Samian pottery, not located anywhere else on the site, was present in two locations (SG1457 and SG1437). Unlike most of the other enclosure ditches, there are few signs that it was re-cut, suggesting that it is probably a single phase feature. The fills were all essentially clay based, although varied slightly in consistency; in particular they were very dark in colour compared with other features on the site, suggesting a high charcoal and organic content as well as containing fire-cracked pebbles. The fill produced pottery of the mid-late 1st century, with a few sherds of residual Belgic and mid-late Iron Age. The enclosure resembles G018 in form and the fact that their entrances face each other suggests an association. It should be remembered that the dates are derived from the backfill and it may be that both enclosures were created in the late Iron Age but G005 was in use for a longer period.

Details of the sections are as follows:

SG1396 (1395) (Dimensions: W:1.6m; D:0.61m). A section was excavated through the northern terminal, which was a slightly irregular butt-end, with one stepped and one steep side and a flattish base. The fill consisted of dark greyish black sandy-clay with charcoal and large stones.

SG1457 (1456). (Dimensions: W:1.4m, D:0.64m) The section through southern terminal revealed a slightly pointed base. A Samian sherd was recovered. The fill consisted of dark grey brown silty-clay, with occasional fire-cracked pebbles. The feature cut a gully (part of G007) and an earlier pit, SG1487.

SG1392 (1391). A section excavated on the eastern side of G005, established that it truncated enclosure G015 (SG1394). The profile showed that the sides were steep and the base was fairly flat and was 0.7m wide and 0.7m deep. This was the only slot which did not contain early Roman pottery.



Figure 44: Section through ditch SG1392, G005

SG1437 (1436). (Dimensions: W:1.1m. D: 0.75m). A section through the length was slightly rounded base. The fill consisted of dark greyish brown clayey silt, with an area of slumping natural subsoil, especially on the north side. A Samian sherd was recovered.



Figure 45: Section through south-western terminal of G005 (SG1457)

## 6.8 Phase 8: Saxon

Saxon pottery was recovered from two adjacent post-holes on the west side of the site; SG2011 and SG2013. One post-hole was accompanied by a sherd of Roman greyware, however this is presumed to be residual. Both post-holes were sub-circular, shallow, *c.* 0.10m deep and *c.* 0.30m in diameter.

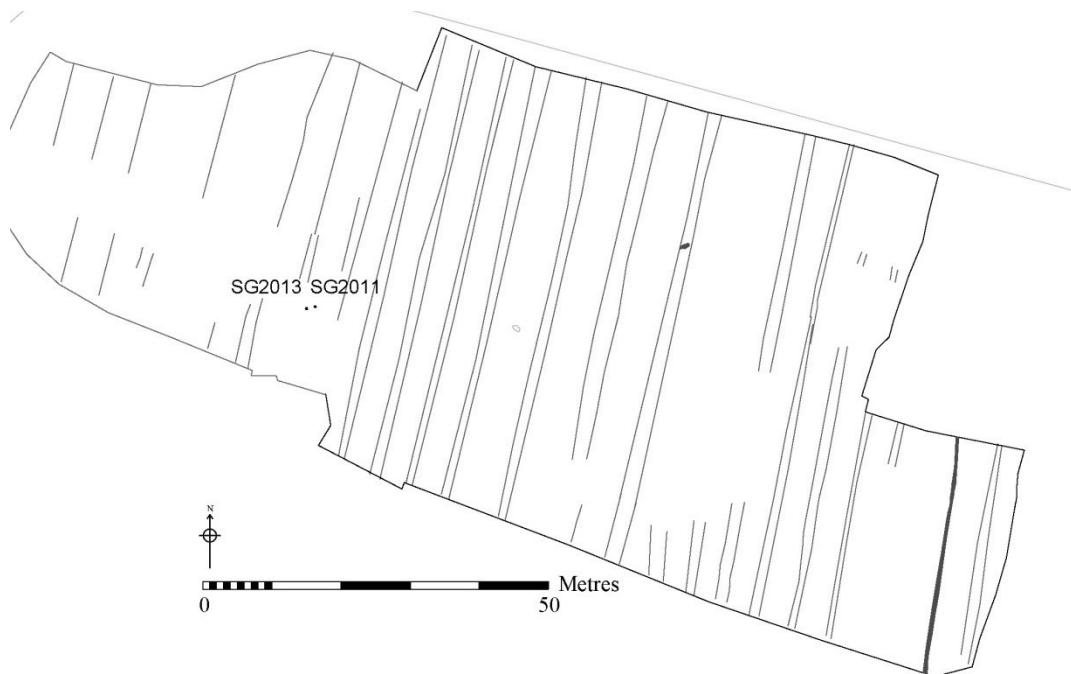


Figure 46: Saxon, medieval and post-medieval archaeology

## **6.9 Phase 9: Medieval**

Medieval activity was represented by a series of furrows, aligned north-south across the site. In this period, the site was part of fields belonging to the settlement of Great Bowden, located to the south.

## **6.10 Phase 10: Post-medieval**

In the post-medieval phase a shallow gully was located on the east side of the site. This was in alignment with the furrows and was presumably excavated in the base of one to facilitate drainage.

### **G043 Post medieval drainage gully**

SG1080 was a linear gully on a north-west to south-east alignment. It was 0.40m wide by 0.12m deep and cut across the eastern side of the site, truncating all the other features.

## 7. The Finds and Environmental Evidence

### 7.1 The Prehistoric Lithics by Lynden Cooper

Some 120 worked flints were recovered from late Iron Age and Romano-British features. A similar number of natural flints were recovered but these have been discarded. The worked flints are considered as residual in later features. The raw material was local, till derived, semi-translucent and grey brown in colour. The bladelet technology hints at slight Mesolithic activity, and the serrated flake (micro-denticulate) is probably of this period. The remaining flints are ‘domestic’ tools and knapping debris from the Neolithic – Bronze Age.

Table 3: Waterfield Place Lithics

Type	Comment (degree of patina indicated by asterisk)							Total
	None	*	**	calcined	dendritic patina	orthogonal	patinated and slightly rolled	
concave scraper	1							1
core	5					1	1	7
core on flake	2							2
denticulate	1							1
scraper	1							1
serrated flake			1					1
1ry blade	1							1
1ry flake	1							1
2ry bladelet	3							3
2ry flake	65	1			1			67
3ry flake	20							20
bladelet frag	3							3
shatter	3							3
flake frag	5	1						6
flake frags				3				3
<b>Total</b>	<b>111</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>120</b>



## 7.2 The Iron Age and Roman Pottery by Elizabeth Johnson

### *Assemblage Size and Condition*

An assemblage comprising 1490 sherds of pottery weighing 14.488kg with an EVEs value of 7.47 was retrieved from the excavations. Most of the pottery is Iron Age, accounting for 1225 sherds, 10.526kg and 5.19 EVEs. The majority of the Iron Age pottery is middle-late Iron Age, though a small quantity of early-middle Iron Age and late Iron Age ‘Belgic’ pottery was also recovered. The remainder of the assemblage is Roman pottery, accounting for 265 sherds, 3.962kg and 2.28 EVEs. The condition of the Iron Age material is variable, with some in good condition, but many abraded sherds, as indicated by the average sherd weight of 8.6g. This is not an uncommon feature of Iron Age pottery; particularly where shell-tempered wares are present, as the calcareous inclusions are often easily dissolved once buried. The Roman pottery is in reasonably good condition overall, reflected in the average sherd weight of 15g.

### *Methodology*

The pottery was examined in hand specimen using a binocular microscope at x15 magnification and classified using the Leicestershire fabric series for Prehistoric and Roman pottery as summarised below (Pollard 1994; Marsden 2011), with reference to the Prehistoric Ceramic Research Group’s guidelines (PCRG 1997).

Table 4: Summary of Leicestershire Prehistoric pottery fabric series (Marsden 2011, 62)

<b>Fabric</b>	<b>Description</b>
<b>Shell-tempered</b> S1 <i>Shell</i> S2 <i>Sandy fabric with shell</i>	Moderate to very common shell or platy voids (1–5mm). As S1, but with common to very common sub-rounded to rounded quartz sand (0.25-1mm).
<b>Grog-tempered</b> G1 <i>Grog in shelly and sandy fabric</i> G2 <i>Grog in sandy fabric</i>	Shelly and sandy fabric (similar to S2) with sparse rounded grog (c.0.2-0.5mm). Sandy fabric (similar to Q1) with rare rounded grog (0.5-2mm).
<b>Sandy</b> Q1 <i>Quartz sand</i>	Common to abundant sub-rounded to rounded quartz sand (0.25–1mm).
<b>Quartz</b> Q4 <i>Sandy fabric with quartz</i>	Common to abundant sub-rounded to rounded quartz sand (0.25–1mm) and rare to sparse sub-angular to sub-rounded quartz (probable pebble source, 0.5–5mm, occasionally larger, up to 10mm).
<b>Granitic rock</b> R1 <i>Granitic rock</i> R3 <i>Sand and granitic rock</i>	Rare to moderate sub-angular granitic rock (0.5–4mm) and rare to sparse sub-rounded to rounded quartz sand (0.25–1mm). Moderate to very common sub-rounded to rounded quartz sand (0.25-1mm) and granitic rock inclusions (0.5-4mm).

Table 5: Summary of Leicestershire Roman pottery fabric series (Pollard 1994, 112-114)

<b>Fabric</b>	<b>Description</b>
CG (CG1A) Calcite gritted (shelly)	Fossil marine shell, low quartz content. CG1A is early (late Iron Age to 2nd century).
SW (SW2-3) Sandy wares	Fine and coarse sandy. SW2 in “Belgic” styles, generally wheel thrown. SW3 hand-made jars of late Iron Age and 1st century

Fabric	Description
	AD.
GT (GT1-2) Grog-tempered wares	Coarse and fine fabrics with “Belgic” forms diagnostic.
MG (MG1-2) Mixed-gritted wares	Coarse and fine fabrics, as GT1-2 but with grog sparse or absent and sparse-moderate quartz and calcite. “Belgic” styles.
OW (OW1-2) Oxidised wares	Fine and fine sandy oxidised wares.
GW (GW3, 5, 6) Grey wares	Fine, medium and coarse sandy grey wares.
WW (WW5)	Coarse sandy white wares from the Verulamium region.
Samian (SGSam)	South Gaulish samian wares.

Quantification was by sherd count, weight (grams) and estimated vessel equivalents (EVEs based on rim values). Average sherd weights (ASW) have also been calculated to provide an indication of the condition of the material and levels of preservation within the assemblage. Vessel forms were assigned where diagnostic sherds allowed, using the Leicestershire Museums form series and other published typologies. The dataset was recorded and analysed within an MS Excel workbook and MS Access database, which comprise the archive records.

### *The Early-Middle and Middle-Late Iron Age Pottery*

The early-middle and middle-late Iron Age pottery accounts for 80.6% of the assemblage by sherd count, 69.5% by weight and 60.4% of the EVEs. The table and chart below illustrate the range and proportions of fabrics present. Figure 1 shows the percentage of fabrics present by EVEs as a measure of individual vessels identified, whilst weight is shown to enable comparison with other published sites.

Table 6: Quantification of the early-middle and middle-late Iron Age pottery

Fabric	Sherds	% Sherds	Weight (g)	% Weight	EVEs	% EVEs	ASW (g)
G1	95	7.9%	869	8.6%	0.525	11.6%	9.1
G2	29	2.4%	228	2.3%	0.235	5.2%	7.9
Q1	34	2.8%	252	2.5%	0.725	16.1%	7.4
Q4	2	0.2%	70	0.7%	0	0.0%	35.0
R1	3	0.3%	28	0.3%	0	0.0%	9.3
R3	1	0.1%	21	0.2%	0	0.0%	21.0
S1	781	65.1%	6605	65.6%	1.745	38.6%	8.5
S2	255	21.3%	2000	19.9%	1.285	28.5%	7.8
<b>Total</b>	<b>1200</b>	<b>100.0%</b>	<b>10073</b>	<b>100.0%</b>	<b>4.515</b>	<b>100.0%</b>	<b>8.4</b>

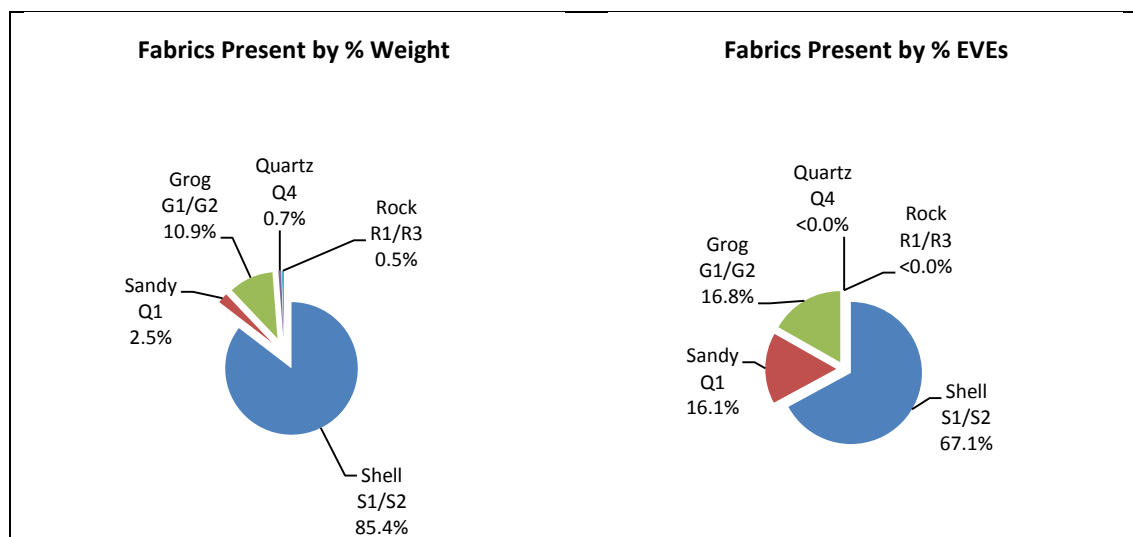


Figure 47: Early-middle and middle-late Iron Age pottery fabrics present by % EVEs and weight.

The assemblage is dominated by the shell-tempered fabrics S1 and S2, which account for 85.4% by weight. The next largest fabric group is the grog-tempered wares accounting for 10.9%, followed by small quantities of sandy, quartz pebble and granitic rock tempered wares. The dominance of shell-tempered wares in south-east Leicestershire and Rutland is evident at other Iron Age sites such as Empingham (Cooper 2000, 67), Whitwell (Todd 1981, 23) and Oakham (Johnson 2015), with the local outcrops of Lincolnshire limestone the most likely source of the shell inclusions (Marsden 2000, 173).

In total, 82 jar rims were recovered. Upright rims were most common (68.3%), followed by upright flattened rims, upright flattened and expanded rims and flattened and expanded rims (17%). The remaining rim forms present include inturned and outcurved rims, one triangular rim, one almost lid seated rim and two corrugated rims. Eleven rims had fingertip or finger nail impressions or notches on them and 10% of the body sherds were scored. Three vessels were found with fingertip impressed dimples on the body beneath the shoulder, rather than on the rim. Four vessels were found with fine incised zigzag decoration on the upper half of the body. The mix of decorative styles and rim forms is very interesting, as it suggests activity spanning the early to late Iron Age.

A comparison of this site with other Iron Age sites in the region spanning south, central and north Leicestershire, Rutland and south Nottinghamshire, shows interesting differences in the proportions of fabrics present, as illustrated in the table below.

The central Leicestershire sites at Humberstone (Marsden 2000, 2011), Wanlip (Marsden 1998a) and Birstall (Marsden 2009) are located reasonably close to the Charnwood Forest outcrops and are dominated by granitic-tempered wares. Although precise figures are not available for the middle Iron Age site at Beaumont Leys, this assemblage is also dominated by granitic fabrics (Marsden 2011, 61). Quartz and quartz-sand tempered wares are predominant at Lockington (Johnson 2011) and Gamston (Knight 1992), situated much further to the north where the underlying geology is quartz pebble beds. This is in stark contrast to this site at Market Harborough (south Leicestershire) and the Oakham site in Rutland, where shell-tempered wares are dominant. The assemblages are all comparable in respect of vessel forms and decorative styles, irrespective of whether quartz, granitic-tempered or shell-tempered fabrics are most common. This supports the idea that Iron Age

pottery is essentially locally made, and that scored ware is a tradition or style widely produced locally throughout the East Midlands during the middle-late Iron Age (Elsdon 1992a, 84).

Table 7: Comparison of Iron Age pottery fabrics found by site and % weight

Site	Fabric (% weight)				
	Quartz	Sandy	Granitic	Shell	Other
Waterfield Place, M. Harborough, Leics	0.7	2.5	0.5	85.4	10.9
Huntsman's Drive, Oakham, Rutland	0	2.1	0	82.2	15.7
Elms Farm, Humberstone, Leics	0	2.3	89.4	2.3	0
Wanlip, Leics	0	16.0	82.3	0.5	1.2
Manor Farm, Humberstone, Leics	1.4	3.1	82.4	13.1	0
Hallam Fields, Birstall, Leics	0	9.5	88.2	2.0	0
Lockington, Leics	73.4	21.1	0.4	2.3	2.7
Gamston, Notts.	86.5		0.75	10.7	2.05

There is a case to be made for some trade or exchange where smaller quantities of granodiorite and shell-tempered wares are found (Knight *et al* 2003). Within this assemblage, the quantity of granitic tempered wares (R1 and R3 fabrics) is very small comprising just four sherds (49g) from four sub-groups as detailed below:

SG1066 [1171] (1170), Ring Ditch 1, Group 2. There is also a flattened upright rimmed jar in this context.

SG1510 [1510] (1509), a ring ditch within Group 7. The R3 sherd is scored and a fine proto-lid seated jar of possibly later Iron Age date is also present.

SG2038 [2038] (2037), a square enclosure, Group 21. The R1 sherd is scored and is the only Iron Age material in a context with Roman pottery dating to the mid-late 1st century.

SG2042 [2042] (2046), a ditch within Group 29. The rest of the pottery (three sherds) is also middle-late Iron Age and is abraded.

The granitic tempered wares appear to be associated with middle-late Iron Age scored ware or, as in the case of the R3 sherd, are residual alongside early Roman pottery. They do not appear to be associated with earlier pre-scored ware pottery, though this needs to be viewed with caution given the small quantity of material.

During the evaluation phase of work at this site, eight sherds of R1 granitic pottery were recovered from a single context [22] (23), including two small handle-less cups or thumb pots (Cooper 2011, 37). These were recovered in what is now SG1491, a pit possibly associated with the roundhouses Groups 12 and 13 and the Iron Age phase of the square enclosure Group 21. Parallels for this type of vessel are known from the early-middle Iron Age site of Biddenham Loop in Bedford and from the Hunsbury Hillfort site in Northamptonshire. The latter is well known for its large assemblage of middle-late Iron Age La Tène curvilinear decorated pottery (*Ibid*; Elsdon 1992a, 89-90). The presence of unusual, possibly special vessels, in a fabric that is not local, does suggest some form of trade or exchange to obtain particular vessels for a specific reason. The two cups from SG1491 did appear to have been carefully placed within the pit rather than merely discarded as rubbish (Cooper 2011, 37).

*Early or Early-Middle Iron Age Pottery*

Forty-one sherds weighing 692g of early or early-middle Iron Age pottery was recovered from four sub-groups as follows:

SG1045 [1045] (1044), a pit associated with a possible round house gully within Group 37.

SG1249 [1249] (1248), a ring ditch within Group 31 in the north-west area of the site.

SG1459 [1459] (1458), a post-hole.

SG1662 [1662] (1661), a pit within Group 45 located to the south of Enclosure G0021.

Two corrugated rims were found in (1661) and (1458) (Figure 48 and Figure 49). These are comparable to vessels recovered from Empingham in Rutland (Cooper 2000, 68-70); Buddon Wood in Leicestershire (Elsdon unpublished); Gretton in Northamptonshire (Jackson and Knight 1985, 79, fig 8.65) and Fiskerton in Lincolnshire, dated to the early or early-middle Iron Age (Knight 2002, 126-131). Body sherds with fingertip impressed dimples on the body rather than the rim were recovered from (1044), (1248) and (1458) (Figure 49). This is a decorative style associated with earlier rather than later Iron Age pottery, as evidenced at Empingham and Gretton (Cooper 2000, 67-69; Jackson and Knight 1985, 77-79, figs 6-8).

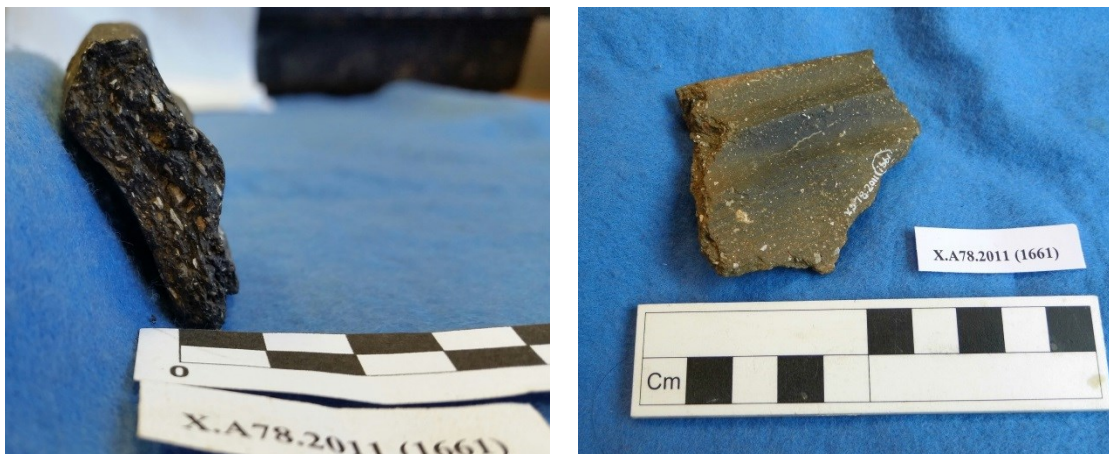


Figure 48: Early or early-middle Iron Age corrugated jar rim from (1661), fabric S1.

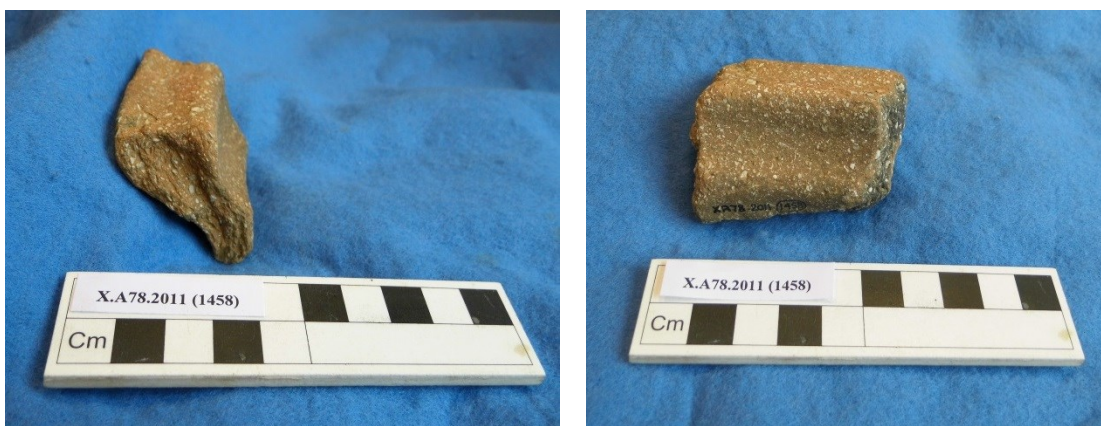




Figure 49: Early or early-middle Iron Age corrugated jar rim and body sherd with finger impressed decoration from (1458), fabric S1.

#### *Middle-Late Iron Age Pottery*

Overall, the majority of the Iron Age pottery fits broadly within the East Midlands scored ware tradition, characterised by upright, inturned, flattened or flattened and expanded rims, with scored body sherds and fingertip decoration restricted to the rims. Scored wares generally date to the middle-late Iron Age, starting possibly as early as the 5th or 4th century BC, becoming widespread from the middle of the 3rd century BC and continuing well into the 1st century AD in rural areas of Leicestershire (Elsdon 1992a, 83-89; Knight 2002, 134-135).

It has also been suggested that the proportion of scored sherds within an assemblage increases with time, reaching up to 50% or more by the late Iron Age (Elsdon 1992a 83-89). A puzzle within this assemblage is that although the fabrics and vessel forms are typical of scored ware assemblages, the percentage of scored sherds recovered is very low at only 10%. Other assemblages from sites in Leicestershire such as Grove Farm, Enderby (Elsdon 1992b); Wanlip (Marsden 1998a); Elms Farm, Humberstone (Marsden 2000) and Manor Farm, Humberstone (Marsden 2011), have percentages of scored ware between approximately 29% and 45%, as would be expected from a middle-late Iron Age assemblage. A closer comparison can be made with the assemblage from Beaumont Leys, Leicester (Marsden 2011), where scored wares accounted for 7.2% of the assemblage. Interestingly, the radiocarbon dates for Beaumont Leys suggest an earlier date, *c.*600-400BC. Marsden highlights the same point that the fabrics and rim forms fall within the East Midlands scored ware range in spite of the low percentage of scored sherds recovered. Referring to the radiocarbon dates, he suggests some of the activity at Beaumont Leys probably does pre-date the introduction of scored ware, although also notes that plain vessels without scoring are common during the middle-late Iron Age (*Ibid*, 63). This could also be the case here, with

the paucity of scored sherds indicating a date towards the middle Iron Age for at least part of the assemblage, even though plain vessels do occur during the middle-late Iron Age as well.

Table 8 shows the Feature Groups where scored sherds occur, accounting for approximately 70% of the scored sherds from the assemblage. The remaining scored sherds are from ungrouped sub-groups.

Scored sherds and rims associated with scored ware assemblages are scattered throughout the site, however this table shows that 56.1% of those rims are associated with scored body sherds, with some groups showing relatively high concentrations. Group 19, a sub-oval enclosure to the south of the site, provided 14 scored sherds alongside upright and flattened upright rims. Nine scored body sherds and 11 separate rims were recovered from Group 15, a large complex circular enclosure in Area 1. Groups 12 and 13 are two ring gullies associated with each other from which 14 scored sherds and four rims were recovered. These two groups are also associated with the rectangular enclosure Group 21, which revealed five scored sherds and four jar rims. Group 21 also has sub-groups containing 1st century AD late Iron Age 'Belgic' pottery, and Roman pottery dating to the mid-late 1st century AD, suggesting it was long-lived and possibly remodelled as shown by Group 22. Group 22 also revealed two scored sherds and an upright rim jar alongside sub-groups with Roman pottery. Scored sherds also appear in Groups 7, 18 and 26, which are stratigraphically later and may contain pottery dating to the late Iron Age as discussed below.

Table 8: Occurrences of scored ware within Feature Groups.

Group	Date	Feature	Pottery
2	M-LIA	Ring Ditch 1	31sh, 281g, 3 scored, 2 flattened upright rims.
3	M-LIA	Boundary/drainage gullies	29sh, 212g, 3 scored, 1 upright rim.
4	M-LIA	Ring Ditch 2	12sh 122g, 1 scored, 1 upright rim with fingertip decoration.
6	M-LIA	Ring gully	8sh 61g, 1 scored, 1 flattened upright rim.
7	M-LIA	Ring ditch	8sh 86g, 3 scored, 1 proto-lid seated rim, possibly later IA (N. <i>Cooper pers. comm.</i> ).
9	M-LIA	Ring gully	9sh, 73g, 4 scored, 1 upright flattened rim.
10	M-LIA	Circular enclosure	25sh 338g, 3 scored, 1 upright rim.
12	M-LIA	Outer ring gully	35sh, 307g, 10 scored, 2 upright rims, 1 flattened upright rim.
13	M-LIA	Inner ring gully	56sh, 391g, 4 scored, 1 upright rim.
14	M-LIA	Shallow ring gully	3sh, 16g, 1 scored, 1 upright rim.

Group	Date	Feature	Pottery
15	M-LIA	Large circular enclosure	77sh, 1.004kg, 9 scored, 8 upright rims, 2 flattened upright rims, 1 flattened and expanded upright rim inc. 2 with fingertip decoration.
16	M-LIA	Shallow sub-rectangular enclosure	108sh, 686g, 5 scored, 5 upright rims inc. 1 with notched rim, 1 flattened and expanded rim
18	M-LIA	Penannular enclosure	18sh, 100g, 1 scored, 1 upright rim with notched decoration.
19	M-LIA	Sub-oval enclosure	39sh, 478g, 14 scored, 3 upright rims, 1

			flattened upright rim.
20	M-LIA	Square enclosure	11sh, 47g, 1 scored.
21	M-LIA to Roman	Rectangular enclosure assoc. Grps 12 and 13.	52sh, 307g IA plus 92sh, 1.298kg Roman. IA includes 5 scored, 3 upright rims and 1 in-turned rim.
22	M-LIA to Roman	Re-modelled curvilinear N-S boundary ditch	40sh, 231g IA plus 57sh, 929g Roman. IA includes 2 scored, 3 upright rims.
24	M-LIA	Curvilinear gully	5sh, 18g, 1 scored.
25	M-LIA	Partial ring ditch	11sh, 116g, 2 scored.
26	M-LIA	Group of intercutting pits	39sh, 196g, 1 scored, 7 upright rims.
28	M-LIA to Roman	Enclosure ditch	2sh, 7g IA plus 4sh, 41g Roman. IA includes 1 scored.
31	M-LIA	Inner sub-circular ditch	22sh, 330g, 3 scored, 2 upright rims.
33	M-LIA	Later ring or curvilinear ditch	6sh, 51g, 1 scored.
40	M-LIA	Gullies assoc. Grp 31	14sh, 118g, 2 scored.
44	M-LIA	Features to south edge of site	15sh, 187g, 2 scored.

### *Later(?) Iron Age Pottery*

A small quantity (10 sherds, 82g) of very fine shell tempered or grog and shell tempered wares was recovered from the following sub-groups:

SG1302 [1302] (1301), a pit.

SG1378 [1378] (1377), a pit.

SG1460 [1460] (1461), a pit within Group 26.

SG1469 [1469] (1468), a ditch within Group 41.

SG1510 [1510] (1509), a ring ditch within Group 7.

SG1554 [1554] (1553), a pit.

SG1484 [1484] (1590), a curvilinear gully within Group 18.

Whilst these vessels generally fall into the S1 or G1 fabric groups, the shell component is very fine and the vessels are thinner walled. Four of these vessels display a fine incised zigzag pattern on the body between the rim and shoulder and one is burnished (Figure 50). Two vessels have outcurved rims and two are carinated (contexts (1301), (1468), (1553) and (1590)). There is also a proto-lid seated jar from (1509) comparable to late Iron Age pottery found at Pineham in Northamptonshire. As yet a parallel for the incised zigzag decoration has not been found, however the fabrics are similar to those used for late Iron Age La Tène curvilinear decorated pottery, suggesting the possibility that these particular vessels may date towards the later Iron Age (N. Cooper pers. comm.).



Figure 50: Iron Age pottery from (1590) with incised zigzag decoration, fabric G1.



It is worth noting that Groups 7, 18 and 26 are all located in the same area and are stratigraphically later features (J. Browning pers. comm.). In addition, Group 41 cuts Group 31, from which early or early-middle Iron Age pottery was recovered, indicating it would not date before the middle Iron Age.

### *The Late Iron Age ‘Belgic’ Pottery*

A small group of late Iron Age ‘Belgic’ pottery dating to the early-mid 1st century, c.AD20-60, was recovered from the following sub-groups:

SG1102 [1102] (1103), a post-hole within Group 36.

SG1107 [1107] (1106), a gully.

SG1319 [1319] (1317), a ditch within Group 35.

SG1435 [1435] (1433), a post-hole.

SG1437 [1437] (1436), a ring ditch within Group 5.

SG1689 [1689] (1721), a gully.

The 25 sherds (453g) account for 1.7% of the pottery assemblage. The vessels comprise grog-tempered, grog and shell tempered, and sandy ware jars and bowls, as illustrated in the table below.

Table 9: Quantification of the late Iron Age ‘Belgic’ pottery

Fabric	Sherds	% Sherds	Weight (g)	% Weight	EVEs	% EVEs	ASW (g)
G1	20	80.0%	409	90.3%	0.675	100.0%	20.5
G2	3	12.0%	30	6.6%	0	0.0%	10.0
Q1	2	8.0%	14	3.1%	0	0.0%	7.0
<b>Total</b>	<b>25</b>	<b>100.0%</b>	<b>453</b>	<b>100.0%</b>	<b>0.675</b>	<b>100.0%</b>	<b>18.1</b>

Four grog and shell tempered vessels (fabric G1) were found, including a carinated bowl from (1103) and two corrugated jars from (1317) and (1721). The two grog-tempered vessels (fabric G2) include a carinated jar or bowl from (1106). The Q1 sandy ware sherds are both undiagnostic body sherds and are abraded.

The carinated and corrugated vessel forms are consistent with ‘Belgic’ pottery of the 1st century AD, and compare to any number of similarly dated sites in the region such as Weekley (Jackson and Dix 1987), Wakerley (Jackson and Ambrose 1978) and Mawsley (Johnson 2012) in Northamptonshire; Empingham in Rutland (Cooper 2000); and early sites in Leicester such as Bath Lane (Clay and Mellor 1985) and the West Bridge Area (Clay and Pollard 1994).

### *The Roman Pottery*

The Roman pottery accounts for 17.8% of the assemblage by sherd count, 27.4% by weight and 30.5% of the EVEs, as illustrated in the tables and chart below. Figure 51 shows the percentage of fabrics present by EVEs as a measure of individual vessels identified, whilst sherd count is shown to enable comparison with other published sites.

The majority of the Roman pottery (71.3% by sherd count, 67.9% by weight, 76.1% by EVEs) can be found within seven Feature Groups as detailed in Table 10 below, with the remaining pottery located in ungrouped sub-groups. Groups 5, 21 and 22 account for 67.5%

of the Roman pottery by sherd count, 66.2% of the weight and 76.1% of the EVEs, with only very small quantities spread around the other four groups.

Table 10: Feature Groups containing Roman pottery.

Group	Sub-group	Description
5	SG1396 [1396] (1395) SG1437 [1437] (1436) SG1457 [1457] (1436)	Ring ditch Ring ditch Ring ditch
21	SG1910 [1910] (1909) SG1912 [1912] (1911) SG1581 [1930] (1929) SG2038 [2038] (2037)	Ditch Ditch Curvilinear gully Ditch
22	SG1959 [1926] (1925) SG1959 [1959] (1958) SG1928 [1928] (1927)	Ditch Ditch Ditch
28	SG1937 [1937] (1936) SG1942 [1942] (1938)	Ditch Ditch
34	SG1316 [1316] (1315)	Ring ditch
42	SG1985 [1985] (1984)	Curvilinear gully
46	SG2011 [2011] (2010)	Post-hole

Table 11: Quantification of the Roman pottery.

Fabric	Sherds	% Sherds	Weight (g)	% Weight	EVEs	% EVEs	ASW (g)
CG	130	49.1%	1578	39.8%	0.57	25.0%	12.1
GT	17	6.4%	423	10.7%	0.05	2.2%	24.9
GW	27	10.2%	396	10.0%	0.435	19.1%	14.7
MG	35	13.2%	686	17.3%	0	0.0%	19.6
OW	3	1.1%	20	0.5%	0	0.0%	6.7
Sam	3	1.1%	18	0.5%	0.1	4.4%	6.0
SW	35	13.2%	661	16.7%	1.125	49.3%	18.9
WW	15	5.7%	180	4.5%	0	0.0%	12.0
<b>Total</b>	<b>265</b>	<b>100.0%</b>	<b>3962</b>	<b>100.0%</b>	<b>2.28</b>	<b>100.0%</b>	<b>15.0</b>

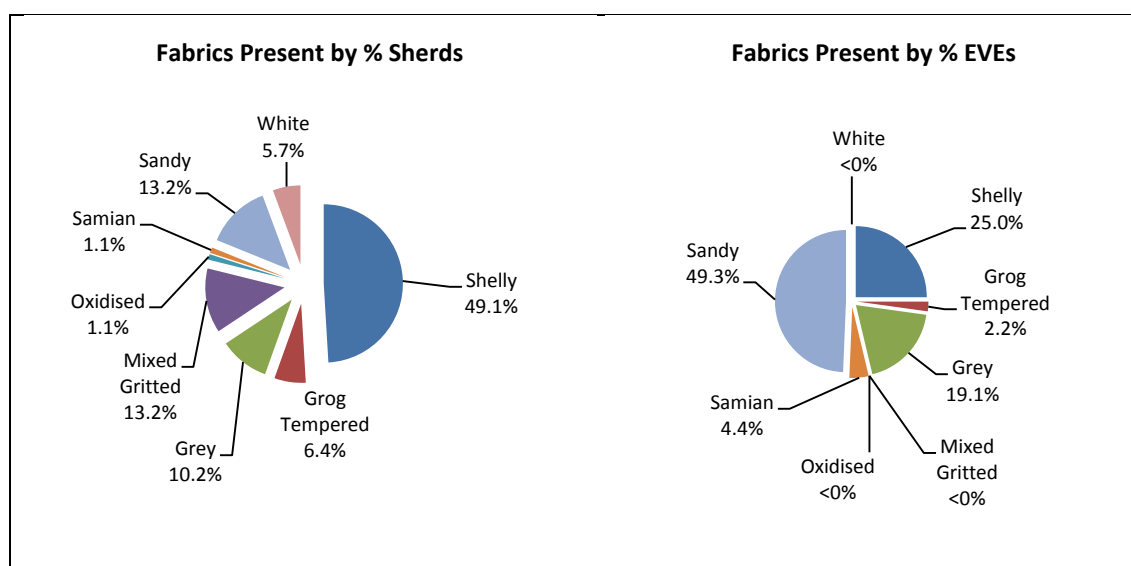


Figure 51: Roman pottery fabrics present by % sherd count and EVEs.

The Roman pottery assemblage is characterised by early shelly wares and transitional fabrics, with shell-tempered, grog-tempered, mixed-gritted and sandy wares accounting for 82.5% by sherd count and 76.5% of the EVEs. Shell-tempered wares account for almost half the

assemblage by sherd count and 25% of the EVEs. Five jar rims were recovered including a bead rim from (1315) (Group 34) and a neckless ledge-rimmed storage jar from gully (1721) [1689] SG1689. Three channel-rimmed jars were found in (1911), (2037) (both Group 21) and (2081) [2066] (the terminal of an enclosure ditch). There are also some body sherds with combed decoration, which is a common feature of 1st century shell-tempered storage jars. All these rim forms are typical of the mid-1st century AD. Channel-rimmed jars are very common in 1st century Northamptonshire assemblages and it is perhaps unsurprising to see them appear here in the south of the county so close to the border with Northamptonshire.

The sandy, mixed-gritted and grog-tempered wares are sometimes known as “transitional” fabrics and date within the 1st century AD (Pollard 1994, 74-75). Sandy wares account for 13% of the sherds and almost half the EVEs. Most of the sandy wares are in the fine SW2 fabric (10 out of 13 vessels), with five rims recovered from three contexts. A large portion of a cordoned jar with rounded outcurved rim and zones of burnished line decoration was retrieved from (1958) (Group 22), along with a carinated jar. Three separate jars with curved everted rims were recovered from (1456), whilst a burnished bead rim jar or beaker was found in (1436) (both Group 5). The fabric and vessel forms indicate a mid-1st century date. All the grog-tempered wares are in the coarse GT1 fabric most commonly used for storage jars. A roll-necked storage jar rim was recovered from (1456) (Group 5), whilst a cordoned jar was found in (1721) SG1689. The mixed-gritted wares comprise a mixture of coarse and fine fabrics. Two jars with rounded outcurved rims and cordons were recovered from (1762) (a collection of surface finds) and (2037) (Group 21). Both the grog-tempered and mixed-gritted wares date to the mid-1st century AD.

The remainder of the Roman pottery comprises a small quantity (47 sherds, 607g) of grey, oxidised, white and samian wares. A samian ware Ritterling 8 hemispherical cup imported from South Gaul was recovered from (1436) (Group 5). This is a pre-Flavian form and would date to the mid-1st century in Britain (Webster 1996, 70). A white ware flagon from the Verulamium region was found in a pit (1931) [1932] SG1932. These date from the later 1st century into the early 2nd century. Two fine sandy oxidised ware jars dating to the mid-late 1st century were recovered from (1456) (Group 5) and (1958) (Group 22), the latter with cordons on the shoulder. Grey wares were found in nine contexts and comprise jars, bowls and beakers. A fine beaker almost like a butt beaker was recovered from (1764) SG1457 (surface finds), whilst a biconical carinated beaker was found in (1931) SG1932. Both of these would date to the later 1st century. A small fine jar or beaker with rusticated decoration from (1958) (Group 22) dates from *c.*AD50 into the early 2nd century (Pollard 1994, 77). Two cordoned jars were found in (1958) (Group 22) and (2037) (Group 21), also indicating a date from the later 1st century. A medium sandy grey sherd from (1927) (Group 22) looks very similar to Northamptonshire/Upper Nene Valley grey wares found at Mawsley, Northamptonshire. There are many kiln sites in that area producing grey wares from the later 1st century onwards, such as Ecton, Mears Ashby, Weston Favell and Little Billing (Johnston 1969). This suggests pottery was available from sources in Northamptonshire to the south as well as local Leicestershire sources.

A date range within the 1st century is most likely for the Roman pottery, with most dating to the middle of the 1st century. Whilst it is possible for the white and grey wares to date into the early 2nd century, a later 1st century date is more likely given the quantity of 1st century transitional wares and the absence of anything else suggesting an early 2nd century date.

## Discussion

There is evidence of activity at the site from the early or early-middle Iron Age through to the early Roman period, with the latest datable pottery suggesting a later 1st century or possibly early 2nd century date at the latest. The Iron Age pottery is largely local, with small quantities of granitic rock tempered vessels acquired from elsewhere, most notably the two small handle-less cups from SG1491. The Roman pottery is also mostly local in nature, with shell-tempered and early sandy wares forming the bulk of the assemblage. There are a few imported wares, including the samian ware cup from South Gaul and the white ware flagon from the Verulamium region. Some of the grey wares could also be from slightly further afield in Northamptonshire.

The earliest pottery can be found in Groups 31, 37 and 45, where a small amount of evidence for early or early-middle Iron Age activity can be found. Following this, most of the pottery falls within a middle-late Iron Age date range overall. Comparison with the middle Iron Age site at Beaumont Leys, Leicester, suggests there is most likely an element dating closer to the middle Iron Age as well as features with pottery more typical of a middle-late Iron Age scored ware assemblage. In addition, there is a small group of pottery with unusual decoration and finer fabrics which may be later Iron Age in date and are found in stratigraphically later groups. A small group of late Iron Age 'Belgic' pottery also suggests activity continues throughout the Iron Age to the Iron Age-Roman transition during the 1st century AD. The Roman pottery assemblage is fairly small and is concentrated in Groups 5, 21 and 22. The latter two groups show the re-use and remodelling of the large square enclosure previously associated with two roundhouses. The majority of the Roman pottery dates to the mid-1st century or mid-late 1st century and is dominated by transitional fabrics and forms. There is some evidence of more 'Romanised' grey, white and oxidised wares produced from the later 1st century onwards, and these wares provide the latest datable ceramic evidence for activity at the site. It would appear that after a lengthy period of use during the Iron Age, the site goes out of use by the end of the 1st century AD.

A small assemblage of Iron Age pottery (415 sherds, 3.165kg) was recovered from the nearby site at Airfield Farm, Market Harborough (Chapman 2007). The site comprises enclosures and a driveway. The fabrics are comparable to Waterfield Place with the prevalence of shell-tempered wares noted. The few forms that were identifiable are also comparable including upright and upright flattened rims. Unfortunately no quantified data is available, however the presence of "much scored ware" is noted suggesting a significant amount of the assemblage is scored. Overall a date range from the middle to the late Iron Age is suggested, with the site becoming disused no later than the 1st century BC (*Ibid*, 11-12; 22).

This is in contrast to Waterfield Place, both in terms of the quantity of scored ware and the proposed date of abandonment, as the site here clearly continues into the early Roman period. It is suggested that the establishment of the villa and farmstead at nearby Great Bowden may indicate a movement in settlement during the Roman period and explain why the site at Airfield Farm was abandoned (Chapman, 2007, 24). This may well be the case, however as it is thought the site goes out of use by the early 1st century BC, there is a significant hiatus before the Roman villa appears.

Another nearby area closer to Waterfield Place and known as the Ridgeway, has produced Roman pottery and metal work gathered over a period of years, indicating a sizeable settlement spanning the whole of the Roman period up to and including the 4th century AD.

The Historic Environment Records show significant quantities of pottery recovered from back gardens along the Ridgeway. Most of the Roman pottery dates from the later 1st through to the 4th century and includes such fabrics as Northamptonshire grogged ware (late 1st century to mid-2nd century), and a range of shelly, oxidised, white and grey wares dating from the late 1st and 2nd centuries onwards. Samian table wares are also present, though not in large quantities. There are also mortaria from Mancetter-Hartshill and the Nene Valley, and even a Dressel 20 amphora sherd. In addition, Black Burnished wares, Nene Valley colour-coated wares and later grey ware forms are present. In one garden, the bias towards later material is noted due to the presence of significant quantities of later Nene Valley wares and the absence of Samian. Late Roman coins dating to the 4th century have also been recovered along with some ceramic building material indicating buildings with tiled roofs. There is mention of late Iron Age-early Roman transitional pottery, but the quantity is very small indeed compared to the other material. As an example, two adjacent gardens produced an assemblage of 209 sherds, only four of which were described as late Iron Age-early Roman transitional grog tempered and mixed gritted wares (Historic Environment Record, Leicestershire County Council).

Comparing the Ridgeway with Waterfield Place shows a very different type of occupation perhaps starting during the later Iron Age but continuing and growing in size during the Roman period up to and including the 4th century. It may be that one reason Waterfield Place did not continue in use through the Roman period is the expansion of the site on the Ridgeway, which is believed to have grown into a small town (Historic Environment Record, Leicestershire County Council).

### **Acknowledgements**

The author would like to thank Nick Cooper (Post-Excavation Project Manager, ULAS) for all his assistance with identifying elements of the pottery assemblage and many conversations about the progression of pottery styles through the Iron Age. Thanks also go to Heidi Addison (Finds Supervisor, ULAS) for providing the photographic images used in this report.

### ***7.3 The Early Anglo-Saxon Pottery by Nicholas J. Cooper***

A total of four sherds of Early Anglo-Saxon pottery weighing 25g was retrieved from contexts (2010) [2011] and (2012) [2013], the only features on the site attributable to this period. The pottery has been analysed in accordance with the fabric series initially developed during the analysis of material from Causeway Lane, Leicester (Blinkhorn 1999, 165) and quantified by sherd count and weight.

All four sherds come from vessels which have been manufactured in a heavily quartz sand tempered fabric (Fabric 1). The two sherds from (2010) (20g) come from two separate vessels, whilst the two from (2012) (5g) are joining and clearly come from the shoulder of a thin-bodied globular vessel. The material dates between *c.*AD450 and 650/700.

## 7.4 The Medieval Pottery by Deborah Sawday

A small assemblage of medieval and post-medieval pottery was recovered during excavations at Waterfield Place. The assemblage was located within a furrow, a post-medieval drain and was also intrusive within some mid-late Iron Age features, presumably incorporated during medieval ploughing activity.

Table 12: The medieval and later pottery by fabric/ware and sherd number by context

Context	Ware/fabric	No	Date
1079 [1080]	EA10 – Fine White Earthenware	1	Drain - mod
1108 [1109]	SW - Stoneware	1	mod
1146	EA10 – Fine White Earthenware	1	Ditch - mod
1232 [1233]	MS – Medieval Sandy	1	Ditch terminal c.1250-1500
1269 [1270]	EA1 – Earthenware 1	1	c.1500-c.1750
1289 [1290]	OW –Oxidised ware	1	Ring ditch – abraded - Roman
1760	LY1 – Lyveden/Stanion B ware	1	Furrow – glazed c.1200-1500

Site/ Parish: Waterfield Place, Market Harborough Accession No.: XA78 2011 Document Ref: market harborough2.docx Material: pot Site Type: field system, Great Bowden in med period.	Submitter: J. Browning Identifier: D. Sawday Date of Identification: 22.9.15 Method of Recovery: excavation Job Number:
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## 7.5 The Worked Stone by Rebecca Lucy Hearne

Two quern stones were recovered from separate contexts at Waterfield Place. The stones are rotary quern stones made on characteristic Millstone Grit. Their characteristics are summarised in Table 13.

Table 13: A summary of the querns from Waterfield Place

SF#	Con	Cut	Rock type	Object type	State	Comments	Original diameter (mm)	Thick (mm)
3	1578	1579	Millstone Grit	Rotary lower stone	Complete	A complete rotary quern lower stone (missing one small chip from edge). Exhibits central spindle socket c. 40 mm deep. Grinding surface worn flat and sloping from centre at c. 15° from horizontal. Underside roughly convex.	320	110
9	1772	1773	Millstone Grit	Rotary upper (?) stone	Fragment	A fragment of a rotary quern upper (?) stone. Exhibits part of curved central hopper and skirt. Grinding face worn flat and very slightly concave. Upper face flat but unworked.	320	45

### *The quern stones*

Quern SF3 is a complete rotary lower stone with an upper grinding face worn smooth and gently conical, sloping from a central spindle socket at c. 15° from horizontal. The spindle socket is c. 40 mm deep, not perforating through the stone. The conical grinding surface, the stone's dimensions and characteristics of its spindle socket suggest it is a pre-Roman Wessex- or Sussex-type beehive quern, as defined by Curwen (1938, 1941). The quern was recovered from a possible rectangular enclosure ditch terminal or pit to the north of the site ([1579]).

Quern SF9 is a fragment of a possible rotary quern upper stone partially preserving the central hopper and outer skirt. Its grinding surface is worn flat. It was an unstratified surface find, thus does not contribute any contextual information.

### *The raw materials*

The querns are both made on variable Millstone Grit. SF3 is made on a grey-pink, fairly poorly-sorted, angular- to rounded-grained, pebbly quartz gritstone. SF9 is made on a greyish, fairly well-sorted, angular- to rounded-grained, coarse quartz gritstone. These most likely derive from the Namurian sedimentary units of the Pennines and Peak District, from which grinding stones have been extracted since the early Iron Age (Peacock 1980; Ingle 1994; Roe 2000; Cool 2006).

### *Discussion*

The intentional deposition, rather than casual discard, of material culture at archaeological sites is referred to as *deliberate placement* (Hill 1995). Querns are commonly recovered from 'placed' contexts at Iron Age sites and such practice possibly indicates the stones' contemporary significance. Querns as special deposits are seen at many sites in Leicestershire within contexts including large pits, roundhouse entrances and set in floor surfaces (Marsden 1998b, Taylor et al. 2012). The recovery of SF3 from an enclosure ditch terminal seemingly adheres to the practice of deliberate placement, possibly illustrating the socioeconomic status of the quern and the enclosure itself during their use-lives (Hill 1995, Watts 2014).

The size of and occupation density at Waterfield Place makes the discovery of only two querns interesting. Many other sites in Leicestershire, however, have also exhibited quern assemblages which appear relatively small compared with the size of the site; e.g., Gimbro Farm at Castle Donington (Derrick 1999), Enderby I (Clay 1992), Hinckley (Chapman 2004), Enderby II and Huncote (Meek et al. 2004), all of which produced very few querns or none at all. Thus, it would seem that a site's occupation density or longevity does not necessarily correspond with a large quern assemblage; this may be, however, due to a larger assemblage of originally complete querns being broken up into smaller fragments before deposition, or which are otherwise unrecognised or overlooked during excavation.



## 7.6 Industrial Residues by Heidi Addison

### Introduction and Methodology

A total of 2745g of high temperature industrial residues were collected from 32 contexts: The assemblage was subject to visual examination and the material was weighed by context as detailed in

Table below. The assemblage is summarised by material in Table .

### Results

Table 14: Quantified record of material by context, subgroup (SG) and group (G)

Phase	G	SG	Context	Weight (grams)	Description
Belgic	0	1435	1433	17	Fuel ash slag Vesicular. Light grey
mid-late I.A.	0	1552	1551	14	Fuel ash slag Vesicular. Light grey
Belgic	0	1554	1553	27	Fayalite slag -dense-heavy-dark in colour
mid-late I.A.	2	1062	1061	0	Fuel ash slag. Vesicular. light grey
mid-late I.A.	2	1062	1112	1553	Bowl-shaped hearth/furnace side, c.400mm in diameter. Vesicular & vitrified
mid-late I.A.	2	1115	1114	17	Iron tap slag. Heavy/dense with flowe surface
mid-late I.A.	3	1214	1215	12	Fuel ash slag. Vesicular. Light grey
Late 1st C AD	5		1759	35	Iron tap slag
mid-late I.A.	13	1616	1623	40	Fuel ash slag Vesicular. Light grey
mid-late I.A.	15	1290	1289	3	Fuel ash slag Vesicular. Light grey
mid-late I.A.	15	1292	1291	31	Hearth/furnace lining
mid-late I.A.	15	1392	1391	0	Fuel ash slag Vesicular. Light grey
mid-late I.A.	18	1484	1483	31	Fuel ash slag Vesicular. Light grey
mid-late I.A.	18	1484	1502	6	Fuel ash slag Vesicular. Light grey
mid-late I.A.	18	1587	1586	3	Fuel ash slag Vesicular. Light grey
mid-late I.A.	19	1254	1253	32	Hearth/furnace lining-glassy- 2 fragments
mid-late I.A.	19	1254	1253	6	Fuel ash slag. Vesicular. Light grey
mid-late I.A.	20	1740	1739	13	Hearth/furnace lining-glassy
mid-late I.A.	21	1579	1578	240	Fuel ash slag Vesicular. Light grey
mid-late I.A.	21	1579	1578	43	Fired clay
mid-1st C AD	21	1581	1929	68	Hearth/furnace-lining-?lath impression-structural
Late 1st C AD	21	1912	1911	70	Fuel ash slag. Vesicular. Light grey
Late 1st C AD	21	1912	1935	3	Hearth/furnace-lining
Late 1st C AD	21	1912	2000	8	Fuel ash slag. Vesicular. Light grey
Late 1st C AD	21	2038	2037	29	Fuel ash slag. Vesicular. Light grey
Late 1st C AD	21	2058	2057	150	Hearth/furnace lining
Late 1st C AD	22	1928	1927	0	Fuel ash slag. Vesicular. Light grey
Late 1st C AD	22	1959	1925	34	Hearth/furnace lining-slight glazing
Late 1st C AD	22	1959	1958	64	Fuel ash slag. Vesicular. Light grey
mid-late I.A.	23	2020	2071	23	Hearth/furnace lining
mid-late I.A.	29	1964	1965	87	Hearth/furnace lining

Phase	G	SG	Context	Weight (grams)	Description
mid-late I.A.	29	2042	2048	65	Fuel ash slag. Vesicular. Light grey
Tree-throw			1860	2	Fuel ash slag .Vesicular. Light grey
Belgic		1554	1763	7	Fuel ash slag. Vesicular. Light grey
mid-1st C AD		1689	1688	12	Fuel ash slag Vesicular. Light grey
Total				2,745	

Table 15: Quantified list by material

Material	Weight (grams)
Bowl-shaped hearth/furnace side	1553g
Fuel ash slag	629g
Hearth/furnace lining	441g
Iron tap slag and fayalite	79g
Fired clay	43g

### Overview and Discussion

The curving side of a bowl-shaped hearth or furnace (1553g) of 400mm in diameter, was found in context (1112), G002. The heavily vitrified clay structure exhibited successive re-linings, but no evidence of metallurgical activity. Fuel ash slag (629g) was retrieved from 18 contexts and is typically amorphous, vesicular and highly vitrified, being the product of an unknown process. Hearth or furnace lining fragments (441g) were identified in nine contexts and showed extreme vitrification with some surface glazing. A small quantity of iron tap slag (52g) was recovered from contexts (1114) (G002) and (1759) (G005), and along with 27g of fayalite (iron rich) slag from context (1553) (pit SG1554), provides evidence for iron smelting, but the lack of ore and other debris suggests that it was on a small scale.

## ***7.7 Osteological Analysis by Katie Keefe and Malin Holst (York Osteoarchaeology Ltd)***

### **Introduction**

The burial was found in the top of a mid to late Iron Age curvilinear ditch, located towards the north-western end of the site. The skeleton was located close to the ditch terminal and had been heavily truncated by ploughing during the medieval period, which had resulted in the loss of its lower legs.

Radiocarbon dating places the burial within the range of 114 cal BC–30 cal AD (95% confidence Table 32 below). The inhumation appeared to be an isolated burial, interred in a mid to late Iron Age ditch. The individual lay prone in the grave, with the right hand beneath the chest and left hand under the pelvis and the right leg flexed. The burial was orientated northwest to southeast.

### *Aims and Objectives*

The aim of the skeletal analysis was to determine whether these were disarticulated human remains or individual skeletons and to determine the age, sex and stature of the remains, as well as to record and diagnose any skeletal manifestations of disease and trauma.

### *Methodology*

The skeletal remains were analysed in detail, assessing the preservation and completeness, calculating the minimum number of individuals present as well as attempting to determine the age, sex and stature of the individuals (Appendix A). All pathological lesions were recorded and described.

### **Osteological Analysis**

Osteological analysis is concerned with the determination of the identity of a skeleton, by estimating its age, sex and stature. Robusticity and non-metric traits can provide further information on the appearance and familial affinities of the individual studied. This information is essential in order to determine the prevalence of disease types and age-related changes. It is crucial for identifying gender dimorphism in occupation, lifestyle and diet, as well as the role of different age groups in society.

### *Preservation*

Skeletal preservation depends upon a number of factors, including the age and sex of the individual as well as the size, shape and robusticity of the bone. Burial environment, post-depositional disturbance and treatment following excavation can also have a considerable impact on bone condition. Preservation of human skeletal remains is assessed subjectively, depending upon the severity of bone surface erosion and post-mortem breaks, but disregarding completeness.

Preservation was assessed using a grading system of five categories: very poor, poor, moderate, good and excellent. Excellent preservation implied no bone surface erosion and very few or no breaks, whereas very poor preservation indicated complete or almost complete loss of the bone surface due to erosion and severe fragmentation.

The upper half of Skeleton 1 was largely complete, with most of the skull, vertebrae, both arms, hands and ribs surviving, however, the lower part of the skeleton was less complete, with the left leg almost entirely missing, the upper right leg and portions of the pelvis surviving. Completeness of the skeleton was approximately 70% (Table 16).

Table 16: Summary of osteological and palaeopathological results

Skeleton No	Preservation	Completeness	Age	Sex	Stature	Pathology
1	Good	70%	Old middle adult 36-45	Male	169.5 <sup>+/-</sup> 3.27	<i>Cribra Orbitalia</i> . Healed fracture to distal shaft of right ulna. Healed fracture to left fifth proximal hand phalanx. <i>Sinusitis</i> . Border shift at thoraco-lumbar border (T12 lumbarised). <i>Coxa vara</i> . Calculus. Dental abscesses. Moderate periodontal disease.

Skeleton 1 had suffered severe fragmentation of the cranium and ribs and moderate fragmentation of the limbs, however, surface detail of the surviving bone was still good.

#### *Minimum Number of Individuals*

A count of the ‘minimum number of individuals’ (MNI) recovered from a cemetery is carried out as standard procedure in osteological reports on inhumations in order to establish how many individuals are represented by the articulated and disarticulated human bones (without taking the archaeologically defined graves into account). The MNI is calculated by counting all long bone ends, as well as other larger skeletal elements recovered. The largest number of these is then taken as the MNI. The MNI is likely to be lower than the actual number of skeletons, which would have been interred on the site, but represents the minimum number of individuals, which can be scientifically proven to be present.

Only one individual could be identified, as none of the skeletal elements were duplicated.

#### *Assessment of Age*

Age was determined using standard ageing techniques, as specified in Scheuer and Black (2000a; 2000b) and Cox (2000). Age estimation relies on the presence of the pelvis and uses different stages of bone development and degeneration in order to calculate the age of an individual. Age is split into a number of categories, from foetus (up to 40 weeks in *utero*), neonate (around the time of birth), infant (newborn to one year), juvenile (1-12 years), adolescent (13-17 years), young adult (ya; 18-25 years), young middle adult (yma; 26-35 years), old middle adult (oma; 36-45 years, mature adult (ma; 46+) to adult (an individual

whose age could not be determined more accurately as over the age of seventeen). The categories defined here should perhaps be taken as a general guide to the relative physiological age of the adult, rather than being an accurate portrayal of the real chronological age; no doubt many of those aged '46+' would in actuality have been in their sixties, seventies or eighties when they died.

Morphological changes to the auricular surface and pubic symphysis (elements in the pelvis) suggested that the individual was between 36 and 45 years of age, while the dental attrition was between 26 and 35 years of age. The evidence suggests that the individual was aged 36 to 45 years since soft diet can have an effect on dental wear.

#### *Sex Determination*

Sex determination was carried out using standard osteological techniques, such as those described by Mays and Cox (2000). Assessment of sex in both males and females relies on the preservation of the skull and the pelvis and can only be carried out once sexual characteristics have developed, during late puberty and early adulthood.

Both morphological indicators and metric analysis suggested that the individual was male.

#### *Metric Analysis*

Stature depends on two main factors, heredity and environment; it can also fluctuate between chronological periods. Stature can only be established in skeletons if at least one complete and fully fused long bone is present, but preferably using the combined femur and tibia. The bone is measured on an osteometric board, and stature is then calculated using a regression formula developed upon individuals of known stature (Trotter 1970). Leg measurements were also obtained from the right femur, and used to calculate robusticity (*meric* index).

A measurement obtained from the individuals' right femur indicated that he was 169.5cm tall (5'7"). Based on estimates by Roberts and Cox (1995), the old middle adult male would have been of slightly above average height for the Iron Age.

The robusticity index revealed that the individuals' femur was *platymeric* (broad/flat).

#### *Non-Metric Traits*

Non-metric traits are additional sutures, facets, bony processes, canals and foramina, which occur in a minority of skeletons and are believed to suggest hereditary affiliation between skeletons (Saunders 1989). The origins of non-metric traits have been extensively discussed in the osteological literature and it is now thought that while most non-metric traits have genetic origins, some can be produced by factors such as mechanical stress (Kennedy 1989) or environment (Trinkhaus 1978).

A total of thirty cranial (skull) and thirty post-cranial (bones of the body and limbs) non-metric traits were selected from the osteological literature (Buikstra and Ubelaker 1994,

Finnegan 1978, Berry and Berry 1967).

Only thirteen of the thirty cranial and twenty of the thirty post-cranial non-metric traits could be observed in the skeletal remains, of which five cranial traits and six post-cranial traits were present. Skeleton 1 expressed an ossicle in his right *lambdoid* suture (small extra bone at the back of the skull). Bennett (1965) has suggested that the formation of ossicles in this suture may be related to stresses placed on the growing cranium during foetal life and early infancy. A mastoid foramen *extrasutural* and an open *posterior condylar canal* were also observed (small holes in the side and base of the skull) the individual also had a bilateral mandibular *tori* (nodule of bone in the jaw) and bilateral accessory *infraorbital* foramen (extra small hole below the eye orbits). Post-cranial traits included a bilateral double atlas facet (change in the appearance of the articulation of the first cervical vertebra), bilateral acetabular creases (defect in the articular surface of the hip socket), an Allen's fossa on the right femur and bilateral femoral plaque (alterations to the proximal femur). Mechanical strain were suggested by a third trochanter at the attachment of the *gluteus maximus* and a *hypotrochanteric fossa* on the right femur.

None of these anomalies would have affected the individual.

### *Conclusion*

Despite moderate fragmentation and the incomplete nature of the skeleton, the remains survived in a very good state of preservation. Osteological analysis revealed the remains were of an old middle adult male who would have been approximately 169.5cm tall (5'7") and thus of slightly above average height for the Iron Age. Some non-metric traits observed may suggest that he led a physically active life as an adult.

### **Pathological Analysis**

Pathological conditions (disease) can manifest themselves on the skeleton, especially when these are chronic conditions or the result of trauma to the bone. The bone elements to which muscles attach can also provide information on muscle trauma and excessive use of muscles. All bones were examined macroscopically for evidence of pathological changes.

### *Congenital Conditions*

Heredity and environment can influence the embryological development of an individual, leading to the formation of a congenital defect or anomaly (Barnes 1994). The most severe defects are often lethal, and if the baby is not miscarried or stillborn, it will usually die shortly after birth. Such severe defects are rarely seen in archaeological populations, but the less severe expressions often are, and in many of these cases, the individual affected will have been unaware of their condition. Moreover, the frequency with which these minor anomalies occur may provide information on the occurrence of the severe expressions of these defects in the population involved (*ibid*), and may provide information on maternal health (Sture 2001).

### Transitional Vertebrae

The vertebrae are divided into different groups by 'borders', and during development each

group receives instructions governing the type of vertebrae into which they will develop. If these borders move up or down the spine then a vertebra becomes incorporated into an adjacent group, receives the wrong instructions, and takes on the characteristics of the new vertebra type (Barnes 1994, 79). The resulting vertebrae are termed 'transitional vertebrae'. Border-shifts have the effect of increasing the number of vertebrae in a particular group, but do so by reducing the number present in the adjacent group. The overall number of vertebrae remains the same, which is not the case with genuine additional segments or reductions in the number of segments. A border shift at the thoraco-lumbar border was evident in Skeleton 1; the superior articular facets of the twelfth thoracic vertebra had taken on a lumbar appearance (curved antero-medially), but the vertebra retained its articulation for the twelfth rib. As a result, the eleventh thoracic vertebra had adopted the appearance of the twelfth, with curved inferior articular facets.

### Coxa Vara

*Coxa vara* is a condition where the neck of the femur is short and horizontal, so that the collo-diaphyseal angle (angle between the femoral head and the femoral shaft) is below 125 degrees. This causes the head of the femur to lie below the greater trochanter. It is not present at birth, but develops slowly due to a congenital ossification defect of the femoral neck (Salter 1999). Because of the defect, the muscles of the hip cannot hold the pelvis level during walking and the individual may have a lurching (although painless) type of limp (*ibid*). This condition was observed in the right femur of Skeleton 1.

### Metabolic Conditions

*Cribra orbitalia* is a term used to describe fine pitting in the orbital roof, which develops during childhood and often recedes during adolescence or early adulthood. Until recently, iron deficiency anaemia was the accepted cause of these lesions (Stuart-Macadam 1992), but a strong case has been made by Walker *et al.* (2009) for different types of anaemia as the causative factor. These include megaloblastic anaemia in the New World, suggesting a diet deficient in Vitamin B<sub>12</sub> (i.e. plant-based and lacking in animal products) and/or folic acid. Such dietary deficiency could have been exacerbated through

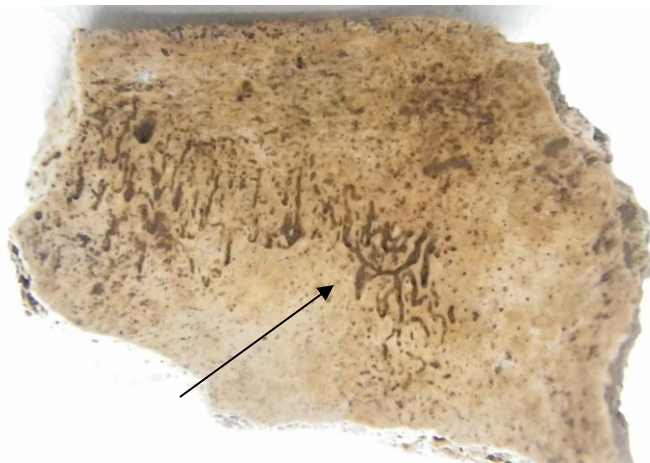


Plate 1: *Cribra orbitalia* in left orbit

poor sanitation leading to infection and infestation with gut parasites (*ibid*). In malarious areas of the Old World, haemolytic anaemia (e.g. sickle cell anaemia and thalassemia) may be important in the development of *cribra orbitalia* (*ibid*). However, for areas such as northern Europe they have proposed that *cribra orbitalia* may be more likely related to conditions such as scurvy (Vitamin C deficiency) or chronic infections (*ibid*). *Cribra orbitalia* is often used as an indicator of general stress (Lewis 2000, Roberts and Manchester 2005) and is often found associated with agricultural economies (Roberts and Cox 2003). Fine porosity and vascular impressions were evident in the antero-medial and central portions of the orbits, suggesting that the individual suffered from *cribra orbitalia* as a result of

general stress during childhood (Plate 1).

### Trauma

Evidence for trauma in archaeological populations is restricted to that visible in the skeletal remains, unless soft tissue is preserved (Roberts and Manchester 2005, 85-86). Therefore, most of the soft-tissue injuries sustained by archaeological populations will be invisible, although occasionally soft tissue injuries can be inferred through ossification of the tissues at the site of damage, known as *myositis ossificans* (*ibid*). Much of the evidence for trauma in archaeological populations focuses on fractures to the bones (Roberts and Manchester 2005, 84-85), although long standing well healed fractures may be hard to detect (Jurmain 1999, 186).

Ante-mortem injuries occurred during life and show evidence for healing, whereas peri-mortem injuries occurred around the time of death and consequently no evidence for healing will be seen. Peri-mortem injuries did not necessarily occur at the instant of death. It takes time for evidence of healing to be visible in the bone following an injury, and also for bone to lose the physical characteristics it had in life following death. Therefore ‘peri-mortem’ really refers to a three-week window either side of death (Roberts and Manchester 2005, 114). It is impossible to determine from the macroscopic appearance of the bone whether an injury occurred a week before the person died, or minutes before they died or whether the injury was caused the day or a week after they had died. Distinguishing between peri-mortem trauma and post-mortem damage can be difficult. Generally, post-mortem breaks will have a paler surface than the surrounding bone and broken edges will usually be perpendicular to the bone (Roberts and Manchester 2005, 114-116). Recent post-mortem breaks are usually easily distinguished, but breaks that occurred while the skeleton was in the burial environment and long before the skeleton was excavated may be much harder to identify as such.

Skeleton 1 had a well-healed, slightly oblique fracture to the distal shaft of his right ulna (Plate 2). Such injuries are often incurred when an individual raises their arm in order to shield the body from a blow (Wedel and Galloway 2013, 228) and are perceived to be an indicator of heightened levels of interpersonal violence (*ibid*). The radius appeared to be unaffected and may have acted as a form of splint, resulting in good apposition of the fractured ulna shaft fragments, although the fracture site was considerably thickened.



Plate 2: Fracture to distal right ulna





### Plate 3:Fractured phalanx

A possible well-remodelled fracture was also identified on the shaft of the left fifth proximal hand phalanx (Plate 3). The callous appeared to consist of well-remodelled lamellar bone with a slightly lobular appearance. As a result, the distal articulation appeared to have deviated slightly, with the medial margin projecting further distally than the lateral margin. It is not possible to determine if the two injuries occurred simultaneously or occurred at different times during the individual's life. However, both were well healed and had occurred some time before the man's death.

### *Degenerative Joint Disease*

The term joint disease encompasses a large number of conditions with different causes, which all affect the articular joints of the skeleton. Factors influencing joint disease include physical activity, occupation, workload and advancing age, which manifest as degenerative joint disease and osteoarthritis. Alternatively, joint changes may have inflammatory causes in the *spondyloarthropathies*, such as septic or rheumatoid arthritis. Different joint diseases affect the articular joints in a different way, and it is the type of lesion, together with the distribution of skeletal manifestations, which determines the diagnosis.

The most common type of joint disease observed tends to be degenerative joint disease (DJD). DJD is characterised by both bone formation (osteophytes) and bone resorption (porosity) at and around the articular surfaces of the joints, which can cause great discomfort and disability (Rogers 2000).

The old middle adult male suffered from DJD in his right temporo-mandibular joint, both shoulders and elbows and his right hand. Manifestations of the condition tended to be porosity of the joint surface and marginal osteophytes (outgrowths of bone).

The individual also exhibited moderate joint disease in all parts of the spine. The intervertebral discs are the 'shock absorbers' of the spine, but these can degenerate as a result of gradual desiccation (age-related drying), which then causes transmission of the stress from the vertebral discs to the articular facets and ligaments (Hirsh 1983, 123). Spinal osteophytes form to compensate for the constant stress that is placed on the spine as a result of human posture (Roberts and Manchester 1995, 106). Increasing stress or activity can therefore lead to increased size and prevalence of osteophytes (*ibid*).

A different condition that affects the spine is Schmorl's nodes. Schmorl's nodes are indentations in the upper and lower surfaces of the vertebral bodies, most commonly in the lower thoracic vertebrae (Hilton *et al* 1976). Schmorl's nodes can result from damage to the intervertebral discs, which then impinge onto the vertebral body surface (Rogers 2000), and may cause necrosis (death) of the surrounding tissue. Rupture of the discs will only occur if sufficient axial compressive forces are placed on the central part of the discs; axial pressure could result in herniation of the disc. Schmorl's nodes were observed on the eighth to eleventh thoracic and fourth lumbar vertebrae of Skeleton 1.

Osteoarthritis is a degenerative joint disease characterised by the deterioration of the joint cartilage, leading to exposure of the underlying bony joint surface. The great range of variation of patterns and prevalence of osteoarthritis in different populations suggests that it is not only an expression of mechanical stress, but influenced by a combination of factors, including the age profile of the population, lifestyle, food acquisition and preparation, social status, sex and general health (Larsen 1997, 179). The old middle adult male also exhibited osteoarthritis in the inferior articular process of the eleventh thoracic vertebra and the corresponding superior articular facet of the twelfth thoracic vertebra.

### *Infectious Disease*

Infectious disease can involve the skeleton, but since bone cannot respond quickly only evidence for chronic, longstanding infections can be observed in archaeological skeletal remains (Roberts and Manchester 2005, 167). Acute conditions, where the patient either recovers or dies within a short space of time will not be seen. Initial bone formation in response to infection is disorganised (woven bone), but with time, as healing takes place, woven bone is remodelled and transformed into lamellar bone. Consequently, woven bone presence indicates an infection that was active at the time the person died, whilst lamellar bone indicates an infection that had healed; a combination of both suggests a recurring or longstanding infection (*ibid*). Although specific diseases may cause new bone to be deposited on the skeleton, it is almost always impossible to diagnose these from the bones alone. Hence, evidence for infection is discussed as ‘non-specific’ infection.

One of the most common non-specific infections in past and modern populations is maxillary sinusitis. Sinusitis is characterised by the inflammation of the mucous membrane of the sinuses (cavities in the cheek bones). Acute sinusitis lasts between seven days and one month, but the condition is classed as chronic if it persists for more than three months (Merrett and Pfeiffer 2000, 304). If untreated, chronic sinusitis can persist for years, and skeletal changes occur after a number of weeks (Lewis *et al* 1995, 498). In modern groups, around 60% of patients with chronic sinusitis develop bone changes that are radiographically visible (Boocock *et al* 1995:484). Most commonly, the skeletal manifestations take the form of pitting or spicular bone formation on the floors of the sinuses. Symptoms include pain in the forehead, cheeks and eyes, together with fever and a general unwell feeling (Youngson 1992, 551). The quality of life and productivity can be greatly reduced for those suffering from sinusitis.



Infection of the maxillary sinuses can result from upper respiratory tract infections, pollution, smoke, dust, allergies, or a dental abscess that has penetrated the floor of the sinus cavity (Roberts and Manchester 2005, 174-176). Moderate sinusitis was evident in both of the skeleton’s maxillary antrums, the left of which had a penetrating abscess into the sinus from the root of the third molar, suggesting that the abscess may have caused the sinusitis in this instance.

Plate 4: Maxillary sinusitis and abscess  
(arrow), left sinus

### *Conclusion*

The skeletal evidence suggests that the old middle adult male had a mild congenital anomaly, which resulted in a change in the appearance of two of his thoracic vertebrae, however, the alterations to the man's spine were minor, and it is unlikely that he would have been aware of the condition. The individual's right femoral neck was also shortened, which may have caused him to have a lurching form of limp. General indicators of childhood stress were evident in the male's orbits.

It is likely that the chronic sinusitis in his left sinus was caused by a dental abscess that penetrated the sinus. Two well-healed fractures may have been inflicted during an act of interpersonal violence. They included a 'parry fracture' to the right ulna and a fracture of the left little finger, which were incurred ante-mortem. Degenerative changes to the joints of the shoulders, elbows hand and temporo-mandibular joint were consistent with the man's older age and would have probably caused him stiffness and reduced mobility in the affected joints.

### **Dental Health**

Analysis of the teeth from archaeological populations provides vital clues about health, diet and oral hygiene, as well as information about environmental and congenital conditions. All teeth and jaws were examined macroscopically for evidence of pathological changes.

A total of 26 of the usual 32 tooth positions were present, 22 of which still contained teeth and six loose teeth were also recovered. The remaining four teeth were lost post-mortem.

### *Calculus*

If plaque is not removed from the teeth effectively (or on a regular basis) then it can mineralise and form concretions of calculus on the tooth crowns or roots (if these are exposed), along the line of the gums (Hillson 1996, 255-257). Mineralisation of plaque can also be common when the diet is high in protein (Roberts and Manchester 2005, 71). Calculus is commonly observed in archaeological populations of all periods, although poor preservation or damage caused during cleaning can result in the loss of these deposits from the teeth (Roberts and Manchester 2005, 64).

All of the individual's maxillary teeth (16/16) had slight deposits of calculus on their buccal surfaces (side of tooth that touches the cheek), while the mandibular teeth were affected by moderate deposits of calculus on the lingual surfaces (side of tooth that touches the tongue) and slight on the buccal.

### *Periodontal Disease*

Calculus deposits in-between and around the necks of the teeth can aggravate the gums leading to inflammation of the soft tissues (gingivitis). In turn, gingivitis can progress to involve the bone itself, leading to resorption of the bone supporting the tooth, and the loss of the periodontal ligament that helps to anchor the tooth into the socket (Roberts and Manchester 2005, 73). It can be difficult to differentiate between periodontal disease and

continuous eruption (whereby the teeth maintain occlusion despite heavy wear) in skeletal material, since both result in exposure of the tooth roots (Roberts and Manchester 2005, 74).

The right maxilla and left mandible of Skeleton 1 exhibited moderate alveolar resorption, which may have been caused by the deposits of calculus, although these were only slight.

#### *Dental Abscesses*

Dental abscesses occur when bacteria enter the pulp cavity of a tooth causing inflammation and a build-up of pus at the apex of the root. Eventually, a hole forms in the surrounding bone allowing the pus to drain out and relieve the pressure. They can form as a result of dental caries, heavy wear of the teeth, damage to the teeth (e.g. fractures), or periodontal disease (Roberts and Manchester 2005).

Four abscesses were evident on the maxilla; two were located on the right side and one on the left of the maxilla and were externally draining. The fourth abscess was located on the left maxilla, at the root of the third molar and was internally draining and penetrated the maxillary sinus. A further externally draining abscess was evident on the right mandible. No obvious cause for the abscesses could be identified as none of the teeth were affected by caries.

#### *Conclusion*

Analysis of the skeleton's dentition revealed slight to moderate deposits of calculus on his teeth. Periodontal disease was moderate and may have been caused by the calculus. The individual suffered from numerous dental abscesses, one of which penetrated his maxillary sinus and was probably the cause of his chronic sinusitis.

### **Discussion and Summary**

The osteological analysis of the human remains recovered from Waterfield Place suggested that the skeleton belonged to an old middle adult male of slightly below average height for the Iron Age. Despite moderate fragmentation and the incomplete nature of the skeleton, it was possible to gain an insight into the life of the individual, as the surface preservation was good. Some non-metric traits observed may suggest that he led a physically active life as an adult.

Pathological analysis of the remains revealed minor congenital anomalies in the individual's spine, which would have had no effect. Alterations to the shape of his femoral neck, however, may have resulted in a walk with a limp. Lesions in the roof of the man's orbits are an indication of general childhood stress. He had a well-healed 'parry fracture' that may be a defence injury. Another well-healed fracture to his little finger was also identified. Degenerative changes to the individual's shoulders, elbows, spine and right hand were probably age-related. Schmorl's nodes in the individual's spine may have been caused by physical stress to the spine. It is likely that one of his dental abscesses had caused chronic sinusitis.

The individual had moderate dental health, with slight to moderate dental plaque concretions, moderate periodontal disease and numerous abscesses.

## **Acknowledgements**

York Osteoarchaeology Ltd would like to thank Jennifer Browning and Nick Cooper of University of Leicester Archaeological Services for their help and support.

## **7.8 Objects of Bone and Antler by Nicholas J. Cooper**

*(Species identification Jennifer Browning)*

Three objects of worked bone and antler were recovered, two of which are gouges and the last a fragment of polished antler, perhaps from a handle or implement.

1) SF11

G011 SG1825 Post-hole

Contexts (1824) [1825]

Gouge manufactured from a sheep tibia by slicing obliquely along the length of the shaft to remove the proximal end create a flattened point, which is missing. The distal end has a transverse perforation through. The shaft of the object is polished through wear along the entire length but noticeably more on the convex posterior surface. Broken length: 113mm, shaft width: 13mm.

2) G026 SG1460 Pit

Context (1465)

Gouge manufactured from a sheep tibia, the tip of which is missing. Similar, but smaller, than above, and lacking transverse hole through the distal end (possibly removed). Highly polished through wear along entire length, Broken length: 75mm, shaft width: 10mm.

These are common objects in larger Iron Age assemblages with 66 coming from Danebury and 70 from Maiden Castle (Sellwood 1984, 382, fig 7.33; Cunliffe and Poole 1991, 359, fig 7.32). It is likely they performed multiple functions but a high level of polish on the surfaces and particularly the tip, is common to most which suggest contact with skin in handling and probably thread or hide for the tips. Acting as a pin beater to compact the weft threads during weaving is a possibility but does not require the perforation, whilst the use as a shuttle would explain the perforation but would have caused wear and polish around the sides of the distal end which protrude. The dating from Danebury indicates these objects were in use throughout the life of the fort from Ceramic Phase 1 to Ceramic Phase 7/8, c. 550-50 BC

3) G016 SG1830 Shallow ditch

Context (1829)

Fragment of red deer antler which appears to come from the beam, perhaps at the junction with a tine, as one edge is curved. The surface has been removed and then highly polished. The two long sides are smoothly curving cuts whilst one short end has the edge of a rectangular cut out on one side, the face of which is polished, and the other has a downward curving surface which is also polished. Broken length: 75mm, width: 27mm.

This fragment clearly comes from an implement which saw a lot of use, judging by the polish, and whilst a comb is one possibility, the long edges would usually be more rounded and the rectangular cut out on one side is anomalous.

## **7.9 The Animal Bone by Jennifer Browning**

### **Introduction**

A total of 2791 animal bone fragments was recovered during hand excavation, with further fragments retrieved during sieving of environmental samples. The dominant phase of archaeological activity dated from the middle to the late Iron Age, extending into the late 1st century AD.

### **Methodology**

Specimens were identified with reference to comparative modern and ancient skeletal material held at the School of Archaeology and Ancient History, University of Leicester. A *pro forma* spreadsheet was used for recording data on preservation, taxa, bone element, state of epiphyseal fusion and completeness to elicit information on species proportions, skeletal representation, age and taphonomy. Where possible, the anatomical parts present for each skeletal element were recorded using the 'zones' defined by Serjeantson (1996), with additional zones ascribed to mandibles based on Dobney and Reilly (1988). Surface preservation was assessed after Harland *et al* (2003). The occurrence of burning, gnawing and pathologies was noted and described. Butchery was recorded using simple coding and description. Joining fragments were re-assembled and the resulting specimen counted as a single fragment, although a record of the original number of fragments was retained.

Identifiable fragments were considered to be those that could be confidently assigned to element and taxon. Undiagnostic shaft and skull fragments and incomplete vertebrae and ribs were categorised as large, medium or small mammal or indeterminate bird. If even such basic identification was impossible, the fragments were classed as indeterminate.

### **Provenance and Dating**

The bones were recovered primarily from ditches, gullies, ring gullies, post-holes and pits dating from the middle to late Iron Age, with further activity into the 1st century AD. It is evident that the site was occupied over a long period of time; a sheep skeleton was radiocarbon-dated to the Late Bronze Age (SUERC, this report), hinting that activity may have started very early. This is reflected by the dense concentration of features, particularly in the southern part of the site. Although they could not be separated out into distinct phases of activity across the whole site, there was a succession of events in particular areas. A general move from unenclosed roundhouse dwellings to roundhouses within enclosures and finally stock enclosures is suspected. Pottery indicates that the main phases of activity ceased after the end of the first century AD. Two Saxon post-holes on the site contained a very small quantity of bone.

The assemblage was divided into four main phases based on pottery dates: mid-late Iron Age (phase 2-4); Belgic (phase 5); mid-1st century (phase 6) and late 1st-century (phase 7).

Unsurprisingly, the majority of bones were recovered from ditches and gullies (49%), in keeping with the nature of the archaeology. Ring gullies and ring ditches accounted for 27% of the assemblage and 13% was recovered from pits. The remaining 11% was from other features such as post-holes, furrows and depressions. The assemblage was not concentrated within any one group but was distributed across the site in smaller quantities. Eight sub-groups of mid-late Iron Age date contained sizeable groups of material, ranging between 50 and 100 fragments. Three of these were from the roundhouses (G012 and G013) in the square enclosure. Two were from G015, a large and long-lived enclosure. No sub-groups in Phases 5 or 6 (Belgic and mid-1st century AD) contained over 50 fragments. However one late 1st century group, SG1959, part of a remodelled enclosure ditch, contained 63 fragments. All

these groups were found to contain a mixture of species and elements, representing an accumulation of occupational debris, rather than denoting specific activities.

Table 17: Sub-groups containing over 50 bone fragments

Phase		Feature	2-4	5	6	7	Total
<b>G</b>	<b>SG</b>						
<b>6</b>	<b>1280</b>	Ring gully	99				99
<b>16</b>	<b>1830</b>	Sub-rectangular enclosure	90				90
<b>13</b>	<b>1616</b>	Ring gully	85				85
<b>13</b>	<b>1620</b>	Short linear gully	76				76
<b>22</b>	<b>1959</b>	Remodelled enclosure ditch				63	63
<b>7</b>	<b>1736</b>	Ring gully	59				59
<b>15</b>	<b>1290</b>	Ditch	58				58
<b>12</b>	<b>1614</b>	Ring gully	53				53
-	<b>1554</b>	pit	9	43			52
<b>15</b>	<b>1292</b>	ditch	50				50

### *Preservation and Taphonomy*

The bones exhibited both old and modern breakage and noting the presence of conjoining fragments reduced the total from 3099 to 2791 specimens. The assemblage was fairly fragmented; there were 46 complete bones (1.6%). These were mostly phalanges and tarsals-compact elements that are often discarded early in the butchery process. A high proportion of the assemblage (48%) consisted of undiagnostic shaft fragments, there were few epiphyses and 4% of the total assemblage consisted of loose teeth. The superficial geology is mid Pleistocene Diamicton Till, manifesting as silty-clay. The contraction and expansion of the clay subsoil will certainly have contributed to fragmentation in the assemblage.

The surface condition was assessed, following Harland et al (2003) (Table ) and for the majority of bones (55%) was classed as good, permitting examination for butchery marks and other modifications. No bones were considered to be in excellent condition however, only 1% was poorly preserved; flaking and abrasion may have obliterated some surface features such as fine cut marks. The surface condition of the remainder of specimens (44%) was between these two stages and classed as fair.

Table 18: Preservation of the assemblage (after Harland et al 2003)

Preservation	% of assemblage
good	55%
fair	44%
poor	1%
<b>Total</b>	<b>100%</b>

Gnawing was observed on 6% of bones in the assemblage and indicates the presence of dogs and other scavengers on the site. Gnawed bones were distributed across the site with no particular concentrations noted. Burning was recorded on 65 (3%) fragments in the mid-late Iron Age assemblage and 10 (7%) of the Belgic assemblage. They were widely distributed across features and tended to be found alongside unburnt bones, suggesting that bones derived from a mixture of sources. Charred bones were most common with calcined bones



less so and scorched bones (often diagnostic) were rarest. Scorched bones could have been exposed to flames during cooking activities, while charred and calcined bones indicate exposure to temperatures in excess of those likely to be encountered during normal cooking activities. Most calcined fragments were very small and not diagnostic to element or taxon; these may represent hearth sweeping incorporated into the features.

### ***Quantity and Taxa***

The proportion of identifiable fragments was low but fairly typical for a site of these periods and location (33%; n=929). The combined total of cattle, sheep and pig bones (n=892) is sufficient to have potential for reliable analysis. The majority of the assemblage, 87%, was recovered from mid-late Iron Age features. Transitional features produced 351 bones (13%); while a single bone (a sheep pelvis) was retrieved from an early Saxon post-hole.

Table 19: The chronological distribution of the assemblage, excluding bones from medieval furrows and post-medieval land-drains

<b>Taxa</b>	<b>2-4 Mid-late Iron Age</b>	<b>5 Belgic</b>	<b>6 Mid 1st</b>	<b>7 Late 1st</b>	<b>8 Saxon</b>	<b>Total</b>
cattle	358	23	6	28		415
sheep/goat	317	14	10	24	1	366
sheep	3					3
pig	94	6	2	4		107
equid	21	2		1		24
dog	6					6
red deer	3					3
cf duck	1					1
duck sp.	1					1
goose	1					1
rat-size	1					1
lge mml	540	29	6	47		622
med mml	879	44	20	62		1005
indeterminate	206	19	1	3		229
<b>Grand Total</b>	<b>2431</b>	<b>137</b>	<b>45</b>	<b>169</b>	<b>1</b>	<b>2783</b>

There was moderate species diversity in the assemblage. Cattle, sheep/goat, pig, horse, red deer, dog, goose and duck were present among the hand-recovered material (Table ). Cattle and sheep/goat were most frequently recovered. Although sheep and goat bones were mostly indistinguishable from each other, only sheep bones were positively identified, primarily through cranial fragments and the morphology of metapodials (e.g. Boessneck et al 1969). The term ‘sheep’ will therefore be used throughout the remainder of this report, although it is acknowledged that this category may include some unrecognised goat bones. Pig bones were considerably less common than sheep or cattle but still recovered in fairly substantial numbers. The characteristics of the cattle, sheep and pig assemblages will be considered in greater detail below.

Other taxa are only represented by a small number of elements, representing only 4% of the identified bones. Equid bones are probably from horse and were fairly infrequent, occurring in small numbers from fourteen different groups across the site. Mandibular fragments and loose cheekteeth were most frequent, while post-cranial bones, such as radius, scapula and ulna were recovered sporadically. An axis appeared to be chopped through the centre (although it was possible that this damage resulted during excavation). No unfused horse

bones were noted and most of the other evidence indicated that the animals were mature. A worn incisor may have been from an animal aged about 18 years, while a complete mandible had incisor wear indicating an age of about 8 years (after Getty 1975). The presence of canine teeth suggested the mandible was from a male. A metatarsal exhibited eburnation on its distal articulation, therefore likely to be associated with an older animal.

No post-cranial deer bones were recovered, however three fragments of antler were identified in the Iron Age assemblage; size and morphology indicated red deer. One antler still retained the burr, indicating that the antler had been collected after it was naturally shed, rather than taken from a hunted animal. Two fragments were worked; one of these exhibited polishing (Cooper, this report).

Dog bones were rare in the mid-late Iron Age assemblage but there may be significance in their placement: for example a skull, complete with mandibles, was deposited in a pit located between G031 and G010 (Figure 21). A further mandible fragment was recovered from a ditch in G031. Fragments identified as a scapula and a radius, were recovered from contexts of G015 and G018 respectively. All the bones appeared adult. No dog bones were recovered among the later assemblages.

Bird bones were very rare and were recovered from just three contexts across the site. None were complete, two were tentatively identified as duck family (comparing to mallard and teal/garganey), while the third was a humerus fragment of goose. Domestic fowl is usually the most common bird species in similar assemblages but was absent in this case.

### ***Sieved Samples***

The coarse fraction from 73 different samples produced bone fragments and was scanned to look for small taxa, including mammals, birds, amphibians and fish. Specimens from the Iron Age and Roman material mostly comprised small undiagnostic fragments of mammal bone, both burnt and unburnt. Identified fragment consisted of further sheep and pig bones and tooth enamel. No fish or amphibians were observed and there was only one (undiagnostic) bird bone fragment. A bone tentatively identified as house mouse was recovered from the gully of roundhouse G013, and a mouse mandible from a pit in G36. Field vole and water vole were identified on the site, occurring sporadically in various groups.

### ***The Main Domesticates***

The main domestic mammals, cattle, sheep and pig, represent 96% of the identified assemblage and have therefore been analysed in more detail below. Looking at the mid-late Iron Age assemblage, the relative proportions of cattle, sheep and pig bones was calculated using two different quantification methods, which produced slightly different results (Figure 52). A simple count of the numbers of bones attributable to each taxa, termed 'Number of Identified Specimens (NISP)', suggests relatively even numbers of cattle and sheep. However, an estimation of the Minimum Number of Individuals (MNI), suggests that sheep were present in significantly greater numbers. Pig was the least common species in both counts, comprising between 11% and 15% of the total. Each method has limitations; NISP tends to overestimate large mammals, whose bones fragment into more pieces than their smaller counterparts, while MNI can overemphasise less frequent species. MNI was calculated using the most frequently occurring zone of the most common bone element. MNE (Minimum Number of Elements) was used to assess the representation of skeletal elements (after Serjeantson 1991). Both these methods reduce the risk of counting fragmented bones multiple times.

There were no more than 60 identified bones for each subsequent phase, which renders quantification rather unreliable. In each case there are considerably more cattle and sheep than pig bones but the proportion of the two main species was variable.

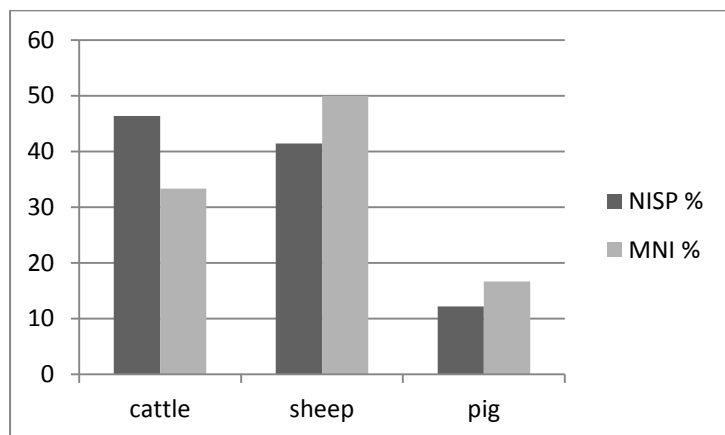


Figure 52: Relative proportions of cattle, sheep and pig from Iron Age deposits using different quantification methods: Number of Identified Specimens (NISP) and Minimum Number of Individuals (MNI)

### Age Structure

Analysis of age at death is usually carried out using tooth eruption and wear as a guide, supplemented by the state of epiphyseal fusion of post-cranial bones. Epiphyseal fusion can only offer information on age at death up to skeletal maturity, whereas toothwear can provide data throughout adulthood as well. The porosity of juvenile bones means that they are more easily destroyed than those of adults and are likely to be under-represented.

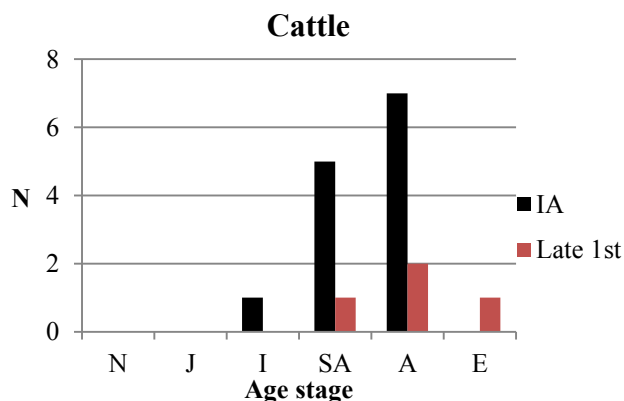


Figure 53: Cattle toothwear age categories (after O'Connor 2003, table 31) Key: N=neonatal; J=juvenile; I=immature; SA=subadult; A=adult; E=elderly )

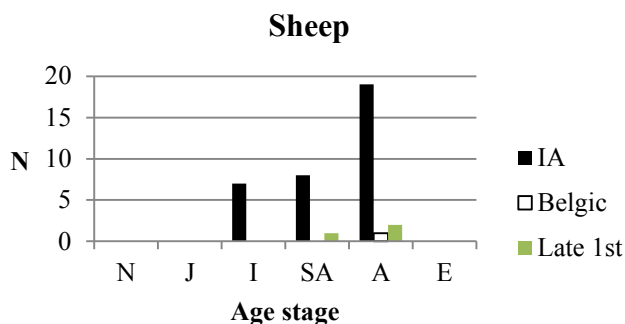


Figure 54: Sheep toothwear age categories (after O'Connor 2003, table 31) Key as previous figure

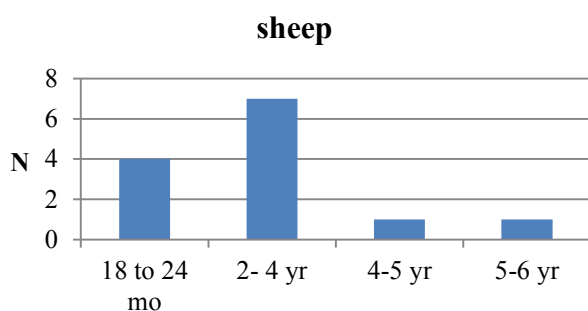


Figure 55: Refinement of sheep toothwear ages, based on the wear combination of the first and second molar following Moran and O'Connor (1994)

Mid-late Iron Age features produced ageable teeth and mandibles from 34 sheep/goat specimens, 13 cattle and two pigs (Table). A small number of cattle and sheep mandibles from later phases of activity were also available. Only two age-able pig mandibles were recovered and both were from younger animals with the first molar unerupted or in early stages of wear, suggesting animals aged between c. 6 and 12 months (Hillson 2005, 233). This was broadly confirmed by the evidence from epiphyseal fusion; there were very few examples of bones fusing after 12 months (Table). There was little evidence for male/female ratios in the assemblage, however of five pig lower canine fragments, four were from males and one was female. This may, however, reflect the distinctiveness of the male canine tooth. The presence of these teeth does, however, indicate that adult pigs were present on site, despite lack of representation in the other data.

The cattle mandibles show increasing mortality rates among sub-adult and adult animals (Figure 53). The bulk of the adult casualties were from the older part of the category, which was defined by significant wear on the distal column of the third molar. However, it is only among the early Roman mandibles that elderly animals are present. It is therefore likely that cattle were kept for traction but also eaten as mature beef. The picture suggested by the post-cranial bones showed little evidence for slaughter before the age of 18 months but 23% of bones fusing between two and three years of age were unfused. This increased to 70% among animals aged between 36 and 42 months, suggesting high levels of slaughter before animals reached skeletal maturity.

The pattern for sheep mandibles was similar to cattle, also exhibiting rising mortality in the immature and sub-adult categories but peaking among adult animals (Figure 54). Refinement of this data was attempted following Moran and O'Connor (1994), using the combination of wear stages on the first and second molars (Figure 55). This suggested a mortality peak

among two to four year olds, with fewer older animals, possibly suggesting that they were primarily exploited for meat. The epiphyseal fusion data for the Iron Age material suggested some mortality below the age of 10 months (20% of bones which fuse at this stage were unfused), continuing to increase until skeletal maturity. This indicates a slightly younger slaughter age for sheep compared with cattle and correlates with the dental data, suggesting an emphasis on meat.

The mandibular data provided little evidence for neonatal or juvenile animals (after O'Connor 2003, table 31). However, despite the lack of evidence from toothwear, bones of small size and with the porous texture characteristic of very young animals were recovered from a number of contexts across site (cattle=7; sheep=10; pig=6). The bones were distributed widely in fourteen groups across the site, including G013 (roundhouse; SG1720 (a pit near G021); SG1233 and G036. The presence of these juvenile and infant bones implies that all three of the main domestic mammals were bred at the site.

### ***Skeletal Representation***

Skeletal representation was briefly assessed for the Iron Age assemblage by calculating the Minimum Number of Elements (MNE) based on the zones recorded (Serjeantson 1996). This reduced the risk of highly fragmented bones being counted multiple times and skewing the results. The range of elements recovered from each phase is listed in Table 34. Loose teeth comprise 16% of the identified fragments, reflecting their relative durability and ease of identification compared with post-cranial bones. However, the proportion of loose teeth from a similar site at Oakham was 43% (Browning 2015), which indicates comparatively better preservation in the current assemblage.

In the Iron Age assemblage, all regions of the cattle and sheep skeletons were represented, indicating that animals were raised, processed and consumed on site. In both cases, the most common elements were the mandible, radius, tibia and metapodials, in addition to the sheep humerus. This was particularly the case with sheep, where the high representation of the skull was inflated by the number of mandibles recovered (n=24). These are all robust elements suggesting that the surviving assemblage has been strongly influenced by preservation. The pig carcass was not so well-represented but all anatomical regions were present.

Figure 56 shows this data in broader anatomical categories, which have been standardised to reflect the number of times that the elements naturally occur in the body. While this doesn't provide fine detail, it does suggest which parts of the body are under-represented. It is usual for ribs, vertebrae and phalanges to be less well-represented due to issues of fragmentation and lack of recovery, in the case of phalanges. The cattle carcass was fairly evenly represented, whereas skull and forelimbs were more prominent for sheep.

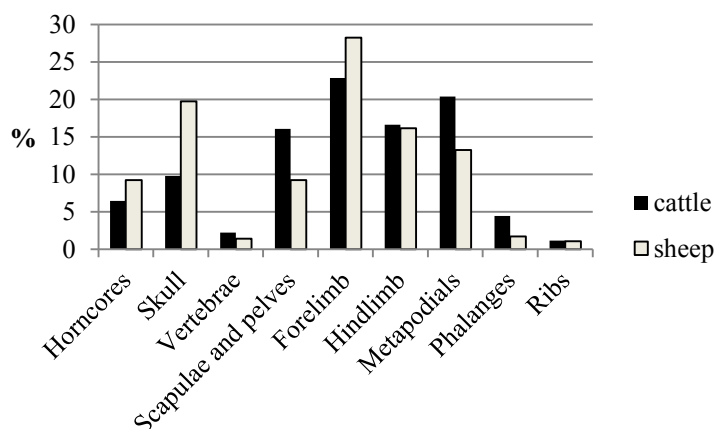


Figure 56: Anatomical representation calculated from MNE

### ***Articulated Bones***

On a basic level, the presence of articulated bone groups, often termed ABGs or ‘special deposits’, indicates archaeological contexts which have not been extensively re-worked or disturbed. Both paired and consecutive bones have been grouped in this category. In terms of interpretation, they can result from the purposeful burial of whole or partial animals, including pets, sacrifices, ritual deposits or natural mortalities. More prosaically, they can indicate butchery or craft waste. The type of animal, parts represented, butchery marks, the attitude of deposition and any associated finds are all aspects that might influence the interpretation. At Waterfield Place, the majority of articulated elements are from the feet and are therefore likely to have been separated early in the butchery process and thus remained together. The pig bones from SG1401 and the lamb bones in SG1720 are also likely to have a prosaic explanation. The dog’s head deposited in SG1260 may be of greater significance, particularly since dogs are very rare on the rest of the site. The skull and mandibles were in good condition, with adult dentition. Interestingly all four canines, appear to have lost their tips, the smooth surfaces indicating that this occurred during life, possibly relating to chewing behaviours.

A cow foot in SG1620 had fine cut marks associated with skinning and must have derived from a processed cattle carcass with the hide removed. The location of this bone group is curious, as it is located within a gully associated with a roundhouse entrance (G012/013) and is not perhaps the expected place to deposit the partial limb, unless butchery or tanning activities were taking place in this location.

A pit SG1597 was located in the south-east corner of enclosure G0015 and contained a largely complete sheep skeleton. It was laid on its left side, orientated roughly east-west, with its legs folded and the head bent backwards overlooking its spine, presumably to fit it into the pit. There was little space in the pit around the burial and the only other finds were flint, which may be residual. The skull was represented by a fragment of parietal bone and the base of the horncore and only the left mandible was present. Most of the vertebra and spine was recovered in a fragmented state. However, all the major limb bones were represented. Most of the 1st phalanges were hand-recovered but further 2nd and 3rd phalanges were recovered from the sieved samples. A left metacarpal had ossified ligaments on the proximal lateral/caudal border.

The state of epiphyseal fusion suggested that the animal was aged approximately 30-36 months at death. Bones that fuse around 30-36 months were fused or fusing (the proximal

ulna was fusing and the proximal femur and proximal calcaneum were fused- after Silver 1969). The dentition indicated a younger age, with the third molar in the process of eruption, therefore indicating an age of less than c. 24 months (Moran and O'Connor (1994). However, both tooth eruption ages and dates of epiphyseal closure are known to be variable (Hillson 2005, 231). There were no obvious butchery marks on the animal. C14 dating produced the result of BP3018+-31, dating the sheep to the late Bronze Age. In view of the lack of other evidence, it is hard to interpret this burial, which certainly represents the deliberate deposition of an unconsumed animal. Whether it was natural mortality or the product of ritual activity is hard to say.

Table 20: Articulated bone groups within the assemblage

Phase	SG	Feature	context	Taxa	Elements	Butchery	Comments
1	1597	pit	1595	sheep	Almost complete skeleton	No	Buried complete in a pit
2-4	2003	post-hole	2002	cattle	1st and 2nd phalanx	No	Partial, articulated toe.
2-4	1401	Pit	1402	pig	Radius and ulna	No	Partial forelimb
2-4	1459	post-hole	1458	sheep	1st and 2nd phalanx	No	Toe
2-4	1620	Short gully	1618	cattle	Tarsals, metatarsal, 1st, 2nd and 3rd phalanges	Yes, skinning marks	Lower leg and foot
2-4	1720	pit	1717	sheep	Pair of neonatal/infant metatarsal	No	Representing part of lamb
2-4	1260	Pit	1260	dog	Skull and mandibles	No	Head, at base of pit.

### ***Butchery***

Butchery was recorded on 132 bones (5%) of the total Iron Age assemblage and included fine knife cuts, as well as heavier chopping marks produced by a cleaver or similar. Cattle bones were most affected, which is unsurprising in view of its status as a major food animal, with a large carcass requiring significant processing to reduce it to manageable portions.

Unusually for an Iron Age assemblage, cattle bones more frequently exhibited chops than cut marks. All of the major limb bones were chopped and there was particular emphasis on the tibia, pelvis, and radius, suggesting that portioning and dismemberment was the main purpose. Scapula and mandible were also common locations for butchery; a mixture of cut and chop marks indicated disarticulation and filleting, as well as portioning. Some elements, such as phalanges, metapodials, astragalus and other tarsals had knife marks resulting from skinning and disarticulation of these less meaty portions. Ribs had many cut marks, indicating division of the rib slab and filleting of the meat.

There were fewer butchery marks on pig and sheep bones, reflecting their smaller body size. On the pig skeleton butchery marks were observed on only seven different bones, insufficient to suggest a butchery patterns. By far, the most common location in the sheep skeleton was the pelvis, which alone accounted for 38% of butchery marks. These were predominantly inflicted with a cleaver. The tibia was also chopped through the distal shaft. Both cattle and sheep horncores were chopped from the skull, the horn itself was evidently utilised. Skinning marks were noted on a sheep phalanx and skinning/filleting marks on a pig skull.

Subsequent phases showed a similar pattern, although far fewer bones were affected, due to the smaller assemblage size.

### ***Measurements***

Measurements taken on bones and teeth are recorded in Table 36-Table 38. A brief perusal suggests little variation in the size of the animals on the site. Few bones were complete enough to provide greatest length measurements, however it was possible to calculate a small

number of shoulder heights (Table ). This is not a statistically viable sample but does indicate that the animals are of the small, unimproved variety expected at a site of this type.

Table 20: Greatest length measurements and withers height estimations.

Phase	Cntxt	G	Taxon	Element	GL (mm)	Multiplication factor*	Withers height (m)
M-L Iron Age	1387	44	sheep	metacarpal	118.7	4.89	0.58
M-L Iron Age	1294	15	sheep	humerus	132	4.28	0.56
M-L Iron Age	1620	13	cattle	metatarsal	212	5.28	1.12
Belgic	1554		cattle	humerus	263	4.14	1.08
Belgic	1554		equid	femur	361	3.51	1.27

\*multiplication factors quoted sheep= Teichert (1975); cattle= Matolcsi (quoted in von den Driesch 1974); equid = Kiesewalter 1888

### *Pathologies*

There were 23 bones with pathological changes in the assemblage; 20 of these were from mid-late Iron Age features, comprising less than 1% of the assemblage, with the remaining three from Belgic features. This proportion is fairly typical of most archaeological assemblages. Four dental abnormalities, such as abnormal wear or malocclusion were noted and there were also two instances of calculus, which bore a metallic sheen (although this may be dietary rather than strictly pathological). Occipital perforations, a non-metric trait, were observed on a cattle skull fragment. The majority of pathologies were exostosis or abnormal bone formation, which would have had a variety of causes, from infections or periodontal disease to trauma.

### *Discussion*

An assemblage of animal bones was recovered during archaeological excavations of a settlement of middle to late Iron Age date, at Market Harborough, with activity extending into the 1st century AD. Early Saxon post-holes and medieval furrows produced a very small amount of bone. Almost 90% of the assemblage was recovered from features of mid-late Iron Age date and therefore the following discussion is focused predominantly on these bones.

A typical range of domestic animals for a site of this type and time period was recovered; cattle, sheep and pig account for 96% of the assemblage. Other taxa, including horse, deer, dog and duck are represented by a small number of bones. Across the assemblage cattle and sheep were the most common species, with pig bones third. While for many sites in southern England a predominance of sheep is usual in this period, more variable regimes of cattle and sheep husbandry are seen in the midlands and east (Hambleton 1999, 89). The relative proportions of cattle and sheep is broadly even, which contrasts with national trends but is in keeping with regional results from sites such as Enderby, Elms Farm and Manor Farm (Gouldwell 1992; Charles 2000 and Browning 2011). Cattle bones were marginally more frequent than sheep/goat based on fragment number (NISP) but MNI redresses this balance, suggesting that sheep were of importance in the mid-late Iron Age; these mixed results may indicate the economic and dietary basis of the site but may also reflect better survival rates for larger bones. However, despite the apparent greater numbers of sheep, the prevalence of beef should not be underestimated, in view of the larger bovid body size.

The pig bones recovered suggested that pigs were generally slaughtered at a young age at the site. Cattle were slaughtered as adults, however, often not fully mature, suggesting beef production as well as traction. Sheep exhibited higher levels of mortality in the sub-adult and younger adult stages, also strongly indicative of slaughter for meat, rather than wool or other secondary product. Similar patterns have been observed at other Iron Age sites, sheep often



slaughtered before they were fully grown (Albarella 2007, 394). However, juvenile bones may be under-represented, since they are more susceptible to fragmentation in adverse burial conditions. The age profiles hint at a mixed husbandry regime rather than emphasis on one product.

The equid bones almost certainly belonged to horse and were the fourth most common taxa. Only adults were from adults. A withers height of 1.27m (12.2 hands) from a bone of Belgic date (c. 20-60AD) indicated an animal of a pony-like stature, typical of the period.

The occasional exploitation of wild resources is indicated by three fragments of deer antler intended for artefact manufacture; one was worked with polishing associated with use and another was sawn. There was no evidence for venison consumption, in keeping with many sites of this period, e.g. Manor Farm, Humberstone (Browning 2011, 121) and Earls Barton, Northamptonshire, (Deighton 2005, 23), which suggests that wild animals were only rarely eaten.

Bird bones are very rare in the assemblage and are confined to duck bones in single figures and a single element of goose. Processing of bulk environmental samples mainly produced smaller elements from sheep and pigs, likely to have been missed during hand-excavation. Small numbers of rodent bones, such as field vole, water vole and mice were also recovered. The mice are likely to have exploited the food opportunities of the human settlement.

Cattle bones were most commonly butchered. Butchery was carried out with knife and cleaver and appeared to be focused on reducing the carcass into manageable sizes for consumption however skinning and filleting marks were also present.

Unfortunately the small size of the later assemblages makes it difficult to perceive any temporal differences in husbandry practices or diet. The species range and variety, age and butchery profiles all appear broadly similar to the mid-late Iron Age assemblage. Articulated/associated bone groups were recorded from a number of different Iron Age features. For the most part these are thought to represent butchery waste; however the placement of a dog skull and mandible in the base of a pit may have significance beyond the ordinary, since dog remains are often found in ritual contexts (Wait 1985, 132). The deposition was made in a pit associated with the enclosure containing a human burial, hinting at unusual activities in this area.

A sheep burial found within its own pit was radiocarbon- dated to the late Bronze Age. The animal was not quite fully-grown, horned and was not butchered. It was the only known deposition of this period on the site and was not accompanied by any other finds, making interpretation problematic.

See Appendix for further tables containing raw data

## ***7.10 The Charred Plant Remains by Rachel Small***

### **Introduction**

This report presents the analysis of the charred plant remains recovered from samples taken during excavation at Waterfield Place, Market Harborough. Charred plant remains, which may include cereal grains, chaff and seeds, provide evidence for past food production, consumption, agricultural practice and environment.

### **Previous work**

An evaluation was carried out at Waterfield Place in 2011 and revealed extensive Iron Age occupation; 17 samples were taken from ditches, gullies, pits and post-holes. The samples were assessed and it was concluded that the overall potential for charred plant remains from the site was 'good'. Ten of the samples were regarded as having 'high' potential; these samples were predominantly from ditches and gullies (Radini 2011).

### **Dating and provenance**

There was evidence for a succession of oval and rectangular enclosures, some of which had associated buildings, indicating several phases of activity from the mid-late Iron Age to the early Roman period.

Taking the previous results into consideration, an extensive sampling strategy was implemented for the 2014 excavation. Samples were selected on a judgmental basis; generally they were taken from discrete dateable contexts which were believed to have good potential (e.g. charcoal was visible). However, it was ensured that a representative number of samples were taken from each area, feature type and phase. Where it was possible three buckets (equivalent to 30 litres of soil) were taken for each sample.

In total, 91 samples were taken for the recovery of charred plant remains. The vast majority of samples (95.6%) dated to the mid-late Iron Age. Sample 3 dated to the Belgic period and samples 27, 33 and 91 dated to the early Roman period.

### **Method**

All of the samples were dry (that is none of them were waterlogged) and most were of a silty-clay nature. They were processed by wet sieving and this was carried out in a York tank using a 0.5mm mesh with flotation into a 0.3mm mesh sieve. The flotation fractions (flots) were transferred into plastic boxes and left to air dry; they were then sorted for plant remains using a x10-40 stereo microscope. The residues were air dried and the fractions over 4mm sorted for all finds. Artefacts, such as animal bone, were passed to the appropriate specialist.

For eight samples (details given in table 1) a litre was bucket floated to establish the presence and relative abundance of any species that were not in the wet sieved samples. There was no apparent difference between the two, confirming that wet sieving was a suitable technique.

An initial assessment was carried out involving wet-sieving one part of each sample. The number of remains for each category (grain, chaff, seeds and other) were recorded. An expected number of remains if all parts were to be processed was then calculated and if this was near to or exceeded 50 items the sample was selected for analysis. Fifty items is

considered the minimum needed for a reliable interpretation of crop processing activities (pers. comm. Monckton 2015).

Further parts of samples selected for analysis were sieved to obtain a minimum of 50 items. Fine fractions were re-floated and sorted to ensure that the charred plant remains collected were representative; for example, glume bases with clay in the keel are unlikely to float the first time. The charred plant remains from the flot, reflat and coarse fractions were identified and an overall count given. Identifications were made by comparison to modern reference material available at ULAS and plant names follow Stace (1991). Regarding the quantification of charred plant remains, for grains, only the embryo or embryo scar was counted, and for chaff, each glume base was counted as one. Seeds were counted as one, even when broken, with the exception of large weed seeds fragments that clearly represented parts of the same seed.

For these samples, ratios of remains were calculated following Van der Veen (2007). By comparing the relative proportions of charred plant remains specific crop processing activities can be inferred because different stages produce different residues. This is based on the fact that the preparation of glume wheat crops for consumption in the Iron Age and Roman period followed a pattern: firstly, the wheat would be harvested and then put through initial processing to remove straw and weeds before storage. The ear of glume wheat breaks into spikelets which consist of two glumes containing two grains and the cereal can be stored in this form. Small amounts would be taken out of storage on a day-to-day basis and go through a second stage of processing to prepare them for consumption. This requires parching and pounding to free the grain; followed by winnowing to remove light chaff fragments, coarse sieving to remove large weed seeds and fine sieving to remove glume bases and small weeds. Finally hand sorting would be undertaken to remove any weed seeds left which were similar in size to the grain (Monckton and Hill 2011: 130).

## Results

### *Taphonomy*

It is firstly important to consider taphonomy - the environmental conditions affecting the preservation of remains. The majority of samples contained modern rootlets (90.1%) and burrowing snails (78%). Occasional un-charred seeds were identified, for example ivy-leaved speedwell (*Veronica hederifolia* L.), elder (*Sambucus nigra* L.) and bramble (*Rubus* spp.). These species are known to survive in archaeological samples but are more likely to be intrusive. The amount of modern rootlets, snails and uncharred seeds in each sample was low and therefore the level of disturbance to the contexts can be considered minimal.

### *Mid-late Iron Age*

The majority of samples contained few charred plant remains; 95.4% of samples contained five items or less (table 11 appendix). Remains were poorly-preserved, being intensively burnt and distorted. Twelve samples were likely to contain 50 items or more and were therefore analysed (table 1), and sample 59 had a particularly high quantity of remains.

### *Species*

Grain was present in 69.7% of samples that contained charred plant remains. Glume wheat grains (*Triticum dicoccum/spelta* L.) were most common in the assemblage. Barley grains (*Hordeum vulgare* L.) were present and some were twisted (from the fertile lateral floret)

indicating that six-row barley was present. The hull had been removed from most of the barley grains suggesting it was intended for consumption rather than animal fodder and brewing. Some of the cereal/large grass grains were likely to be wild or cultivated oat (*Avena* spp.).

Chaff was present in 57.9% of samples that contained charred plant remains. In general, *Triticum* spp. chaff was very fragmented and therefore it was difficult to identify to species. No emmer wheat (*Triticum dicoccum* L.) glume bases were identified, only spelt wheat (*Triticum spelta* L.). It can therefore be concluded the spelt wheat was the dominant crop which is the norm for Iron Age sites. A small number of barley rachis internodes were identified and straw culm nodes.

Charred hazel nut shell (*Corylus avellana* L.), sloe stones (*Prunus spinosa* L.) and hawthorn pips (*Crataegus monogyna* L.) were identified in the assemblage suggesting that wild foods were being collected and consumed. Seeds of cruciferous vegetables (*Brassica* spp.) were present and these could have been cultivated but are also prolific weeds of arable fields. Many of the wild plants identified such as wild radish (*Raphanus raphanistrum* L.), nettle (*Urtica* spp.) and goosefoots (*Chenopodium* spp.) are edible, with medicinal properties, and may have been foraged for these reasons.

Wild seeds were present in 80.3% of samples that contained charred plant remains; common Iron Age species were identified and a detailed list is given in table 22. The species present give an indication as to what the surrounding environment was like. The majority of species were common agricultural weeds. Those, like cleavers (*Galium aparine* L.), are associated with autumn sown crops. Whilst nitrogen fixing plants, such as vetches (*Vicia* spp.), are associated with continuously farmed plots. Sedges (*Carex* spp.) and spike rushes (*Eleocharis palustris/uniglumis* L.) were identified and indicate wet field conditions with poor fertility. Species associated with disturbed areas, such as mallow (*Malva* spp.), and grassland, like buttercup (*Ranunculus* spp.), were also present (Jones *et al.* 2004).

Table 21: mid to late Iron Age samples analysed.

Counts for each species include flots, 're-flots' and coarse fractions. Seed size classification based on Jones (1987).

Sample	14	19	21	38	39	43	44	47	52	59	63	77	
<b>Context</b>	1255	1297	1423	1483	1509	1553	1571	1582	1618	1661	1695	1885	
<b>Group</b>	19		26	18	7		24	18				16	
<b>Phase</b>	MLIA	MLIA	MLIA	MLIA	MLIA	MLIA	MLIA	MLIA	MLIA	MLIA	MLIA	MLIA	
<b>Type</b>	Ring gully	Curvilinear gully	Pit	Curvilinear gully	Ring ditch	Pit	Pit	Ditch	Linear gully	Pit	Pit	Ditch	
<b>Grain</b>													
<i>Triticum</i> sp. glume wheat	7	8	2	4	4	1	3	4	5	2	2	4	Emmer/spelt wheat
<i>Hordeum vulgare</i> L.	1	2	2		5	3	2	2	23	6	10	3	Barley
Free threshing													Free threshing
Cereal	3	8	1	1	3	2	6	5	12	2	3	5	Cereal
Cereal/Poaceae		3	2							4	2		Cereal/grass
<b>Chaff</b>													
<i>Triticum spelta</i> L. glume base	8	3	22	14	1	3	23	12	6	10	7	18	Spelt wheat glume base
<i>Triticum</i> sp. glume base	5	9	17	27	1	7	21	20	3	23	16	22	Emmer/spelt wheat glume base
<i>Hordeum vulgare</i> L. rachis								2	1	1		3	Barley rachis
Straw culm node							1					1	Straw culm node
<b>Other</b>													
<i>Corylus avellana</i> L.						2		2		5	1		Hazelnut
<i>Crataegus monogyna</i> L.					1								Hawthorn
<i>Prunus spinosa</i> L.	1	1											Sloe
<b>Seeds</b>													

Sample	14	19	21	38	39	43	44	47	52	59	63	77		
<i>Anthemis cotula</i> L.								1		1			Stinking chamomile	SFH
<i>Arrhenatherum elatius</i> L.													Onion couch	BFH
<i>Brassica</i> sp.	1	1		4		3	1	1					Cruciferous vegetables	SFH
<i>Bromus</i> sp.												1	Brome grass	BFH
<i>Carex</i> sp.													Sedges	SFH
<i>Cerastium</i> sp.				1			3					1	Mouse-ear chickweed	SFH
<i>Chenopodium</i> sp.	3	3		3	6	2	1		3	1		3	Goosefoots	SFH
cf. <i>Danthonia decumbens</i> L.													Heath grass	SFH
<i>Eleocharis palustris/uniglumis</i> L.				2	3				1				Spikerushes	SFH
<i>Galium aparine</i> L.	2	1	2		12			2	1		10	1	Cleavers/goosegrass	BFH
Large poaceae	9	7	7	5	8	6	9	5	8	16	3	6	Large grass	BFH
<i>Lathyrus</i> sp.				1						1			Vetchlings	BFH
<i>Malva</i> sp.								1					Mallow	SHH
<i>Phleum</i> sp.	1									3			Timothy	SFH
<i>Polygonum</i> sp.	1	1		2		4		2				1	Knotgrasses	SFH
<i>Ranunculus</i> sp.						1	1						Buttercup	BFH
<i>Raphanus raphanistrum</i> L.					1								Wild radish	BFH
<i>Rumex</i> sp.	1	1	1	3	5	1		1	1	20	3	2	Dock	SFH
<i>Silene</i> sp.										1	1		Catchfly/campion	SHH

Sample	14	19	21	38	39	43	44	47	52	59	63	77		
Small poaceae		7		6	2	1		5	1	9	4	2	Small grass	SFH
<i>Stellaria media</i> L.													Chickweed	SFH
<i>Trifolium/medicago</i> type.					2			3					Clover/medick	N/A
cf. <i>Urtica</i> sp.												1	Nettle	SFH
<i>Vicia</i> sp.	17	2		17	5	4	5	5	3	10	8	9	Vetch/tare	SFH
Ident.	5	2		7	6	11	4	6	1	5	3	9	Ident.	N/A
<b>Total</b>	65	59	56	97	65	51	80	79	69	120	75	91		
<b>Litres</b>	19	19	20	10	20	22	26	18	9	7	7	30		
<b>% analysed</b>	100	100	100	100	100	100	100	100	100	25	100	100		
<b>Items per litre</b>	3.4	3.1	2.8	9.7	3.3	2.3	3.1	4.4	7.7	68.6	10.7	3.0		

### Ratios

For the majority of samples ratios could not be calculated because they were unlikely to contain 50 items or more. The remains from these samples probably represent general scatters of domestic waste that have accumulated in open features. It was possible to calculate Van der Veen's (2007) ratios for twelve samples and these results will provide a better insight into the specific crop processing activities that were carried out.

The ratio of glume wheat glume bases to grains was considered (Table 23). A ratio higher than one indicates a preponderance of glume bases, and all samples for which the ratio could be calculated were higher than this, except for sample 19. The higher ratio suggests a by-product from a later processing stage rather than a grain product.

Table 23: Calculations for the ratio of glume wheat glume bases to grain.  
*Indeterminate grains were split according to the proportion of identified grains in the sample and included in the ratio. Only those samples which had a total of 25 items for the ratio are included.*

Sample	19	21	38	44	47	59	63	77
Context	1297	1423	1483	1571	1582	1661	1695	1885
Total <i>Triticum</i> spp. glume bases	12	39	41	44	32	33	23	40
Total <i>Triticum</i> spp. glume wheat grains	17	4	5	7	7	4	3	7
Ratio	0.71	9.75	8.20	6.29	4.57	8.25	7.67	5.83

The ratio of barley rachis internodes to grains was calculated for sample 52, a deposit from a linear gully (1618) that forms part of a roundhouse entrance (table 24). This ratio for the barley plant is 0.3 (i.e. 1 internode to 3 grains); for sample 52 the ratio was much lower suggesting the sample represents cleaned barley grain. It must be emphasised that the chaff of free-threshing cereals, such as barley, tends to be under-represented in comparison to glume wheat as it more readily destroyed during charring (Boardman and Jones 1990). Therefore the presence of barley chaff alone may be of significance.

Table 22: Calculations for the ratio barley rachis internodes to grains for sample 52.  
*Indeterminate grains were split according to the proportion of identified grains in the sample and included in the ratio.*

Sample	52
Context	1618
Total <i>Hordeum vulgare</i> L. rachis	1
Total <i>Hordeum vulgare</i> L. grain	33
Ratio	0.03

The ratio of weed seeds to grain was also calculated (table 25). All samples except sample 52 had higher values (i.e. more weeds than grains) for these ratios than other sites in the region such as Kirby Muxloe (Monckton 2005). This suggests that the samples predominantly represent a by-product from later processing stages. As the value for sample 52 is comparatively low it seems likely to primarily represent a cleaned grain product.



Table 23: Calculations for the ratio of weed seeds to grain.  
Only those samples which had a total of 25 items for the ratio are included.

Sample	14	19	38	39	43	44	47	52	59	63	77
Context	1255	1297	1483	1509	1553	1571	1582	1618	1661	1695	1885
Total weeds	40	25	51	50	33	24	32	19	67	34	35
Total grains	11	21	5	12	6	11	11	40	14	17	12
Ratio	3.6	1.2	10.2	4.2	5.5	2.2	2.9	0.5	4.8	2.0	2.9

Weeds were categorised following Jones (1987) by type. Three types were present and they were: small headed and heavy (SHH), which is a residue of coarse sieving, small free and heavy (SFH) which are a by-product of fine sieving, and big free and heavy (BFH) which are removed during hand picking. SFH and BFH were the most common (table 26) suggesting the samples predominantly represent by-products from later processing stages.

Table 24: Total BFH, SFH and SHH weed seeds in samples analysed.

Sample	14	19	21	38	39	43	44	47	52	59	63	77	Notes
Context	1255	1297	1423	1483	1509	1553	1571	1582	1618	1661	1695	1885	
Total BFH weeds	11	8	9	6	21	7	10	7	9	17	13	8	Hand-picking
Total SFH weeds	24	15	1	38	21	15	10	15	9	44	17	18	Fine-sieving
Total SHH weeds								1		1	1		Coarse sieving

Eleven samples had less than 11 items per litre (table 22). These samples probably represent slow repeated deposition – a general scatter of crop processing residues accumulating on a day-to-day basis into open features. Sample 59, a pit (1661), had approximately 69 items per litre, but whilst this is of a much higher quantity it cannot be considered high enough to represent a single deposition where one would expect densities above a few hundred.

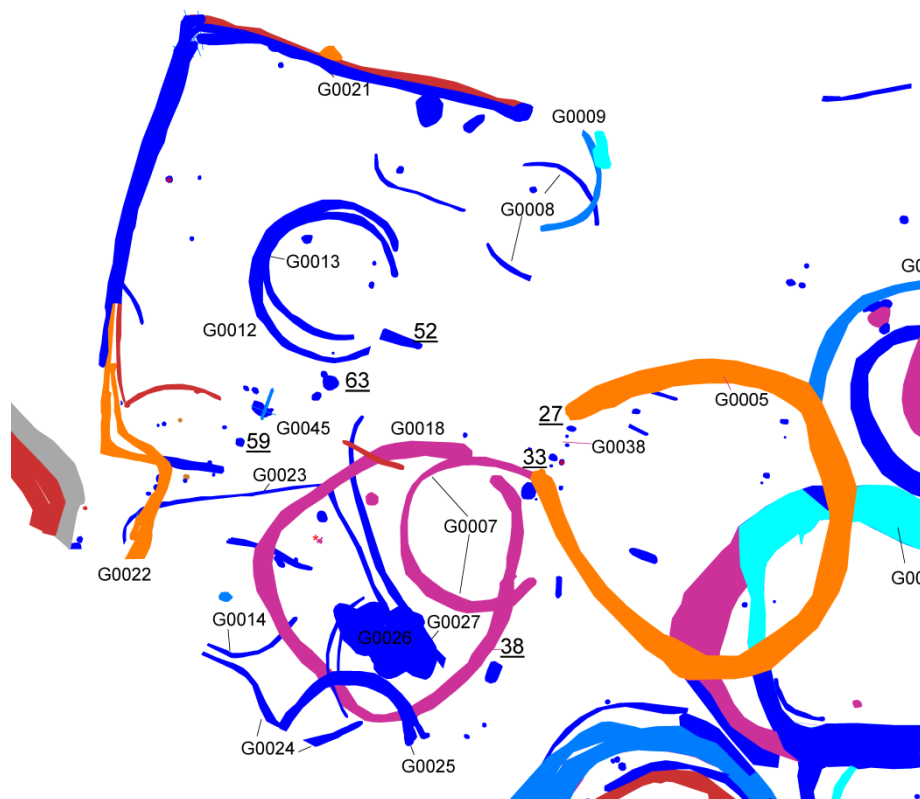
To summarise, the samples analysed represent domestic waste from processing the crop for consumption. In all samples, except for 52, the predominant residue was from the later processing stages – sieving and handpicking. It seems likely that sample 52 is a cleaned grain product and could represent a concentration of food spillage or small batches of grain that were accidentally burnt. These samples represent slow, repeated, day-to-day deposition.

### *Distribution*

There is no apparent area of the site that is devoid of charred plant remains. However, there is a definite concentration of activity associated with crop processing in the south-west corner because this is where all the samples of moderate and high densities (six items or more per litre) are located. There are two specific groupings dating to the mid-late Iron Age within this south-west area (Figure 57). Group 18 is an enclosure and sample 38 (1483) has come out of the curvilinear gully. Samples 52, 59 and 63 are all associated with a nearby roundhouse belonging to group 13/12. Sample 52 (1618) forms part of the roundhouse entrance and 59 (1661) and 63 (1695) are nearby pits.

Figure 57: Plan of the south-west corner of the site showing the locations of samples with 6 items or more per litre; their associated groups and phases.

Key: Blue = mid-late Iron Age; Pink = Belgic; red = mid-1<sup>st</sup> century AD; and, yellow = late 1<sup>st</sup> century AD.



Considering feature type for the mid-late Iron Age, there is a higher concentration of charred plant remains in linear gullies and generic pits (table 6). For these features the average number of items per litre is above 5. Gullies also proved to be productive in the 2011 evaluation.

Table 25: The average number of items per litre for mid-late Iron Age features. For samples that were analysed the number of items per litre was taken from table 1.

Context type	Average no. items per litre
Linear pit	0.4
Post-hole	0.48
Animal burial	0.5
Hearth	0.63
Ring ditch	0.67
Ring gully	0.91
Ditch	1.19
Gully	1.33
Curvilinear gully	2.62
Pit	5.15
Linear gully	5.78

### ***Belgic***

Sample 3, a fill from a post-hole on the east of the site (SG1102), dated to this period. Few charred plant remains were found; three cereal grains, one of which was glume wheat (*Triticum diccocum/spelta* L.) and four fragments of hazelnut shell (*Corylus avellana* L.). The number of items per litre was 0.9. The sample probably represents food spillage/waste.

### ***Early Roman***

Three samples dated to the early Roman period. Sample 27 (1395) and 33 (1456) were fills from a ring ditch and sample 91 (2037) was a fill from a ditch. Sample 91 contained very few remains; two pieces of *Triticum* spp. chaff, a goosefoot seed (*Chenopodium* sp.) and an indeterminate seed (Table 33). The other two samples had a greater quantity of remains, potentially 50 items or more, and so were analysed (table 7).

### ***Species***

Similar to the Iron Age, emmer/spelt wheat grains (*Triticum dicocum/spelta* L.) were most common in the Early Roman samples. However, three potential free-threshing grains of bread wheat type (*Triticum aestivum/turgidum* L.) were present in sample 27. Barley grains (*Hordeum vulgare* L.) were also common and the six-row variety was identified. The only chaff to be identified to species was the glume bases of spelt wheat and, as for the Iron Age, suggests that spelt wheat was the dominant cereal crop. A straw culm node was present. A hawthorn pip (*Crataegus monogyna* L.) was identified in sample 27, suggesting that wild foods were still being collected and consumed in the early Roman period. The seeds identified were very similar to those in the Iron Age, the exceptions being onion couch grass (*Arrhenatherum elatius* L.) and heath grass (*Danthonia decumbens* L.). These species are thought to have been weeds of cultivation before the use of the mould-board plough (Van der Veen 1992). Chickweed (*Stellaria media* L.), another common agricultural weed (Jones *et al.* 2004), was also present.

Table 26: Early Roman samples analysed.

Counts for each species include flots, 're-flots' and coarse fractions. Seed size classification based on Jones (1987).

Sample	27	33		
Context	1395	1456		
Group	5	5		
Phase		7		
Type	Ring ditch	Ring ditch		
Grain				
<i>Triticum</i> sp. glume wheat	12	7	Emmer/spelt wheat	
<i>Hordeum vulgare</i> L.	4	4	Barley	
<i>Triticum</i> sp. free threshing	3		Free threshing	
Cereal	20	2	Cereal	
Cereal/Poaceae	1		Cereal/grass	
Chaff				
<i>Triticum spelta</i> L. glume base	3	9	Spelt wheat glume base	
<i>Triticum</i> sp. glume base	5	4	Emmer/spelt wheat glume base	
<i>Hordeum vulgare</i> L. rachis			Barley rachis	
Straw culm node	1		Straw culm node	
Other				
<i>Corylus avellana</i> L.			Hazelnut	
<i>Crataegus monogyna</i> L.	1		Hawthorn	
<i>Prunus spinosa</i> L.			Sloe	
Seeds				
<i>Anthemis cotula</i> L.			Stinking chamomile	SFH
<i>Arrhenatherum elatius</i> L.	1		Onion couch	BFH
<i>Brassica</i> sp.			Cruciferous vegetables	SFH
<i>Bromus</i> sp.			Brome grass	BFH
<i>Carex</i> sp.			Sedges	SFH
<i>Cerastium</i> sp.	2		Mouse-ear chickweed	SFH
<i>Chenopodium</i> sp.	5	2	Goosefoots	SFH
cf. <i>Danthonia decumbens</i> L.	2		Heath grass	SFH
<i>Eleocharis palustris/uniglumis</i> L.	3		Spikerushes	SFH
<i>Galium aparine</i> L.		5	Cleavers/goosegrass	BFH
Large poaceae	13	14	Large grass	BFH
<i>Lathyrus</i> sp.			Vetchlings	BFH
<i>Malva</i> sp.			Mallow	SHH
<i>Phleum</i> sp.			Timothy	SFH
<i>Polygonum</i> sp.			Knotgrasses	SFH
<i>Ranunculus</i> sp.	1		Buttercup	BFH
<i>Raphanus raphanistrum</i> L.			Wild radish	BFH
<i>Rumex</i> sp.	7	2	Dock	SFH
<i>Silene</i> sp.			Catchfly/campion	SHH
Small poaceae	17	6	Small grass	SFH
<i>Stellaria media</i> L.		2	Chickweed	SFH
<i>Trifolium/medicago</i> type.		1	Clover/medick	N/A
cf. <i>Urtica</i> sp.			Nettle	SFH
<i>Vicia</i> sp.	1	6	Vetch/tare	SFH
Ident.	12	6	Ident.	N/A
Total	114	70		
Litres	19	10		
% analysed	100	100		
Items per litre	6	7		

*Ratios*

Sample 91 did not contain enough remains for Van der Veen’s (2007) ratios to be calculated but probably represents a general scatter of domestic waste that accumulated in the open ditch. Ratios could be calculated for the other two samples and are discussed below.

The ratio of glume wheat glume bases to grains was considered (Table 29). This could only be calculated for sample 27 because 33 had less than 25 items. Sample 27 had a value lower than one, suggesting it represents a grain product.

Table 27: Calculations for the ratio glume wheat glume bases to grain for sample 27. Indeterminate grains were split according to the proportion of identified grains in the sample and included in the ratio.

<b>Sample</b>	<b>27</b>
<b>Context</b>	1395
<b>Total <i>Triticum</i> spp. glume bases</b>	8
<b>Total <i>Triticum</i> spp. glume wheat grains</b>	25
<b>Ratio</b>	0.32

The ratio of weed seeds to grain was also calculated (Table 30). Both samples had higher values (i.e. more weeds than grains) for these ratios than other sites in the region such as Kirby Muxloe (Monckton 2005). This suggests that the samples predominantly represent a by-product from later processing stages.

Table 30: Calculations for the ratio weed seeds to grain.

<b>Sample</b>	<b>27</b>	<b>33</b>
<b>Context</b>	1395	1456
<b>Total weeds</b>	64	44
<b>Total grains</b>	40	13
<b>Ratio</b>	1.6	3.4

Like the mid-late Iron Age assemblage, SFH and BFH weed seeds were most common (Table 31 suggesting that the samples predominantly represent by-products from later processing stages.

Table 28: Total BFH, SFH and SHH weed seeds in samples analysed based on Jones (1987).

<b>Sample</b>	<b>27</b>	<b>33</b>	<b>Notes</b>
<b>Context</b>	1395	1456	
<b>Total BFH weeds</b>	15	19	Hand-picking
<b>Total SFH weeds</b>	37	18	Fine-sieving
<b>Total SHH weeds</b>			Coarse sieving

The samples represent domestic waste from processing the crop for consumption. For both, the predominant residue was from the later processing stages – sieving and handpicking, and

these would have formed a general scatter accumulating on a day-to-day basis in the open ring ditch.

### *Distribution*

During the early Roman period the concentration of activity remains in the south-west area of the site. Both samples 27 and 33 are part of Group 5 which is a large enclosure dating to the late 1<sup>st</sup> century; the deposits come from the terminals of the ring ditch (figure 1).

### **Discussion**

At Waterfield Place there is a continuity of activity between the mid-late Iron Age and the early Roman period. The south-west area of the site remains the locus of crop processing activity, spelt wheat maintains its position as the dominant crop, the same agricultural weeds are present indicating similar farming practices, and wild resources continued to be utilised.

There is evidence for bread wheat type grains in the early Roman period, and these remains generally occur in small numbers in assemblages dating to this period and earlier. There is a trend in the South Midlands for bread wheat to increase in popularity from the late Iron Age (Cunliffe 2009), and it became the dominant cereal crop in the Anglo-Saxon period (Van der Veen 1996).

There are several archaeological sites in the East Midlands that also span the Iron Age and Roman period and an example is Kirby Muxloe in Leicestershire. At that site, charred plant remains were found as low density scatters in both periods and this was interpreted as an economy that remained focused on pastoralism rather than agriculture. Similar to Waterfield Place, spelt wheat was the most common cereal in both phases. The variety of weed seeds also increased slightly in the Roman period, with heath grass and onion couch grass occurring on both sites in the later, but not the earlier, assemblages (Monckton 2005). In contrast, at Dragonby, Lincolnshire, whilst there was no major change in cereal crop cultivation, exotic herbs such as coriander, summer savory, opium poppy and flax were introduced, perhaps suggesting increasing status as the site developed into a Roman small town (Van der Veen 1996).

The majority of the mid-late Iron Age samples from Waterfield Place were of a low density, containing five items per litre or less. This is typical of Leicestershire sites such as Kirby Muxloe and perhaps suggests that the economy at Waterfield Place had an emphasis on pastoral farming.

Sample 59, a pit (1661) dating to the mid-late Iron Age, contained approximately 69 items per litre and compared to other sites in the region this deposit has a high density. Other Iron Age sites in the county with high density deposits are rare, but include Rushey Mead (Monckton 2001), Desford (Jarvis 2000) and Rearsby site 5 (Monckton 2008).

The assemblage from a pit (5034) at Rearsby site 5, dating from the mid-late Iron Age, is similar to the high density deposit from Waterfield Place. The Rearsby deposit was dominated by seeds with numerous wheat chaff fragments (glume bases) that outnumbered the wheat grains, indicating that it included cereal cleaning waste from the de-husking spelt. Barley was also present and the weeds included those of spring sown crops and disturbed ground, and so the deposit appears to contain a mixture of waste from the different cereals. It was concluded that this represented an accumulation of small-scale cereal waste from the processing of batches of grain for consumption (Monckton 2008). Chaff is present in 57.9%

of Waterfield Place's mid-late Iron Age samples that have charred plant remains, a value that falls within the range produced by other sites, such as those mentioned above, that also have high density deposits (Monckton 2011).

During the early Roman period, the most abundant sample was 33, which contained seven items per litre and, in comparison to other sites in the region, has a moderate density (Monckton 2011). Other Roman sites in Leicestershire with moderate density deposits include Market Overton (mentioned in Monckton 2011) and Ashby By-Pass (Ciaraldi 2001). Few early Roman rural sites have been excavated in the county and therefore the results from Waterfield Place are of importance (A. Monckton pers. comm).

## **Conclusion**

During excavations at Waterfield Place, Market Harborough, ninety-one soil samples were taken from a representative range of features, areas and phases of occupation. Charred plant remains were found in the majority of samples and represent domestic waste from processing cereal for consumption on a day-to-day basis, which accumulated in open features over a period of time. By-products from sieving and handpicking were predominantly represented but evidence for spillage of grain and/or accidental burning of small batches of grain was also present. There was evidence for continuity across the mid-late Iron Age and Early Roman periods in terms of the locus of crop processing activity, the continued dominance of spelt wheat, and the continuation of similar farming practices, as indicated by the same agricultural weeds. Overall, the comprehensive sampling strategy and assessment of all samples has allowed for a deeper understanding of crop processing at the site and the analysis makes an important contribution to the appraisal of agricultural practice during the mid-late Iron Age and early Roman period across the region.

Table 32 assessment of mid-late Iron Age flots (approximate numbers given). Those highlighted in red will exceed over 50 items. Key: + rare, ++ common, +++ abundant.

Sample	Context	Group	Type	Grain	Chaff	Seed	Fruit stone	Nut shell	Total	Litres	% sorted	Items per litre	No. parts	Expected No. items	Snail	Charcoal	Root	Notes
1	1127	15	Ring ditch		2	2			4	7	100	0.6	3	15.4	+	++	++	
2	1131	15	Ring ditch		1	1			2	9	100	0.2	3	6.4	+	++	++	
4	1125	36	Post-hole	2				1	3	8	100	0.4	3	10.5	++	++	++	
5	1134	4	Ring ditch			2			2	8	100	0.3	1	2.0	++	++	++	
6	1166	2	Ditch			4			4	8	100	0.5	3	14.0	++	++	++	
7	1174	2	Ring ditch			2			2	9	100	0.2	3	6.4	+	++	++	
8	1184	20	Gully	1	1	10			12	6	100	2.0	2	32.0	++	+	+++	
9	1186	19	Ditch	1					1	7	100	0.1	2	2.4	++	++	+++	
10	1204	31	Ring ditch	1	2	4			7	10	100	0.7	4	28.0	+	++	+	
11	1222	19	Gully		2				2	9	100	0.2	3	6.4	++	++	++	
12	1229	15	Ring ditch			1		1	2	8	100	0.3	2	4.5	+	++	++	
13	1232		Ditch	2		5			7	7	100	1.0	2	17.0	+++	++	++	
14	1255	19	Ring gully	7	8	22			37	9	100	4.1	3	119.2	+++	++	++	
15	1251		Post-hole						0	8	100	0.0	1	0.0	++	++	++	
16	1253	19	Ditch			3		1	4	8	100	0.5	3	14.0	++	++	+++	
17	1248	31	Ring ditch						0	6	100	0.0	1	0.0	+	++	++	
18	1279	6	Ring gully	2		1			3	7	100	0.4	1	3.0	++	++	++	
19	1297		Curvilinear gully	8	1	5			14	6	100	2.3	3	60.7		++	+	
20	1350		Pit				1		1	6	100	0.2	3	4.3	+++	++	+	
21	1423	26	Pit	1	22	6			29	10	100	2.9	3	87.0		++	+++	
22	1330		Pit	1					1	10	100	0.1	1	1.0	++	+	++	
23	1361	31	Ditch	3	1	3			7	8	100	0.9	1	7.0	+	++	+	



Sample	Context	Group	Type	Grain	Chaff	Seed	Fruit stone	Nut shell	Total	Litres	% sorted	Items per litre	No. parts	Expected No. items	Snail	Charcoal	Root	Notes
24	1363		Linear Pit	1		3			4	10	100	0.4	3	12.0	+++	++	++	
25	1354		Post-hole			1			1	1	100	1.0	1	1.0	+	++	++	BF
26	1379	15	Ring Ditch	1	1	1			3	9	100	0.3	3	9.7	++	++		
28	1402	26	Pit	1		2			3	8	100	0.4	3	10.5	++	++	++	
29	1423	26	Pit	3				1	4	8	100	0.5	3	14.0	++	++	+	
30	1315	34	Ring ditch	1		4			5	9	100	0.6	3	16.1	+	++	++	
31	1450	27	Gully	4	3	5			12	10	100	1.2	3	36.0	++	++	+	
32	1454	10	Ring ditch		1				1	1	100	1.0	2	11.0		++	+	BF
34	1461	26	Pit			6			6	8	100	0.8	3	21.0	+	++		
35	1458		Post-hole						0	1	100	0.0	1	0.0	+	+	+	BF
37	1466		Pit						0	6	100	0.0	2	0.0	+	+++	++	
38	1483	18	Curvilinear gully	5	27	40			72	10	100	7.2	3	216.0	+++	++	++	
39	1509	7	Ring ditch	7	1	18			26	10	100	2.6	3	78.0	+++	+++	+	
40	1517		Post-hole						0	2	100	0.0	1	0.0		+	+	
41	1518		Post-hole	14		1			15	10	100	1.5	1	15.0	++	+++	+	
42	1519		Hearth						0	4	100	0.0	1	0.0		+	++	
43	1553		Pit	3	2	10			15	7	100	2.1	3	57.9	+	++	+	
44	1571	24	Gully	6	11	6			23	8	100	2.9	3	80.5	+	++	++	1L BF
45	1578	21	Ditch	3	1	2			6	9	100	0.7	3	19.3	++	++	++	
46	1586		Pit	1	2	7			10	4	100	2.5	1	10.0	+	+	++	
47	1582	18	Ditch	3	18	19			40	9	100	4.4	3	128.9	+	++		
48	1584	7	Ring gully	1	1	3			5	10	100	0.5	2	10.0	+	++		
49	1588		Hearth		1	1		10	12	9	100	1.3	2	25.3	+	++	++	
50	1594		Hearth					5	5	9	100	0.6	1	5.0	+	++	++	

Sample	Context	Group	Type	Grain	Chaff	Seed	Fruit stone	Nut shell	Total	Litres	% sorted	Items per litre	No. parts	Expected No. items	Snail	Charcoal	Root	Notes
51	1596		Animal burial			3			3	6	100	0.5	3	13.0	++	+	++	
52	1618		Linear gully	38	6	19			63	9	100	7.0	2	133.0	+	++	++	
53	1619		Linear gully	10	1	20			31	8	100	3.9	1	31.0	+	++	++	
54	1613	12	Gully	2	3	4			9	9	100	1.0	3	29.0	+	++	+	
55	1651	13	Ring gully		1	1			2	9	100	0.2	3	6.4		+		
56	1643		Post-hole						0	1	100	0.0	3	0.0	+	+	++	BF
57	1645		Gully	4			1	3	8	10	100	0.8	3	24.0	+	++	++	
58	1649		Post hole	4	3	1			8	8	100	1.0	2	18.0	+	+++	+	1L BF
59	1661		Pit	10	34	65		4	113	7	25	64.6	3	1404.4	+	+++	+	
60	1659	9	Ring gully						0	1	100	0.0	3	0.0		+	+	BF
61	1678	26	Pit	1		1			2	10	100	0.2	4	8.0	++	++		
62	1688		Gully			8			8	8	100	1.0	3	28.0		++	+	
63	1695		Pit	12	23	34		1	70	7	100	10.0	3	270.0		++	++	
64	1717		Pit	1		1			2	7	100	0.3	2	4.9	+	+++	++	
65	1735	7	Ditch	1					1	7	100	0.1	3	3.9	+	++	+	
66	1048		Pit	1	1	3		1	6	7	100	0.9	3	23.1		++	+	
67	1776		Post- hole	2	1	1		1	5	9	100	0.6	2	10.6	+	+++	++	
68	1778		Post-hole		1				1	9	100	0.1	2	2.1	+	+++	++	
69	1831		Pit		1	2			3	9	100	0.3	2	6.3	++	++	++	
70	1833		Pit		1	9			10	8	100	1.3	1	10.0	++	++	+	
71	1796	11	Pit					3	3	7	100	0.4	1	3.0		++	+	
72	1862		Post-hole	2	1	5			8	9	100	0.9	2	16.9		++	++	
75	1869	32	Curvilinear			1			1	6	100	0.2	2	2.7	+	++	+	

Sample	Context	Group	Type	Grain	Chaff	Seed	Fruit stone	Nut shell	Total	Litres	% sorted	Items per litre	No. parts	Expected No. items	Snail	Charcoal	Root	Notes
			gully															
76	1883		Post-hole	1	2	1			4	8	100	0.5	1	4.0		++	++	
77	1885	16	Ditch	1	21	16			38	10	100	3.8	3	114.0		++	+++	
78	1829	16	Ditch	1	7	7			15	10	100	1.5	2	30.0	+	++	++	
79	1873	16	Post hole	2	3	7			12	10	100	1.2	2	24.0	+	++	++	
80	1917		Ditch	2	7	3			12	10	100	1.2	2	24.0		++	++	
81	1879	16	Ditch	4	5	8			17	9	100	1.9	1	17.0	+	++	++	
82	1935	21	Ditch	3	1	6			10	10	100	1.0	3	30.0	+	++	++	
83	1933		Post-hole	1		1		3	5	10	100	0.5	2	10.0		+++	++	
84	1957		Curvilinear gully	1					1	7	100	0.1	2	2.4		++	+	
85	1974	22	Ditch	3	1	2			6	10	100	0.6	2	12.0	+	++	++	
86	1958		Ditch	4		6			10	10	100	1.0	3	30.0	+	++	++	
87	1999		Pit	2		4			6	10	100	0.6	2	12.0		+	++	
88	2002		Post-hole	4					4	8	100	0.5	3	14.0		+++	++	
89	1992		Post-hole						0	8	100	0.0	2	0.0	+	+	+	
90	1534		Post-hole						0	8	100	0.0	2	0.0	+	+++	++	
92	1929	20	Curvilinear gully						0	8	100	0.0	3	0.0	+	+	++	
93	2045	29	Ditch		1				1	5	100	0.2	1	1.0		+		
94	2065	21	Ditch	4	4	7			15	9	100	1.7	1	15.0	+	++	+	

Table 33 assessment of Early Roman flots (approximate numbers given). Those highlighted in red will exceed over 50 items. Key: + rare, ++ common, +++ abundant.

Sample	Context	Group	Type	Grain	Chaff	Seed	Fruit stone	Nut shell	Total	Litres	% sorted	Items per litre	No. parts	Expected No. items	Snail	Charcoal	Root	Notes
27	1395	5	Ring Ditch	16	5	29			50	9	100	5.6	3	161.1	++	++		
33	1456	5	Ring ditch	10	11	29			50	9	100	5.6	3	161.1	+	+		1L BF
91	2037	21	Ditch		2	2			4	10	100	0.4	3	12.0	+	+	+	

### ***7.11 Radiocarbon Dates (carried out by Scottish Universities Environmental Research Centre (SUERC))***

Two radiocarbon measurements were obtained on samples from Waterfield Place. The samples chosen were a fragment of human and fragment of sheep bone, which were processed and prepared by the Scottish Universities Environmental Research Centre (SUERC) and measuring using Accelerator Mass Spectrometry (AMS). The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration programme (OxCal4).

Although limited in their scope the radiocarbon dates have provided independent dating evidence for the Waterfield Place site. The dates are interesting, falling at either end of the dominant period of activity.

Table 29: Radiocarbon determinations from Waterfield Place

<b>Lab Code</b>	<b>Context</b>	<b>Material</b>	<b><math>\delta^{13}\text{C}</math> %</b>	<b><math>\delta^{15}\text{N}</math> %</b>	<b>C:N</b>	<b>Radiocarbon age (BP)</b>	<b>Calibrated age (95% confidence)</b>
SUERC-58549	(1595) [1597]	Sheep vertebra	-22.1	5.8	3.5	3018±31	1321-1190 cal BC
SUERC-58548	(1248) [1249]	Human rib and tooth	-20.7	9.7	3.4	2033±29	114 cal BC–30 cal AD

## 8. Discussion

By Jennifer Browning, incorporating the results and conclusions of Heidi Addison, Nick Cooper, Rebecca Hearn, Malin Holst, Elizabeth Johnson and Rachel Small

### *Archaeological Background and landscape context*

Excavations at Waterfield Place, Market Harborough produced evidence for settlement activity ranging in date from the early-mid Iron Age through to the early Roman period. The site would have been within the southern part of the territory of the *Corieltavi*, which extended from North Northamptonshire through Leicestershire and into Lincolnshire, Nottinghamshire and possibly as far as South Yorkshire. Excavations carried out in the last 20 years, predominantly developer-funded, have made it increasingly clear that the East Midlands was relatively well populated in the Iron Age; the late Iron Age in particular witnessing an expansion in settlement and agriculture (Clay 2004, 44). The landscape around Market Harborough is rich in both Iron Age and Roman sites and artefacts. An open air shrine with votive depositions of coin hoards and evidence for feasting activity is known from Hallaton, 9.8km to the north-east (Score 2011). Evidence of late Iron Age activity at Weston by Welland, c.5km away, included the deposition of *Corieltavian* coins and antler fragments in a collapsed oven (Browning 2012). Ditches denoting a Roman marching camp were identified at the same location (Harvey 2011b). An excavation carried out by Northamptonshire Archaeology at Airfield Farm, Market Harborough, 1.5km west of Waterfield Place, recorded a sub-square ditched enclosure containing a single large roundhouse and an internal sub-enclosure. Geophysical survey has shown evidence for further settlement, including enclosures, roundhouses, and a droveway of probable Iron Age and Roman date. Further activity of the same period and possibly even part of the same extensive site running along the ridge, is also known from Lubenham Hill.

On the periphery of the site, fieldwalking surveys carried out by Great Bowden Heritage and Archaeology group (GBHA) between 2005 and 2011 on fields north of the Ridgeway (Chater's Hill, Webbs Meadow, Lower Green's Hill and Russell Seeds) have produced a moderate quantity of Roman pottery and fewer Iron Age sherds (<http://greatbowdenheritage.btck.co.uk/>). The quantities were generally far less than the medieval and post-medieval finds from manuring scatters. Roman sites in the wider landscape include the Gartree Road, which runs south-east out of Leicester into Northamptonshire through the Roman town of Medbourne. The Roman road that runs from Ermine Street to King's Cliffe in Northamptonshire may continue to Medbourne, 7.5 km north. The road networks were a focus for further Roman activity, which has been recorded at Drayton, Hallaton, Slawston and Great Easton. Test pits, excavated in 2013-14 north-east of Great Bowden village, produced a concentration of Roman pottery at the rear of Rectory House, which is likely to indicate occupation (Lewis *et al* 2014, 101).

Waterfield Place is located immediately to the west of an area which has produced copious numbers of Roman artefacts, recovered over many years from the back gardens of the houses of the Ridgeway. Although the site has not yet been confirmed by survey or excavation, the spatial distribution of the material indicates that the settlement was up to 0.5km x 0.3km in size (P. Liddle in HER notes from 1985). This is larger than might be expected for a villa site, suggesting that the site was a Roman small town, potentially occupying up to 7 hectares

(Liddle 2004, 65). A few sherds of Iron Age pottery and querns were found in the 1930s but greater quantities of Roman pottery and coins have been recovered from the 1950s onwards, following the construction of housing (Liddle 2004, 65). The coins date from the 3rd and 4th century AD but the pottery dates span the Late Iron Age through to the end of the Roman occupation (ibid, 65). Test pit excavations have also been carried out by the Great Bowden Heritage and Archaeology group (GBHA online report), including two small weekend excavations in a rear garden on the Ridgeway in 2005, which produced a variety of pottery spanning the entire period of the Roman occupation. The detailed notes held by the Historic Environment Record (HER) on the pottery from the Ridgeway demonstrate that there is a bias towards later material Johnson (this report), indicating that settlement may have started in the late Iron Age but expanded in size up to and including the 4th century AD.

Waterfield Place is separated from the area of the putative small town by the site now occupied by Ridgeway Primary Academy. However, several archaeological watching briefs and an evaluation have produced little evidence for either Iron Age or Roman activity. Two watching briefs carried out in 1999 on trenches excavated at the front of the school building showed modern disturbance, associated with construction, to a depth of 0.75m below ground level (Browning 1999a; 1999b). A 20m trial trench was excavated in 2012 on the east side of the school playing field, c. 70m east of the current site. It revealed a probable medieval plough furrow but no earlier activity (Kipling 2012). Evidence of landscaping was revealed during the monitoring of ground stripping on the eastern side of the school grounds, suggesting at least part of the area had been built up (Browning 2013). Landscaping of the site could therefore explain the lack of evidence recovered so far and it is possible that archaeological deposits could still exist on the western side of the school playing fields, assuming that the area has not been similarly disturbed. However, it is equally possible that there was a physical separation between Waterfield Place and the Roman small town, indicating a separate origin for the two settlements, rather than just an eastwards settlement shift.

## ***Chronology***

There is some evidence for activity on the site that pre-dates the main phase of the settlement. Flints recovered from the site were considered to be residual in later features. Two flints, a bladelet and a serrated flake hint at Mesolithic activity, however the remaining examples were 'domestic' tools and knapping debris dating from the Neolithic to Bronze Age (L. Cooper, this report). There were no earth-fast features associated with this early occupation.

It is difficult to be sure exactly when settlement began at the site, however, a radio-carbon date from a sheep burial in a small pit (SG1597) came in at 3018±31BP, equating to a calibrated date of 1321-1190 cal BC (95% confidence), suggesting that the animal died in the Bronze Age. Although the pit was located within a multi-phase enclosure, G015, there is no physical relationship between the pit and any other features. It is therefore difficult to establish whether this location indicates that the enclosure was in use at a very early stage in the history of the site. Evidence from the pottery assemblage suggests otherwise; 41 sherds of early and early-middle Iron Age pottery were recovered but there was no Bronze Age material, suggesting a temporal gap between the sheep burial and the main phase of occupation. The significance of this animal is therefore difficult to gauge, however it does not appear to mark the beginning of established settlement.

The pottery evidence suggests that the main phase of occupation took place from the early middle Iron Age through to the late 1st century AD, correlating with the multiple recuts and density of features that suggest the longevity of the settlement in various forms. The small quantity of pottery from the early- middle Iron Age contrasted with the large proportion dating to the middle-late Iron Age, from which it can be concluded that the settlement was at its height in the later period. The expansion in activity reflects a wider trend observed at numerous sites in the region, with the emergence of larger settlements at this time (Clay 2004, 46). Occupation level subsequently diminished; far smaller quantities of Roman pottery (18%) were recovered. Pottery evidence therefore suggests that the site was abandoned by the end of the late 1st century AD.

The 'mid-late Iron Age' is essentially a construct based on the pottery assemblage, which changes little in terms of form and fabric during this time. Efforts have been made to draw out small observed differences, such as the prevalence of carinated rims or scored ware, which might indicate earlier or later activity within the period but this work is currently tentative and requires further investigation (Johnson, this report). However, despite the fact that the material culture appears undifferentiated, the mid-late Iron Age covers a time-frame of more than 500 years within which the site evidently developed and changed. For some features, the stratigraphic relationships on the site offer clues to chronological differences between them but in other areas chronology remains unclear; on a site wide level it is not always possible to establish which features were contemporary. This problem will be discussed in further detail below.

There is greater clarity within the 1st century AD, a time of significant change. The presence of Belgic forms within the assemblage is significant. This pottery, while difficult to date precisely, is unlikely to have been present before the beginning of the 1st century AD because the Gallo-Roman imports on which it is based did not reach Leicester, prior to the end of the 1st century BC (Pollard 1994, 75). It was generally produced between AD20 and AD60, marking the transition and acknowledging Roman influence in its form but still essentially a product of the Iron Age (E. Johnson pers. comm.). Mid to late 1st century Roman-British pottery was also recovered from a small number of features, which was distinct from the Iron Age wares that preceded it. The diversity of pottery forms increased and, unlike the Belgic forms, which could occur alongside pottery of an earlier style, such features no longer contain any 'Iron Age' pottery (excepting residual sherds). These features included an enclosure on the west of the site, ditch group G028 and the upper fill of a pit directly north-west of ditch group G029, as well as parts of the square-enclosure G021, which was remodelled as G022. G005, the large pennisular enclosure in the centre of the site is clearly a late feature, since it contained late 1st century pottery, including Samian ware from Gaul and also truncated all the other features that it encountered.

## ***Settlement Form***

### ***Location and Environment***

One of the main attractions to settlers is likely to have been the location of the site on top of a flat-topped ridge, c. 114m O.D.; clear views of the surrounding landscape would have been possible in all directions. The current course of the river Welland runs c. 1.1km to the east but water is likely to have been obtained from local springs or the excavation of shallow wells. During the excavation local people pointed out that they had observed that some parts of the field were persistently waterlogged, possibly indicative of underground water sources.



Some indications for the nature of the environment around the site during the period of use can be gleaned through the study of the environmental evidence (Small, this report). Wild seeds were present in 80% of productive samples and consisted primarily of common agricultural weeds, such as cleavers, which are associated with autumn sown crops. Nitrogen-fixing plants were identified, such as vetches, associated with continuously farmed plots, as well as plants, such as sedges and spike rushes, that suggest wet, unfertile soils. Mallow is usually found in disturbed ground and buttercup, a grassland species, was also present. These therefore suggest a mixture of pastoral and arable land, some of which was low in soil fertility.

The samples also produced small numbers of bones from mice and voles, although unusually, amphibians were not recovered (Browning, this report). These included a tentative identification of house mouse from roundhouse G013, and G36. This species is commonly found in association with human habitation and they may be attracted by stores of grain. Field vole and possibly water vole occurred sporadically in various groups. Water vole is normally found close to a source of slow-running water (Harris and Yalden 2008, 114) while field vole lives in damp grassland (Harris and Yalden 2008, 102).

### ***Size, extent and complexity***

The site presented a picture of dense occupation, as evidenced by numerous intercutting ditched enclosures, ring gullies, clusters of post-holes, pits and short linear gullies (Figure 58). There was an increased concentration of features towards the eastern and southern edge of the excavation area, indicating that the settlement core was located on the fringes of and possibly outside the site. The occupied area evidently continued beneath the western side of the Ridgeway School playing field and under Pochin Drive to the south, possibly even extending as far the Ridgeway. The density of occupation suggests that the lost parts of the settlement are likely to have been easily as large as the excavated area; if this is the case the total ground plan must have been in excess of 3 hectares. As discussed above, previous archaeological investigations at the adjacent Ridgeway Primary Academy did not locate any Iron Age evidence, but this may be a consequence of later truncation within the areas examined. The density of archaeology decreased towards the west of the excavation area and a wide boundary, G029, may represent the western extent of the settlement. Similarly a decline in activity was noted towards the north of the site and that the edge of the ridge and steep north-facing slope beyond may define the edge of the settlement.

The difficulty in defining phases of activity was outlined above and features were often grouped on the basis of their spatial distribution, subject to any stratigraphic relationships. The illustrations in this section show the suggested sequence of events on site, but with certain provisos (Figure 58 - Figure 62). There is greater certainty over the earliest and the latest settlement form, however it has not always been possible to identify which enclosures are contemporary with each other and the same is true of most of the pits and post-holes.

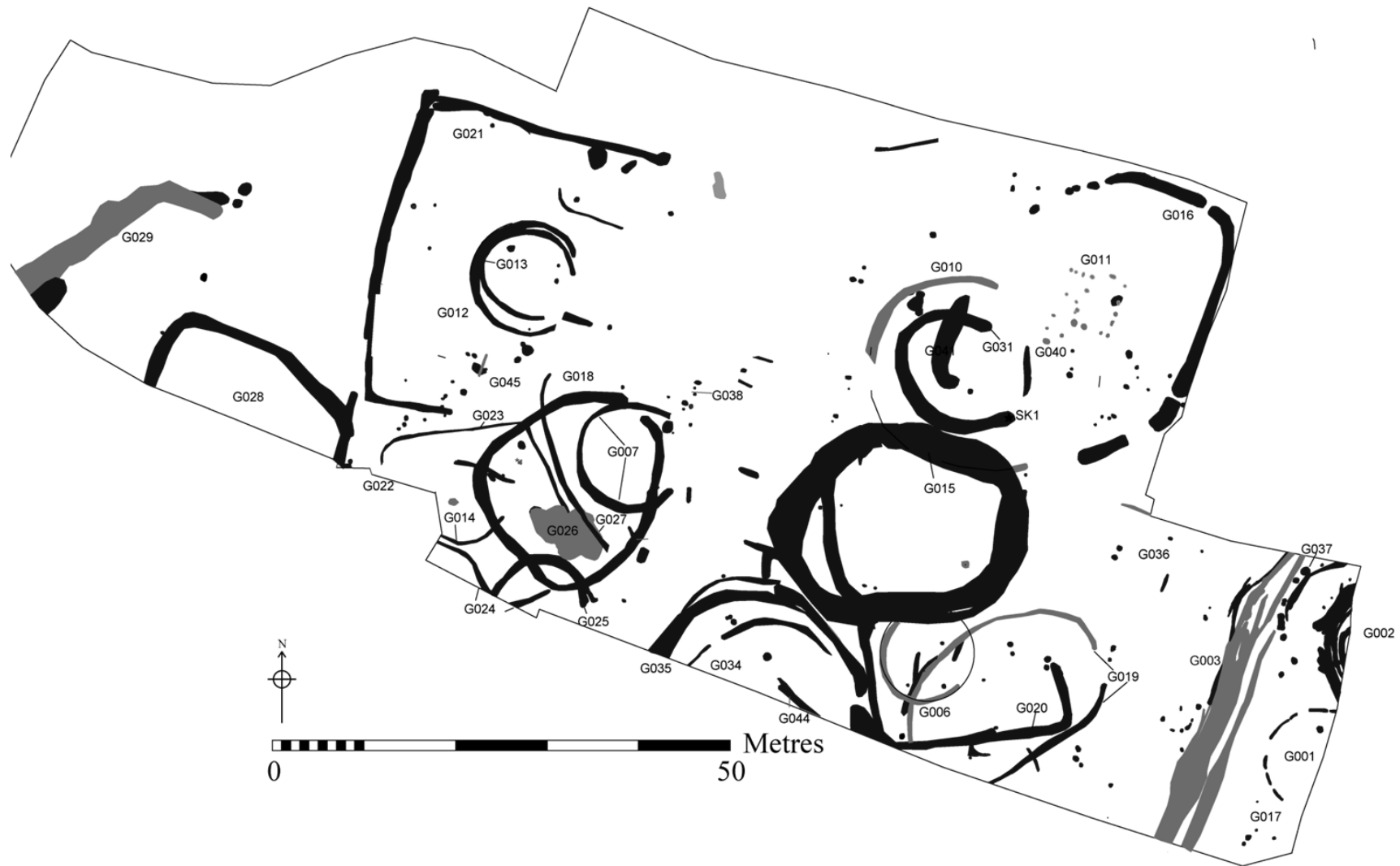


Figure 58: The mid-late Iron Age archaeology

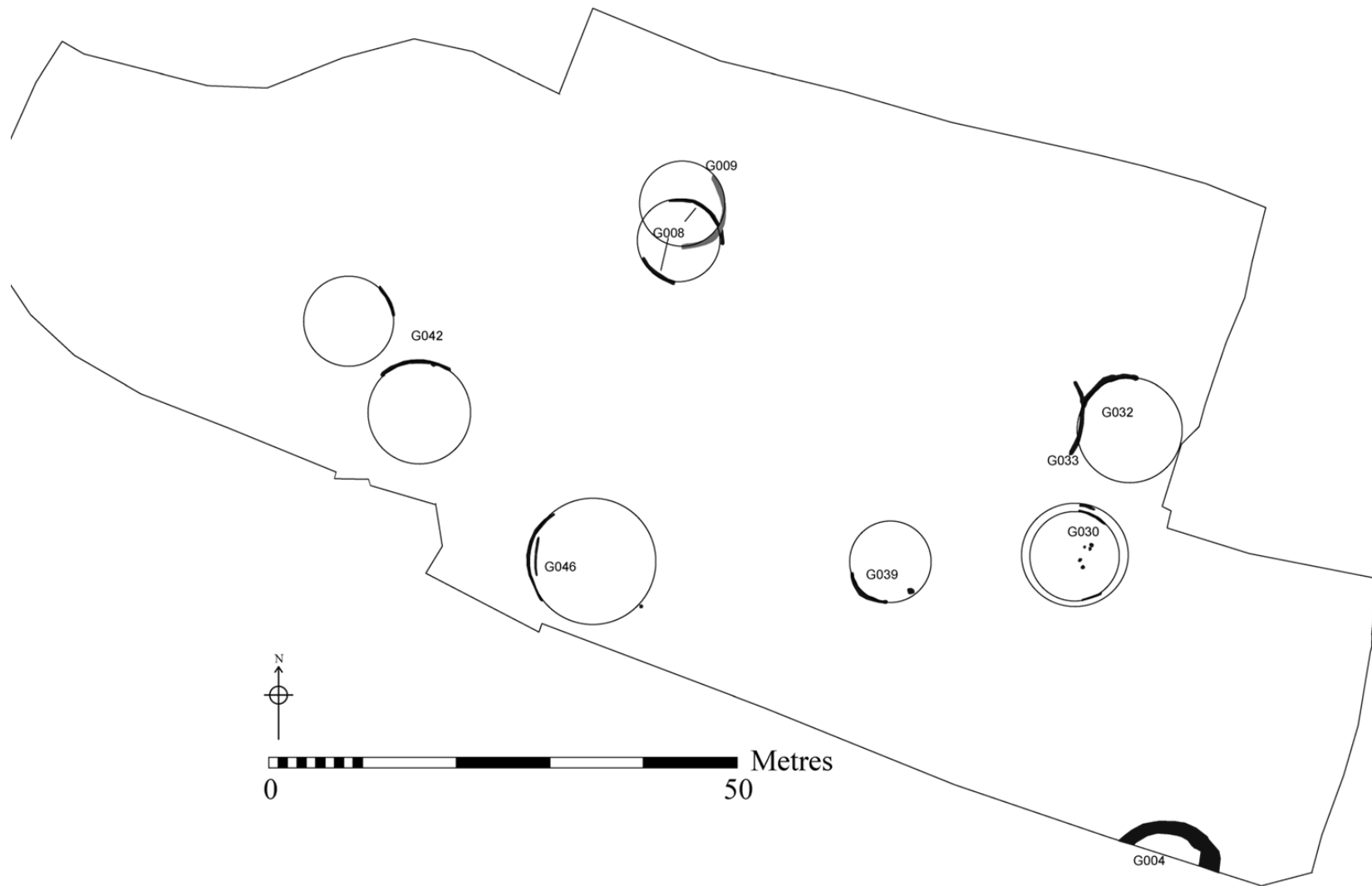


Figure 59: The earlier roundhouses of the unenclosed phase

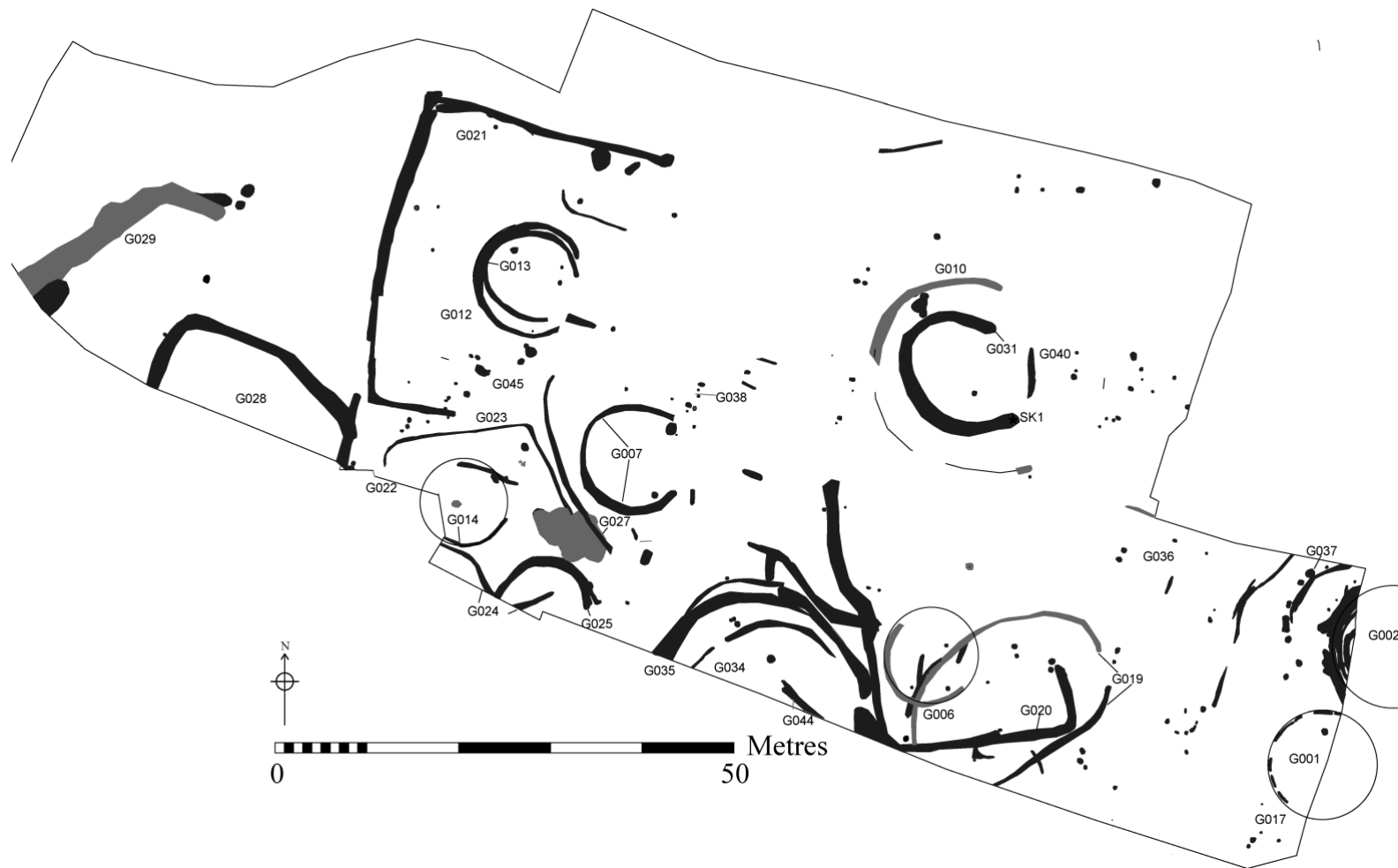


Figure 60: Mid-late Iron Age features, excluding the earliest and later features



Figure 61: Middle to late Iron Age enclosures, post-dating many of the roundhouses



Figure 62: Late archaeology on the site (Belgic, mid and late 1st century).  
Despite being backfilled by the end of the Iron Age, Enclosure G018 is shown to illustrate its resemblance to G005

### ***Ring gullies and the earliest settlement archaeology***

There are a number of circular structures located across the site (c. 15), which are represented by short stretches of curvilinear gullies and occasionally, post-holes. At the north of the site, the partial ring gullies included G013; G012; G008; and G009; to the centre and south there were further ring gullies; G014; G007; G025; G042 (including SG1962) and G046, while on the east and southeast of the excavation area, G001, G002, G030, G032 and G033 and SG1200.

The gullies were predominantly shallow with flat or U-shaped bases, probably indicating drainage around the structure rather than acting as a beam slot. In common with most Leicestershire evidence, these gullies tend to comprise the main evidence for the roundhouses, presumably because they were originally deeply cut and have survived subsequent truncation. Occasionally, post-holes are also present, either internally, for example, G030 and G012/013 or close to the presumed entrances, such as G030 and G046. However, no evidence for internal hearths or other structures was identified. Where it is possible to determine, the entrances face east or south-east. This preference has been observed on many sites of the period, both within the east midlands for example at Manor Farm and Beaumont Leys (Thomas 2011, 153) and further afield (Willis 1997, 208), it has now been observed on so many sites that it may be perceived almost as a cultural norm (Speed 2010, 48) and it is perhaps the exceptions that are of greater interest.

Estimation of size, based on the projection and best fit of the surviving gully sections, suggests that the diameter of the ring gullies ranged from 8.3m-13.6m, with an average (mean) diameter of 10m. This accords with average diameter of 10m noted by Speed (2010, 45) in his study of Iron Age settlements in Leicestershire and Northamptonshire. At Waterfield Place, the smallest examples were G013 and G014 and the largest was G042. At early-middle Iron Age settlement, Beaumont Leys, roundhouses measured between 5m and 9m in diameter, while those at the mid-late Iron Age site at Manor Farm were larger at 9.5m to 13m (Thomas 2011, 153). At Beaumont Leys post-holes suggested external porches (ibid, 153). Projecting gullies observed on roundhouses G012 and G014 may indicate a similar arrangement.

Dating, based on pottery evidence, places them all within the mid-late Iron Age, yet it is clear that they were not all in use at the same time. There are two examples of concentric ring gullies; G030 and G046, present on opposite sides of the site. In some cases two different ring gullies occupy virtually the same space, suggesting that one replaced the other. For example, G008 was replaced by G009; while on the other side of the site, G032 was earlier than G033. G013 (the inner ring gully) within enclosure G021, was later than G012, suggesting this location was occupied long enough to require a rebuild. G001, an extremely truncated gully located on the eastern edge of the excavation area, was directly south of G002, a complex series of ring gullies with multiple recuts, which could potentially represent a large roundhouse, with a diameter of over 13m. The feature exhibits a change in the location of the entrance, which at some point faced west. Unfortunately, the structure was only partially exposed.

### ***Spatial reorganisation***

Differences between the roundhouses were apparent in terms of their spatial relationships with other features, suggesting a substantial reorganisation of the settlement. The sequence of events therefore suggests that early forms of the settlement consisted of a series of unenclosed dwellings, later succeeded by a series of roundhouses within enclosures.

Ring gullies that do not appear to be associated with any of the enclosures include G008; G009, G030 and G032 (Figure 59). Projecting the arc of their gullies shows that they could not have existed at the same time as the enclosures. For example, G030, consisting of concentric ring ditches and associated post-holes, cannot have been in existence at the same time as G015. Even within this sub-phase, not all the roundhouses were contemporary, which makes it difficult to assess how many household groups may have been living there at any one time.

Other ring gullies, for example, G006, G014, and G012/013 are apparently located within sub-square enclosures; G020, G023 and G021, respectively. Similarly, the position of ring gully G007 suggests an association with linear boundary, G027. It is tempting to interpret these enclosed roundhouses as part of a later phase of activity and indeed there is some evidence to support this view. For example enclosure G021 (associated with ring gullies G012/013) truncates earlier roundhouses G042 and SG1962. Similarly, ring gully G006, within enclosure, G020, appeared to be later than an oval enclosure G019, which is not itself thought to be an early feature.

Ring gullies G012 and G013 are perfectly centred within sub-square enclosure G021, which takes a prominent position towards the north-west of the site. However, the enclosure had a complex stratigraphic history, indicating that it was created through numerous digging events. Some sections, including the south-eastern terminal and a pit at the north-west terminal, contained Iron Age pottery only, while pottery of the 1st century AD was recovered from the north, west and part of the southern arms of the feature. It is therefore concluded that the feature was originally constructed in the mid-late Iron Age, contemporary with G012/013. However, it was maintained and re-cut continuing with a new purpose into the late 1st century AD, even after the demise of the roundhouses.

A subsequent reorganisation of the site appears to signify a change in function, with the development of a series of larger and more substantial enclosures, which truncate several of the ring gullies. Roundhouse G032 is likely to pre-date the shallow rectangular enclosure G016 at the northeast of the site. Similarly G006, while appearing to post-date the oval enclosure G019, could not have existed at the same time as large central enclosure, G015, although this relationship is rather more problematic (see below). Towards the south and west of the site, G014, G025 and G046 were truncated by enclosure G018; while G042 and SG1962 were both truncated by enclosure G021.

### ***Earlier activity towards the north-east of the site***

While the archaeology at the north-east of the site does not have the same level of complexity as further south, there are a number of intercutting features to be unpicked. A pair of curving ditches, G010 and G31, can be seen to echo each other's shape, suggesting that they were both present on site at the same time. G031 was the inner ditch and they were separated by a distance of between two and four metres at various points around the circumference. The entrance to both ditched enclosures faced east and was wide, therefore could have allowed



unrestricted access. However, the east side of these features is slightly problematic. The curve of partial ring gully G033, interpreted as a roundhouse (see previous discussion), aligns with the curve of G031, although does not match it in profile. Another gully, G040, orientated broadly north-south, was located just east of the open entranceway of G031. Unfortunately little of this feature was visible having been badly truncated by a furrow. However, it is conceivable that it was associated, perhaps forming part of an entrance to the enclosures (Figure 60).

There was only one phase to outer ditch G010, however inner ditch G031 was recut at least once, although not along its whole length. The core of the G031 appeared to be a ditch that was narrow but quite deeply cut, compared with many other features on the site. It had an uncertain relationship with a wider more shallow and non-continuous ditch noted in several locations including the south-eastern terminal. This location was the focus for several unusual depositions. A small pit (SG1467) within G031 had an extremely charcoal-rich fill, evidently containing waste from a burning event but with no other finds. An articulated dog skull and mandibles were placed on their side close to the base of a deep pit, SG1260, located between the north sides of G010 and G031. There was a prone human burial within the southern terminal of G031, apparently part of a tradition for the deposition of human remains in pits or ditches (see below for further discussion). A radiocarbon date indicates that the individual died in the 1st century BC, implying that the feature was out of use by this time.

On balance, this feature is likely to fit in with the earlier part of the mid-late Iron Age sequence. The only place where G031 intersected with G015 large central enclosure was on the east side, where G015 truncated the south-western terminal of G031. Therefore G031 was unlikely to have been in use at the same time as G015. The pottery from the terminal of G031 included sherds dated to the early or early middle Iron Age, also suggestive of an earlier date.

### *Enclosures and boundaries*

The concentration of activity on the eastern edge of the site demonstrated that the archaeology continued beyond the edge of the excavation. In addition to ring gully groups, G001 and G002, there were numerous post-holes, mostly fairly shallow. A group of sinuous curvilinear gullies, G003, ran on a broadly northeast-southwest alignment for a distance of at least 35m, appearing to slightly turn to the east at the northern end. Close to the southern edge of excavation they truncated a set of curving ditches, G004. The individual gullies of G003 were narrow with flat bases and seem more likely to facilitate drainage or be associated with planting or agriculture than to form a territorial division. Unfortunately too little of the ground plan remains to indicate whether they have an association with the ring gullies seen in this area.

#### *Circular enclosure G015*

A large sub-circular enclosure, in the centre of the site, G015, was the focus for considerable labour in terms of digging and backfilling. G015 was a complex feature, formed of multiple intercutting ditches and gullies with V-shaped profiles. It had a minimum internal diameter of c.15m and a maximum diameter to the external edge of c. 26m, enclosing an area of c.280 square metres at its maximum extent. One of the more striking aspects is the apparent lack of an entrance (Figure 61). However, closer examination of the structure revealed that it was

probably constructed of quite short discontinuous ditch lengths, terminating abruptly but a new ditch beginning again within a very close distance. This makes it entirely conceivable that the entrance changed, possibly several times, over the lifetime of the feature. The most obvious location for an entrance was facing south-west, where the feature diverges, indicating that remodelling has taken place. Alternatively, the centre of the enclosure could have been reached by means of a simple bridge or causeway. The multiple recuts imply longevity, asserting the continuing importance of this feature to the settlement. The concentric ditches do not always intercut (Figure 12), suggesting that the boundary may have concurrently featured more than one open ditch. There are few internal features, which indicate that this is most likely to represent a stock enclosure, albeit a rather prominent one.

There is some ambiguity regarding where the feature fits chronologically within the settlement. The sub-circular group to the north, G010, was apparently truncated by G015, while ring gullies G006 and G030, to the south and east, are also stratigraphically earlier. Therefore, it could not have been in use for the entire lifetime of the settlement. Pottery recovered from the feature simply supports the backfill dates as the mid-late Iron Age. The feature evidently fell out of use towards the end of the Iron Age, with the establishment of a new enclosure, G005, which truncated the west side of G015.

### ***Sub-rectangular enclosure with post-built structure***

In the north-east corner of the site, a rectangular post-built structure, G011, was positioned within the centre of a shallow sub-rectangular boundary, G016 and G041 (Figure 61). These groups were among the more enigmatic features on the site. The enclosure G016 was composed of a series of shallow, flat-based, ditch sections with rounded terminals. G041 was of similar form and may represent a detached section of the same enclosure. This feature truncates the earlier enclosure G031 and also contains pottery sherds associated with later Iron Age activity (E. Johnson pers. comm.). The available evidence therefore suggests that the rectangular structure and its enclosure post-date the use of the concentric ditches, G010 and G031.

Excavation indicated that there was often more than one recut within G016, indicating maintenance over a period of time. In several locations, flat-based depressions or post-holes were noted within and beside the base of the ditch. Despite its shallow depth, the feature showed up as a strong anomaly in the geophysical survey (Figure 5). At face value, the shallow depth of the post-holes is puzzling, as they are unlikely have held a post. Topsoil and subsoil were particularly shallow over this part of the site and therefore extensive truncation is suspected. However, even allowing for the probability that only the base of the feature has survived it seems unlikely to have ever been of substantial depth, in comparison with the other enclosures. This non-continuous boundary would appear to have had little success in keeping anything either in or out. Surviving archaeological features on sites such as Waterfield Place tend to be deeply-cut ditches, pits and post-holes. Yet the appearance of the living site must have been shaped by a wealth of other features, such as man-made banks, palisades, screening or hedging, which would have left few discernible remains in the archaeological record. The feature clearly delineates an area and so was probably formed in a way that did not leave deep traces.

Central to the enclosure was a post-built structure, orientated north-east to south-west and with a main rectangular space measuring c 5.5m x 3.5m. The structure extended out on the

north-west side by approximately 2.5m wide. There were no apparent internal features; an undated charcoal-rich pit/post-hole, was located just off the line of the northern wall but lacked significant charred plant remains and contained nothing else of note. One of the post-holes cut a pit (SG1841), which had evidently been backfilled before the structure was constructed. The amount of space between the boundary and its central structure is notable.

Rectangular structures are not unknown from this period, particularly on the Continent but they are rare in the region. Rectangular buildings have been identified at Leicester (Clay 1995) and at Normanton le Heath, where they were represented by a mixture of beam slots and post-holes (Thorpe *et al* 1994). At Cadeby, Leicestershire, two sub-rectangular structures also comprising beam-slots and post-holes were excavated (Speed 2011). One measured 11m x 5.5m, while the second was 8m x 4.5m and they were associated with cereal remains, possibly indicating an agricultural function (Speed 2011, 94). The pottery evidence dated the structures to the early or mid-first century AD, a time in which Roman cultural influences would have been prevalent (Speed 2011, 93). Further examples defined by beam-slots and dating to the 1st century AD are known from excavations prior to the Rearsby bypass (Clarke and Beamish 2008, 17, 25). Unlike these examples, the Waterfield Place structure was entirely constructed from posts, rather than posts and sill beams. Rectangular post-built structures were recognised at the early-middle Iron Age settlement at Beaumont Leys, although these were larger than the Waterfield Place structure, measuring 12m x 6m; 11m x 5m and 7m x 3.5m (Thomas 2011, 17-19). In the similar absence of any definitive finds or environmental evidence, they were interpreted as byres or stockades for cattle (Thomas 2011, 155). The somewhat smaller size of the Waterfield Place example suggests that it could be an unusual dwelling or a small stockade.

### ***Later ditched enclosures***

An oval ditched enclosure, G018, with a relatively narrow entrance to the north-east appeared to be one of the later features, truncating a number of ring gullies and earlier ditches. Unlike some of the other enclosures, it seemed to have only a single phase.

The enclosure replaced ring gully G006, which had previously occupied this location. There were no obvious internal features, with the exception of a pit group G026, which could potentially belong within the south-east corner of the enclosure. A stratigraphic conflict with some of the other nearby features argues against this, however. The pit group was truncated by G027, a linear boundary possibly associated with ring gully G007. The same boundary, G027, was itself truncated by G018. This suggests that the pit group, G026, must pre-date G0027 and, by implication, G018.

A larger enclosure, G005, was excavated to the north-east of G18 and the spatial relationship and similarity in form is undeniable (Figure 62). G005 has a narrow entrance on the west, facing and open to that of G018. The enclosures are almost mirror images: G018 is the smaller of the two, enclosing an area of *c.* 265 square metres, compared with the *c.* 332m encircled by G005. Like G018, enclosure G005 had few discernible internal features and none that are definitely associated with its use. Despite a different backfill date, a group of post-holes in the entrance, G038, including a possible hearth, appear to be concentrated between the two terminals. It is therefore possible that they are associated with restrictions at the entranceway during early use of the feature (however their proximity to earlier features such as ring gully group G007 should also be considered).

Although the creation of the two enclosures could be contemporary, there are clearly some major differences regarding their period of use and subsequent abandonment. Neither enclosure ditch exhibited evidence for extensive re-cutting. Unlike G005, enclosure G018 was backfilled before the end of the Iron Age. Although chronological distinctions of mid-late Iron Age pottery are currently tenuous, the assemblage contained sherds believed to belong to the later part of the period (E. Johnson this report). By contrast, the backfilling of the larger enclosure, G005, took place in the late 1st century AD. The absence of transitional wares from the backfill of G018 indicates that it may have fallen out of use decades before G005. At the very least, this illustrates the reduction of activity on the site at the dawn of the new millennium.

### *Activity in the Transitional period*

By the 1st century AD, most features on the site were backfilled, perhaps deliberately. For example, enclosure ditch G015 must have been filled in prior to the excavation of G005. There are faint hints of activity on the east of the site; two isolated post-holes contained Belgic pottery and a stretch of gully, aligned north-west to south-east had a mid-1st century date. None of the structures associated with dwellings are still extant, however some of the enclosures must have remained in active use.

A partially-exposed enclosure ditch, G028, and boundary ditch, G029, on the west of the site, almost certainly had their origins in the Iron Age. G028 had been recut several times but the recovery of mid-1st century pottery, in addition to Iron Age material, showed that the enclosure was not finally abandoned until the last decades of the site's use. G029 represented the western-most feature and its substantial size (surviving width was 2-3m and depth was 1.2m) suggests that it may define the western extent of the settlement. It too showed signs of multiple episodes of backfilling and re-digging and had been remodelled at its northern terminal. Sizeable pits were noted around the terminal. Little pottery was recovered but included sherds dating to the mid-late Iron Age, Belgic and mid-1st century AD.

On the southern edge of the site, in an area formerly densely occupied, two other enclosure ditches, G034 and G035 survived into the later period. G035 appeared to have been backfilled first, with the inner enclosure, G034 kept open for a longer period, before finally being filled in by the mid-1st century AD.

The sub-square enclosure, G021, is likely to have been in use into the transitional period. In common with many enclosures on the site, G021 was demarcated by multiple, intercutting ditches. It originally enclosed roundhouses G012/013, and both they and the enclosure's southern terminal appeared to have been backfilled by the end of the Iron Age. With this exception, mid and late 1st century pottery was recovered from several sections along all arms of the enclosure. An extension to the enclosure (G022) was created, running from the south-western corner of G021, running southwards beyond the edge of the excavation. This suggests later reuse and effectively remodelled the enclosure to form a new north-south aligned boundary. The final backfilling took place before the beginning of the 2nd century AD, contemporary with the backfilling of G005.

Overall, there was a decline in activity in the later site, with fewer enclosures in use. The remodelling of G021 suggests a brief resurgence of activities but total abandonment of the site cannot have been too far behind.

### ***Backfilling, function and internal organisation***

The character of the settlement is defined by the intensity of activity needed to create multiple dwellings, pits, post-holes and enclosures and to re-shape the settlement at various intervals. The Iron Age activity is at its most dense on the south side of the site and there are a series of joined enclosures of differing shapes. Since not all the features were in use at the same time, it stands to reason that deeply-cut features would have been deliberately backfilled, rather than waiting for them to silt up naturally. Pits would presumably have been used for storage, followed by rubbish disposal, but ditches and gullies too must have been deliberately filled in. The obvious example of this on the site is the replacement of enclosure G015 with the later enclosure G005. It is likely that this was largely achieved through the backfilling of the adjacent bank, which would have incorporated cultural debris into the backfilled ditch.

Not all the ditches across the site had the same profile - some were V-shaped, others U-shaped, while others had flat bases and were shallow. The deeper ditches would have formed an effective barrier; their bases would have reached the water table and their depth increased by the excavated soil, which was probably banked up on the inside of the ditches. The larger sub-circular enclosures such as G015 and G028 are composed of several intercutting ditches but when there were recuts potentially happening some time apart, a similar profile was often excavated. This has been noted at other sites too, leading to suggestions that social convention and belief decreed the 'correct' shape to perform a particular function (Rees 2008, 73). This notion ties in with other indications of conformity surrounding Iron Age settlement architecture, such as the right way to orientate an entrance, as previously discussed (Speed 2010).

### ***Everyday activities***

The lack of chronological distinction on the site unfortunately prevents the emergence of fine detail from study of the finds assemblages. Despite the evidence for settlement reorganisation within the mid-late Iron Age, we are unable to establish the duration of use for various roundhouses and enclosures. Everyday items such as pottery and bone fragments form the bulk of the finds assemblages, supplemented by evidence from an extensive bulk sampling programme. Although some features contained greater quantities of finds per volume of soil than others, finds were generally widely distributed. In the first instance, domestic waste generated at the settlement is likely to have been deliberately deposited in pits or tipped into open ditches. It will also have found its way into other open features, through a myriad of processes, such as deliberate disposal, relocation by dogs and other scavengers, the cutting or re-cutting of features and the deliberate backfilling of others. All these processes will, to a certain extent, have homogenised the assemblages and mean that few will be the product of primary deposition. The fills of many features were quite dark in colour, compared with the natural subsoil, suggesting a high organic content and the inclusion of charcoal and ash. It is also notable that most processed samples contained charcoal, even when more diagnostic finds were not present. A small number of features across the site contained sufficient burnt material to distinguish them from the others. However, few of these features were located in a position that clearly linked them with a dwelling or other structure. An apparent post-hole in the entrance of G005 (SG1537) contained redeposited scorched clay

and ashy material and was adjacent to an area of scorched clay (SG1538), which may be the hearth itself. Two ill-defined areas containing scorched stones were located in areas enclosed by G021 (SG2017) and G018 (SG1589) but in both cases only the very base of the feature remained. However, the presence of fires and cooking activity was illustrated by the inclusion of fire-cracked pebbles in numerous deposits across the site.

### ***Crop processing and production***

Evidence for crop cultivation and processing on the site comes primarily from charred plant remains retrieved from soil samples, supplemented by a small number of querns fragments. A complete rotary lower stone (SF3) was recovered from a pit (SG1579) associated with the terminal of the square enclosure, G021 (Hearne, this report). This may suggest deliberate placement, reflecting the importance of a vital piece of equipment. The quern had an upper grinding face, which was worn smooth, indicating that it had seen much use. The conical grinding surface, the stone's dimensions and characteristics of its spindle socket suggest it is a pre-Roman Wessex- or Sussex-type beehive quern, as defined by Curwen (1937, 1941). An unstratified fragment, representing a rotary quern upper stone, with a grinding surface is worn flat was recovered from the area within G016/ G011. Both fragments were made from variable Millstone Grit, which most likely originates from the Namurian sedimentary units of the Pennines and Peak District, from which grinding stones have been extracted since the early Iron Age (Peacock 1980; Ingle 1994; Roe 2000; Cool 2006). Hearne comments on the lack of evidence for querns, in view of the size and density of the settlement at Waterfield Place but notes that this is not unusual, compared with other sites in the region; some contain no querns at all (this report). For example, there was a notable lack of querns at either of the Iron Age and Roman settlements at Mawsley (Harvey 2012, 190). There are a number of possible explanations for this under-representation; a larger assemblage of originally complete querns may have been broken up into smaller fragments before deposition, decreasing their chances of recognition during excavation. Unlike pottery or bones, querns are unlikely to have been present in large quantities, therefore in the absence of 100% excavation it is largely down to chance as to whether an excavated section will yield a fragment. Querns may have been used for a long time and may also have been the type of object that people took with them when they abandoned a settlement. An emphasis on a pastoral economy may also be indicated by apparent low numbers of querns.

Charred plant remains were recovered from all areas of the site in the majority of mid-late Iron Age samples were present only in small quantities, which suffered from poor preservation, burning and distortions. However, twelve samples contained high densities, resulting in some useful data. Grain was present in 70% of samples with charred plant remains, showing that a range of cereal crops were cultivated. Glume wheat grains dominated, however, wild or cultivated oat and barley were also present. The removal of the hull from most barley grains suggested that was cultivated for consumption, rather than intended for animal fodder or brewing. The samples generally represent domestic waste from crop processing for food and mostly represent the later processing stages, such as sieving and hand-picking. One sample taken from a short gully found close to the entrance to a roundhouse (G012- sample 52) is a cleaned grain product which could represent food spillage or small batches of grain that were accidentally burnt (Small, this report). Chaff was present in 58% of samples and, where it could be identified, predominantly belonged to spelt wheat, which is generally the dominant crop for Iron Age sites.

Greater density of remains appears to indicate that activities associated with crop-processing were taking place around the entrance to enclosure G018, which is likely to have been backfilled in the later part of the Iron Age. There are also increased levels of activity around G012 and G013 and in pits located within enclosure G021. The increase in 'good' samples from the later features may indicate that there was a greater emphasis placed on agricultural production towards the end of the site.

Utilisation of wild foods is indicated by the presence of charred hazel nut shell, sloe stones and hawthorn pips. Brassica seeds may represent cultivated vegetables but it must also be noted that these plants are prolific weeds of arable fields. Other edible plants included wild radish, nettle, and goosefoot however they are also known to have medicinal properties, which could be another reason for their presence.

Crop processing in the early Roman period at the site did not differ substantially from that of the Iron Age, with emmer/spelt wheat grains most common. However, three potential free-threshing grains of bread wheat type were present in the northern terminal of enclosure G005. Bread-wheat generally occurs in small numbers in assemblages dating to this period and earlier but became the dominant type in the Anglo-Saxon period (Van der Veen 1996). Barley grains were also common. The continued exploitation of wild resources was demonstrated by the presence of a hawthorn pip from enclosure G005. Weed seeds associated with cultivation were similar to those noted among the Iron Age material, with the addition of onion couch grass, heath grass and chickweed. The samples represent domestic waste from later stage crop processing for consumption and it is suggested that the remains gradually accumulated in the open ring ditch. The evidence therefore suggests continuity of farming practices across the mid-late Iron Age and Early Roman periods.

### ***The role of animals***

The inhabitants of the site appear to have pursued a mixed economy based on both agriculture and animal husbandry but perhaps with an emphasis on the latter. Almost 90% of the faunal assemblage was recovered from features of mid-late Iron Age date, with the remainder divided between the Belgic/transitional and features of the 1st century AD. The animal bone assemblage produced a typical range of domestic animals for a mid-late Iron Age site, with cattle, sheep and pig accounting for 96% of the identified bones. Other taxa, including horse, deer, dog and duck are represented by a small number of bones. Across the assemblage cattle and sheep were the most common species, with considerably fewer pig bones. The faunal evidence suggests that lamb/mutton and beef were most commonly consumed; although the ratio of sheep to cattle appears to have been slightly higher, it is likely that beef would have formed the largest part of the diet, since it has been estimated that one cow would provide the equivalent meat yield of ten sheep (Harcourt 1979, 155).

The age profile of the three main species suggests that, particularly for sheep and pigs, meat was more important than secondary products, such as milk, wool, manure or traction. The killing of sheep before they were fully mature has been noted on other sites of the period and has led to suggestions both that sheep were numerous but there were difficulties in maintaining large flocks over the winter months, leading to an autumnal cull (Albarella 2007, 394). There was a high level of cattle mortality among adult beasts but also a tentative hint that the slaughter pattern was shifting to older animals among the transitional material. Neonatal bones are often taken to imply evidence for animal breeding and, at Waterfield Place; a small number of such bones were recovered from all three of the main species. They

were distributed in deposits across the site; therefore do not define the focus of this activity. Very young bones are more porous and fragile than adult bones and therefore more susceptible to destruction; it can be assumed that they are under-represented in the assemblage.

In the Iron Age assemblage, all regions of the cattle and sheep skeletons were represented, indicating that animals were raised, butchered and consumed on site. In both cases, the most common elements were the mandible, radius, tibia and metapodials, in addition to the sheep humerus. Sheep mandibles were particularly common. However, the common elements were generally those that were most robust, suggesting that the surviving assemblage has been strongly influenced by preservation. The pig carcass was not so well-represented but all anatomical regions were present. A similar pattern is implied for the 1st century AD material, despite lower numbers of bones.

Fine cut marks were observed on the extremities of cattle, sheep and pig, suggesting that the hides and skins were utilised. Bone working was unusual at the site; red deer antler had saw marks, implying use for object manufacture; one fragment had been worked into an implement which was polished through extensive use and may represent part of a comb (however not all its features fit with this interpretation). Two gouges, fashioned from sheep tibiae were recovered from a pit in G026 (1465) and a post-hole in G011. These are common objects among larger Iron Age assemblages and probably had multiple functions. The high level of polish found on the surfaces suggests contact with skins or threads. Parallels with Danbury hillfort suggests that they could date from any time in the mid-late Iron Age period.

### ***Pottery and Trade links***

The Iron Age pottery was locally produced, consisting primarily of shell-tempered fabrics typical of assemblages from south east Leicestershire and Rutland, such as Empingham (Cooper 2000, 67), Whitwell (Todd 1981, 23) and Oakham (Johnson 2015). The source of the shell inclusions were most likely the local outcrops of Lincolnshire limestone (Marsden 2000, 173). By contrast, assemblages from central Leicestershire, such as Humberstone (Marsden 2000, 2011), Wanlip (Marsden 1998a) and Birstall (Marsden 2009), tend to be dominated by granitic-tempered wares, due to proximity to the Charnwood Forest outcrops. Meanwhile, quartz-sand tempered wares are the norm for sites north of Leicester, where the underlying geology is quartz pebble bed, for example Lockington (Johnson 2011) and Gamston (Knight 1992). However, despite variations in fabric, the vessel forms and decorative styles remain comparable, supporting the idea of local production within a tradition or style produced throughout the East Midlands in this period (Elsdon 1992a, 84). Small numbers of granitic rock tempered vessels, most notably two small handle-less cups from SG1491, therefore suggest trade from elsewhere in the region. Parallels for the cups are known from the early-middle Iron Age site of Biddenham Loop in Bedford and from the Hunsbury Hillfort site in Northamptonshire, which had a large assemblage of middle-late Iron Age La Tène curvilinear decorated pottery (*Ibid*; Elsdon 1992a, 89-90).

The Roman pottery was also dominated by shell-tempered and early sandy wares produced locally. A few imported wares were present, including a samian ware cup from South Gaul and a white ware flagon from the Verulamium region. Some of the grey wares could also be from Northamptonshire and resemble examples which have also been noted at Mawsley New village (E. Johnson pers. comm.).



Unfortunately pottery of the mid-late Iron Age tends to have little variety in terms of vessel types and Waterfield Place is no exception; jars and bowls are the basic forms. The two miniature cups from SG1491 are a rare exception, and may have been procured for a particular purpose, although it is not clear exactly what. Although there is little evidence for specific function, it is generally thought that the pots had a multitude of purposes such as storage, cooking and, possibly, as eating and drinking vessels. Occasionally, sherds with a build-up of carbonised residues or limescale are found, showing that they must have been used for cooking and boiling (e.g. Marsden 2011, 65), although this has not been seen at the current site. The nature of dining in this period is still poorly understood but it is thought that many drinking vessels and platters must have been made of perishable materials, such as wood or leather. One of the main distinctions between Iron Age and Roman culture was an increasing diversity of vessel forms for more specialised purposes (E. Johnson pers. comm.). The beginning of this change is seen in the 1st century assemblage at the site, with the occurrence of storage jars, a flagon, a cup and beakers in various fabrics.

### ***Craft-working and industrial processes***

Evidence for industrial processing on a small scale was encountered in eighteen contexts across the site. For the most part this consisted of undiagnostic fuel ash slag, which could have been formed by a variety of processes (Addison, this report). The curving side of a bowl-shaped hearth or furnace measuring 400mm in diameter, was found in a context belonging to ring gully G002 (1112), on the eastern edge of the excavation area. The furnace fragment was heavily vitrified and had been re-lined several times but had no evidence of metallurgical activity. However, a fragment of tap slag, suggestive of iron smelting and, several examples of fuel ash slag were found within the same group (G002), thereby hinting at small-scale metal working in this area.

Hearth or furnace lining was recovered from enclosure G019 (SG1254), which also contained vitrified pottery- clearly exposed to high temperatures. Hearth or furnace lining fragments, showing extreme vitrification with some surface glazing, were identified in nine contexts, nearly all ditch fills; G002, G015, G019, G020, G021, G022, G023 and G029. In addition to G002, evidence for iron smelting tap slag was also recovered from the surface of early Roman enclosure G005, along with fayalite (iron rich) slag from context (1553) (pit SG1554). However, an absence of ore and other associated debris make it evident that metal-working was taking place on a small, presumably domestic scale. Although is not unusual for this period, it contrasts with some other sites such as Elms Farm and Manor Farm, Humberstone (Thomas 2011, 149), Coton Park, Warwickshire (Chapman 1998, 5) and Birstall (Speed 2009, 36) where distinct metal-working zones were identified. It is thought likely that metal-working was a highly specialised activity carried out by itinerant smiths, who may travelled to rural settlements to carry out repairs and forge new tools for the inhabitants (Condon 1997, 5).

In the later period, square enclosure G021 and its remodelled boundary, G022, appear to be a focus for a number of fragments of hearth/furnace lining and fuel ash slag, which were found in ten sections along ditch enclosures. These finds imply that non-specific work involving metal-working (or even pottery-firing) was taking place within the enclosure and, following

the cessation of the process, fragments were distributed into the ditches or incorporated during deliberate backfilling.

### *Unusual deposits*

The ritual life of prehistoric settlements has been well-attested in various studies, often termed structured deposition (e.g Hill 1993; 1995; Garrow 2012) and at Waterfield Place some deposits hinted at the spiritual or symbolic life of the community.

The deposition of a complete sheep within a pit, SG1597, at the site was radiocarbon dated to the Bronze Age. Although it was physically within the boundary of enclosure G015, the pit could not be correlated with activity taking place within the enclosure, which appeared to date from a later period.

During the evaluation at Waterfield Place (Harvey 2011), two complete miniature hand-made vessels were discovered at the base of a feature, initially interpreted as a gully but which was later found to be a shallow elongated pit (SG1491), located close to the northern terminal of G021. They were 30mm high and 35mm in diameter and are described as handle-less cups or thumb pots, with plain upright rims and were formed from a granitic rock tempered fabric (Cooper 2011, 37). They appeared to have been carefully placed in an upright position within the feature. Parallels are known from a middle Iron Age assemblage at Biddenham Loop, near Bedford and Hunsbury, Northamptonshire (ibid 37). As previously noted, granitic tempered fabrics were rare on the site suggesting that they had been traded or brought in from elsewhere; locally made wares were generally shell-tempered. Neither of the two vessels contained any finds or macroscopic residues which might suggest what they were used for. However, two carefully-placed unusual vessels, in a non-local fabric, without the normal domestic detritus does present a meaningful deposition.

SG1579 was a deep pit located at the terminal of the square-enclosure G021. The feature contained a complete rotary quern lower stone. The unusual depth of the pit and the paucity of quern fragments from elsewhere may suggest a non-functional interpretation, especially as it would appear to have been deposited before the end of the settlement. It is tempting to speculate that the quern was placed in the pit before G021 was remodelled in the final phases of the site. However, no corroborative evidence was forthcoming in this case either.

The only human bones on site consisted of a largely complete skeleton recovered from the terminal of the inner ditch of a circular double-ditched enclosure, G031. The bones were radiocarbon dated to  $2033 \pm 29$ , with a 95% probability of dating from 114 cal BC to 30 cal AD. The date of death suggests that G031 had fallen out of use by the 1st century BC, when the individual was buried, which accords with its stratigraphic position as one of the earlier features. The individual appeared to have been deposited whole and in a prone position, but had suffered plough damage in the medieval period, resulting in fragmentation and the loss of some bones from the lower limbs. In spite of this, preservation was sufficient to allow some details of the individual's life and health to be established. Analysis suggested that the skeleton belonged to a male, approximately 169.5cm tall (5'7"), aged approximately 36 to 45 years, who may have led a physically active life (M. Holst, this report). Pathological analysis revealed alterations to the shape of the femoral neck, which may have caused a limp, while other abnormalities included lesions in the roof of the orbits suggesting general nutritional stress in childhood. He had a well-healed 'parry fracture' on the distal shaft of his right ulna, typically associated with interpersonal violence and often sustained during the act of raising

an arm in self-defence. There was also a well-healed fracture to his little finger. Degenerative changes to the individual's shoulders, elbows, spine and right hand are likely to have been age-related and Schmorl's nodes on the vertebrae may have been caused by physical stress to the spine. Analysis of the skeleton's dentition revealed slight to moderate deposits of calculus on his teeth and moderate periodontal disease. However, he had a number of dental abscesses and it is likely that one of these had caused chronic sinusitis (M. Holst, this report).

Iron Age attitudes to the treatment of their dead are still poorly understood and few burials are visible in the archaeological record. Human remains are found in various archaeological features and fall into various categories, including whole bodies, partial skeletons, multiple burials, skulls or skull fragments, pelvic bones and other individual bones (Craig *et al*, 2005, 166). The distribution of human bones and lack of formal cemeteries has suggested to many that excarnation, perhaps with cremation were common burial rites, leaving few archaeological traces (Willis 2006, 117). The purpose of the four-post structures found on Iron Age sites is thought to have been excarnation platforms (Craig *et al*, 2005, 166). Complete or partial skeletons on Iron Age settlements are often found in pre-existing features such as pits or, as in this case, silted-up ditches (Parker-Pearson 1999, 5). Craig *et al* (2005, 166) noted that individuals buried in an unusual place or manner may represent outcasts or else indicate that they died in a circumstances that differentiated them from the rest of society. Since complete inhumations occur comparatively rarely, it has been suggested that these burials were not accorded the rites given to the rest of the population (Madgewick 2008, 111). Certainly the individual found at Waterfield Place does not seem to have been placed with overt care, however the location of the burial over the silted up terminal of an earlier structure must surely have been significant to the inhabitants of the settlement. Inhumations are comparatively rare in Leicestershire; however an Iron Age skeleton, probably representing the 'pit burial' tradition (summarised in Wait 1995, 492) was recovered from Rushey Mead (Pollard 2001). Unlike the Waterfield Place burial, this was accompanied by other items, including scored ware, a loomweight, sawn antler and charred plant remains. The diversity of burial practice is shown by late Iron Age cremations found at both Market Harborough (Liddle 1982, 27) and Enderby (Meek 1996).

A dog skull, with articulated mandibles, was deposited in a pit associated with the same enclosure as the human burial. This represents an unusual deposit, particularly given the paucity of dog bones among the general rubbish on the rest of the site. In the Iron Age dogs are frequently singled out for disposal in unusual or ritual contexts and are second only to sheep in this respect (Morris, 2010 181). There are numerous examples of dogs in pits or graves on sites in both Britain and Europe, for example, a number of dog burials, described as 'special deposits' were noted at the Iron Age hillfort of Danebury (Grant 1984).

## Conclusion

The archaeology of Waterfield Place has provided evidence for an Iron Age predecessor to the long-suspected Roman small town on the Ridgeway. Although only part of the settlement was exposed, many of the lost parts lying beneath housing of the 1980s, the excavations have offered a tantalising glimpse of an Iron Age settlement that was both complex and long-lived. There are hints of earlier activity but occupation appeared to be continuous between the early-middle Iron Age and the end of the 1st century AD. In general the picture is of a largely self-sufficient economy, based on evidence for agriculture and crop-processing, the raising of animals, with butchery and consumption taking place locally and small-scale metal working.

Overall, the emphasis appears to be on domestic scale activities; there is a lack of specialisation and traded goods were secondary compared to those produced locally.

The settlement appears to represent a small community rather than a succession of individual farmsteads. The life of the settlement apparently began with unenclosed dwellings, progressing to roundhouses within small enclosures, which suggested a social shift towards demarcating individual territories within the larger community. The creation and maintenance of new enclosures, mostly quite small, perhaps reflects the increasing importance of livestock farming. These may have operated concurrently with some of the roundhouses. The diversity of enclosure types, including concentric ditches, sub-square, sub-circular and oval enclosures, and a rectangular structure is notable.

In the late Iron Age, some enclosures become disused and were backfilled; the 1st century BC also witnessed the deposition of an individual in the terminal of a disused ditch. Activity seemed to be mostly associated with farming by this point, with no evidence for new buildings and included the remodelling of one of the western enclosures to form a linear boundary. This and a penannular enclosure in the centre of the site were the last features to fall out of use in the late 1st century AD. It seems likely that occupation had largely moved to the eastern end of the ridge amid the development of an adjacent Roman settlement, whose rise may be inextricably linked with the decline of the old community. Although information about the new site is incomplete, it may have had origins in the late Iron Age but developed as the preferred location. Liddle notes that the ridge was close to a river crossing and there are some tenuous indications of a Roman road (Liddle 2004, 65).

Waterfield Place seems, therefore, to have been subject to the same forces of change that altered patterns of occupation across the region in the 1st century AD. Sometimes settlements showed continuity of use through the transition, for example Holme Pierrepont and Dunston, Nottinghamshire (O'Brien 1979; Knight 1992), Wollaston and Earls Barton, Northamptonshire (Meadows 1996; Windell 1983). More often, however, earlier sites were abandoned while new sites emerged close by. A typical example is Weekley, where a long-standing enclosure system was in use until the late 1st century AD, however by the 2nd century, the enclosures were backfilled and a track and enclosure pen constructed; settlement itself shifted northwards with the establishment of a villa complex in the mid-2nd century (Jackson and Dix 1987, 62). A similar situation was seen at Oundle (Glaphorn Road) where an expansion of the enclosure system took place in the 2nd century and settlement moved northwards, finally resulting in the construction of a walled enclosure and villa in the 4th century (Maull and Masters 2004, 51-52). A site at Stretton Road, Great Glen was occupied from the mid-1st century AD onwards (Luke 2015, 6). By contrast, other sites were being abandoned, for example Higham Ferrers (A6 Bypass), a mid-late Iron Age site with enclosures that had developed by the 2nd century AD but witnessed little activity after this time (Mudd 2004, 67). Occupation at Mawsley New Village continued through the Iron Age and into the Roman period but perhaps in a reduced form from the 2nd century (Harvey 2012, 188).

Waterfield Place appears to have been a much larger and longer-lived settlement than has previously been examined in the Market Harborough area. A single farmstead enclosure at Airfield Farm to the west appears to have been occupied during the later middle Iron Age, the 2nd century BC. However, two further enclosure complexes with roundhouses and internal features have been identified by geophysical survey in this area (Butler and Fisher 2010) and

it will be very interesting to see how the dates and development of the settlement compare with Waterfield Place.

After occupation ceased, at the beginning of the Roman period, there was a gap before further activity was discerned. Two post-holes with Anglo-Saxon pottery suggest sporadic activity in the 6th or 7th century. By the medieval period the site was under agriculture, part of the south fields of Great Bowden, as attested by north-south aligned ridge and furrow, evidence of medieval strip farming. As far as could be ascertained from the remnants, the furrows were generally spaced at a distance of 4.5 to 6m apart. In the post-medieval period, the site was under pasture, later becoming a paddock, a state in which it continued until the current time.

## 9. Archive and Publication

The site archive (X.A78.2011), consisting of artefacts, paper, digital and photographic records, will be deposited with Leicestershire County Council.

The physical archive consists of:

- c.1086 context records (A5 sheets)
- 46 permatrace drawing sheets (A2 & A3)
- c.867 digital photographs
- 12 x 36 exposure monochrome photographs
- Pottery: 2 boxes
- Animal bone: 6 boxes
- Flints: ½ box
- Human bone: 1 box
- Other finds and residues; including environmental residues, charcoal, fired clay/cbm, slag/industrial residues, clay pipe, stone fragments and metal finds

A version of this report will be published in Transactions of the Leicestershire Archaeological and Historical Society in due course. The full report will be available online on the OASIS website.

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## 12. Oasis Information

Project Name	Waterfield Place, Market Harborough.
Project Type	Archaeological excavation
Project Manager	Patrick Clay
Project Supervisor	Jennifer Browning
Previous/Future work	Geophysical survey; trial trenching.
Current Land Use	Paddock
Development Type	Residential development
Reason for Investigation	NPPF
Position in the Planning Process	Post-determination
Site Co ordinates	NGR SP 735 883
Start/end dates of field work	29th July-13th October 2014
Archive Recipient	Leicestershire County Council
Study Area	c.1.2 ha.

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## Appendix Animal Bone Tables

Table 30: Distribution of hand-recovered assemblage (excluding furrows and tree-throws pits). Number of identified specimens for all phases

Taxa/ Phase	Burial	Ditch	Gully	Depression	Pit	PH	Ring Ditch	Ring Gully	Un- spcfd	Total
<b>cattle</b>	<b>1</b>	<b>123</b>	<b>83</b>	<b>2</b>	<b>55</b>	<b>29</b>	<b>65</b>	<b>44</b>	<b>12</b>	<b>414</b>
2 to 4	1	99	66	2	48	24	61	44	12	357
5		6	5		7	5				23
6		2	1				3			6
7		16	11				1			28
9										0
<b>dog</b>			<b>1</b>		<b>3</b>		<b>2</b>			<b>6</b>
2 to 4			1		3		2			6
<b>duck sp.</b>		<b>1</b>					<b>1</b>			<b>2</b>
2 to 4		1					1			2
<b>equid</b>		<b>12</b>	<b>5</b>		<b>4</b>		<b>1</b>	<b>2</b>		<b>24</b>
2 to 4		11	5		2		1	2		21
5					2					2
7		1								1
<b>goose</b>									<b>1</b>	<b>1</b>
2 to 4									1	1
<b>Indet.</b>		<b>70</b>	<b>33</b>		<b>15</b>	<b>29</b>	<b>12</b>	<b>70</b>		<b>229</b>
5		8	3		1	7				19
6		1								1
7		3								3
2 to 4		58	30		14	22	12	70		206
<b>lge mml</b>		<b>234</b>	<b>99</b>		<b>67</b>	<b>31</b>	<b>113</b>	<b>67</b>	<b>11</b>	<b>622</b>
2 to 4		189	79		62	23	109	67	11	540
5		7	9		5	8				29
6		3					3			6
7		35	11				1			47
9										0
<b>med mml</b>		<b>330</b>	<b>159</b>		<b>136</b>	<b>122</b>	<b>144</b>	<b>106</b>	<b>5</b>	<b>1002</b>
2 to 4		266	156		115	103	125	106	5	876
5		1	3		21	19				44
6		6					14			20
7		57					5			62
9										0
<b>pig</b>		<b>32</b>	<b>12</b>	<b>1</b>	<b>14</b>	<b>7</b>	<b>23</b>	<b>16</b>	<b>1</b>	<b>106</b>
2 to 4		29	11	1	12	3	21	16	1	94
5					2	4				6
6			1				1			2
7		3					1			4
9										0

Taxa/ Phase	Burial	Ditch	Gully	Depression	Pit	PH	Ring Ditch	Ring Gully	Un- spcfd	Total
<b>rat-size</b>								1		1
2 to 4								1		1
<b>red deer</b>		1	1			1				3
2 to 4		1	1			1				3
<b>sheep</b>		1				1		1		3
2 to 4		1				1		1		3
<b>sheep/ goat</b>	1	125	48		54	48	52	34	4	366
2 to 4	1	95	45		49	42	47	34	4	317
5		3	1		5	5				14
6		4	1				5			10
7		23	1							24
8						1				1
<b>Total</b>	<b>2</b>	<b>929</b>	<b>441</b>	<b>3</b>	<b>348</b>	<b>268</b>	<b>413</b>	<b>341</b>	<b>34</b>	<b>2779</b>

Table 31: Identified elements recovered during sieving by Phase

Taxon/Element	1	2 to 4	5	7	Total
<b>?dog</b>			1		1
1st phalanx			1		1
<b>cattle</b>		10	2		12
molar		3			3
occipital condyle		1			1
petrous temporal		1			1
skull			1		1
mandible		2	1		3
humerus		1			1
metapodial		1			1
3rd phalanx		1			1
<b>cf field vole</b>		1	1		2
partial skull		1			1
mandible			1		1
<b>cf water vole</b>		1			1
tibia		1			1
<b>med mml</b>		3			3
petrous temporal		1			1
caudal vert		1			1
2nd phalanx		1			1
<b>mouse/vole</b>		1			1
tibia		1			1
<b>mus sp cf house mouse</b>		1			1
pelvis		1			1
<b>mus sp.</b>		1			1

<b>Taxon/Element</b>	<b>1</b>	<b>2 to 4</b>	<b>5</b>	<b>7</b>	<b>Total</b>
mandible		1			1
<b>pig</b>		<b>15</b>	<b>2</b>	<b>1</b>	<b>18</b>
premaxilla		1			1
incisor		6			6
molar		1			1
premolar		1			1
tooth		1			1
scapula		2			2
calcaneum		1	2		3
metapodial		1			1
lateral metapodial		1			1
lateral phalanx				1	1
<b>sheep/goat</b>	<b>2</b>	<b>36</b>	<b>4</b>	<b>2</b>	<b>44</b>
palate		1			1
petrous temporal		1			1
premaxilla		1			1
zygomatic		2			2
incisor		4			4
ldp4		1			1
lm3		2			2
molar		6		1	7
premolar		2	1		3
atlas		1			1
mandible		4			4
radius		3	1		4
scapula		1	1		2
femur				1	1
tibia		2			2
metacarpal		1			1
metapodial		1			1
2nd phalanx	1	3	1		5
3rd phalanx	1				1
<b>Total</b>	<b>2</b>	<b>69</b>	<b>10</b>	<b>3</b>	<b>84</b>

Table 32: Toothwear stages recorded after Grant 1982 and age estimates after Moran and O'Connor (1994)\*\* and O'Connor 2003\*

<b>Phase</b>	<b>SG</b>	<b>G</b>	<b>ID</b>	<b>Context</b>	<b>Taxon</b>	<b>dp4</b>	<b>p4</b>	<b>m1</b>	<b>m2</b>	<b>m3</b>	<b>Age Estimate**</b>	<b>Age Stage*</b>
2	1212	4	217	1213	cattle			g	f			A
7	1396	5	1209	1395	cattle					b		A1
2	1471	38	1098	1471	cattle					c		A2
2	1064	2	33	1063	cattle					h		A3
2	1076	3	169	1140	cattle					g		A3
3	1187	19	1	1186	cattle			k	j	f		A3

Phase	SG	G	ID	Context	Taxon	dp4	p4	m1	m2	m3	Age Estimate**	Age Stage*
3	1579		656	1578	cattle					g		A3
4	1583	18	545	1582	cattle					g		A3
7	1581	21	1338	1929	cattle			l				A3
7	1457	5	1037	1456	cattle					j		E
2	1364		1145	1363	cattle	h		c				I
2	1268		301	1267	cattle	h						SA
3	1254	19	267	1253	cattle	k						SA
3	1455	10	1015	1454	cattle	g						SA
7	1581	21	1505	2021	cattle	k		f				SA
2			1142	1250	cattle				b			SA1
2	1290	15	364	1289	cattle					E		SA2
2	1302		457	1301	pig	f		c				I
			1524	1770	pig	a		V				SA1
2	1078		8	1077	sheep			h	g		2 to 4yr	A
2	1280	6	347	1279	Sheep			h	g		2 to 4yr	A
2	1280	6	491	1310	Sheep			g	g		2 to 4yr	A
2	1280	6	492	1310	Sheep			h	h		2 to 4yr	A
7	1457	5	1052	1456	Sheep			e	g		2 to 4yr	A
2	1084	37	57	1083	Sheep			h	f	d	18 to 24m	A2
2	1409	7	1168	1408	Sheep					d		A2
2	1876	16	1367	1875	Sheep					c		A2
7	1457	5	1053	1456	Sheep			g	g	d	2 to 4yr	A2
2	1013	37	29	1012	Sheep			g	f	f	18 to 24m	A3
2	1233		199	1232	Sheep			m	h		5 to 6yr	A3
2	1512		252	1512	Sheep					e		A3
2	1049	36		1048	Sheep					e		A3
2	1380	15		1379	Sheep					e		A3
2	1237	33	670	1753	Sheep			h	g	f	2 to 4yr	A3
2	1704		767	1703	Sheep					g		A3
2	1378		1129	1377	Sheep			l		h		A3
2	1401	26	1197	1402	Sheep					g		A3
2	1394	15	1230	1393	Sheep			h	g	e	2 to 4yr	A3
3	1187	19	103	1186	Sheep			j	g	f+	4 to 5yr	A3
4	1620	13	903	1618	Sheep					h		A3
5	1319	35	504	1317	Sheep					e		A3
2	1159		76	1158	Sheep				a			I
2	1510	7	630	1509	Sheep	g		e	C			I
2	1756		687	1756	Sheep	g		c				I
2	1756		688	1756	Sheep	e						I
2	1706		766	1705	sheep	f		b				I
2	1830	16	1413	1829	Sheep	f		b				I
4	1620	13	989	1618	Sheep	f		c				I
2	1292	15	409	1291	Sheep			g	c		18 to 24m	SA
2	1451	27		1450	Sheep	j						SA
2	1574	14	559	1575	Sheep	h						SA

Phase	SG	G	ID	Context	Taxon	dp4	p4	m1	m2	m3	Age Estimate**	Age Stage*
2	1574	14	573	1573	Sheep	f						SA
2	1614	12	949	1627	Sheep			f	c		18 to 24m	SA
3	1187	19	104	1186	Sheep	g		e				SA
4	1620	13	990	1618	Sheep	j		f	d		18 to 24m	SA
7	1959	22	1565	1958	Sheep	g						SA
1	1597		663	1595	Sheep		E	g	f	E	18 to 24m	SA2
4	1620	13	905	1618	Sheep	f		U				SA2

Table 33: Epiphyseal fusion for mid-late Iron Age bones (Phase 2-4)

Cattle				Sheep				Pig			
Element	Age (mo)	F	U	Element	Age (mo)	F	U	Element	Age (mo)	F	U
Pelvis (acet)	7-10	7	0	Pelvis (acet)	6-10	5	1	Scapula D	12	3	0
Scapula D	7-8	9	0	Scapula D	6-8	4	2	Humerus D	12	0	1
1st Phal P	13-15	6	0	Humerus D	10	6	0	Radius P	12	1	0
Humerus D	15-18	2	2	Radius P	10	5	2	Pelvis (acet)	12	0	0
Radius P	15-18	12	0	1st Phal P	13-16	3	3	2nd Phal P	12	0	0
2nd Phal P	18	6	0	2nd Phal P	13-16	1	0	Metac D	24	0	1
MetaC D	24-36	1	1	Metac D	18-24	2	3	Tibia D	24	0	1
Tibia D	24-30	7	2	Tibia D	18-24	9	1	1st Phal P	24	0	1
Metat D	27-36	2	0	Metat D	20-28	0	4	Calc P	24-30	0	2
Femur P	42	2	1	Ulna P	30	1	1	Metat D	27	1	2
Calc P	36-42	0	3	Femur P	30-36	0	0	Ulna P	36-42	0	2
Radius D	42-48	0	1	Calc P	30-36	1	0	Humerus P	42	0	0
Ulna P	42-48	0	1	Radius D	36	0	3	Radius D	42	0	0
Humerus P	42-48	0	1	Humerus P	36-42	1	1	Femur P	42	0	3
Femur D	42-48	1	1	Femur D	36-42	0	0	Femur D	42	0	1
Tibia P	42-48	3	3	Tibia P	36-42	0	2	Tibia P	42	0	0
Total		58	16			38	23			5	14

Key: F=fused; U=unfused

Table 34: Skeletal representation in the Mid-late Iron Age assemblage (Phase 2-4) (Minimum Number of Elements)

Anatomical Region	Element	cattle	horse	pig	sheep /goat	deer	dog	Lge mml	Med mml
	antler					2			
Head	horncore	3			4				
	Frontal/upper orbit	5		3			1		
	zygomatic	3			2		1		
	occipital	2			1		1		
	maxilla	3			4		2		
	mandible	9	3	2	24		3		
Vertebrae	atlas	1	1	1					
	axis		1						
	Cervical vertebra							2	2
	Thoracic vertebra							12	5
	Lumbar vertebra							1	2

Anatomical Region	Element	cattle	horse	pig	sheep /goat	deer	dog	Lge mml	Med mml
	sacrum								
	Rib (articulation)							7	6
Shoulder/hip girdle	scapula	8	1	7	10		1		
	pelvis	7		2	6				
Forelimb	humerus	8		7	15				
	radius	15	2	1	28		1		
	ulna	9		3	6				
Hind limb	femur	6		3	2				
	tibia	16		6	28				
	fibula			1					
	patella								
Feet	carpals/tarsals								
	astragalus	4			2				
	calcaneum	5		3	3				
	metacarpal	12		1	12				
	metatarsal	7		3	11				
	1st phalanx	11		1	7				
	2nd phalanx	7			1				
	3rd phalanx	7	1		1				
	metapodial	2	1	3					
Loose teeth		45	4	22	44				

Table 40: Skeletal representation in the Belgic assemblage (Phase 5) (Minimum Number of Elements)

Anatomical Region	Element	5					Lge mml	Med mml
		cattle	horse	pig	sheep /goat			
	antler							
Head	horncore							
	Frontal/upper orbit							
	zygomatic							
	occipital							
	maxilla							
	mandible	2			1			
Vertebrae	atlas							
	axis							
	Cervical vertebra					1		
	Thoracic vertebra						1	
	Lumbar vertebra							
	sacrum							
	Rib (articulation)						1	
Shoulder/hip girdle	scapula	2						
	pelvis	2						

		5					
Anatomical Region	Element	cattle	horse	pig	sheep /goat	Lge mml	Med mml
Forelimb	humerus	2			1		
	radius	2			1		
	ulna						
Hind limb	femur	1	1				
	tibia	1			3		
	fibula			1			
	patella						
Feet	carpals/ tarsals						
	astragalus		1				
	calcaneum						
	metacarpal				1		
	metatarsal				1		
	1st phalanx	1					
	2nd phalanx						
	3rd phalanx						
	metapodial						
Loose teeth		2	1	1	3		

Table 41: Skeletal representation in the mid and late 1st century (Phase 6 and 7) assemblages (Minimum Number of Elements)

		6					7					
Anatomical Region	Element	cattle	pig	sheep /goat	lge mml	med mml	cattle	horse	pig	sheep /goat	lge ml	med mml
	antler											
Head	horncore											
	Frontal/upper orbit											
	zygomatic											
	occipital											
	maxilla											
	mandible						3			3		
Vertebrae	atlas											
	axis											
	Cervical vertebra										1	
	Thoracic vertebra											3
	Lumbar vertebra										1	
	sacrum											
	Rib (articulation)											
Shoulder/ hip girdle	scapula											
	pelvis	1					1		1			
Forelimb	humerus	2	2				2			1		
	radius						1			1		
	ulna									1		



Anatomical Region	Element	6					7					
		cattle	pig	sheep /goat	lge mml	med mml	cattle	horse	pig	sheep /goat	lge ml	med mml
Hind limb	femur						1					
	tibia	1		1			1		3			
	fibula							1				
	patella											
Feet	carpals/ tarsals											
	astragalus			1								
	calcaneum						1					
	metacarpal			1					1	4		
	metatarsal						2					
	1st phalanx						1	1		2		
	2nd phalanx											
	3rd phalanx											
	metapodial											
Loose teeth		1		4			6		1	3		

Table 42: Butchery marks in the Iron Age assemblage (Phases 2-4)

Iron Age (2 to 4)	Chop	Saw	Scrape	Cut	Total
<b>cattle</b>	<b>37</b>	<b>1</b>	<b>1</b>	<b>15</b>	<b>54</b>
1st phalanx				2	2
astragalus				2	2
horncore				1	1
humerus	1				1
hyoid				1	1
mandible	3			2	5
metacarpal	3				3
metapodial	2				2
metatarsal	1			2	3
partial skull	1				1
pelvis	6				6
radius	5				5
scapula	4			2	6
tarsal				1	1
tibia	6		1	2	9
ulna	2	1			3
zoned skull	3				3
<b>equid</b>	<b>1</b>				<b>1</b>
axis	1				1
<b>lge mml</b>	<b>8</b>			<b>11</b>	<b>20</b>
cervical v	2				2
pelvis	1				1

<b>Iron Age (2 to 4)</b>					<b>Total</b>
	<b>Chop</b>	<b>Saw</b>	<b>Scrape</b>	<b>Cut</b>	
rib (head)				1	1
rib fragments				2	2
rib shaft	2			7	9
scapula	2				2
shaft fragments	1			1	2
thoracic v	1				1
<b>med mml</b>	<b>6</b>			<b>7</b>	<b>13</b>
longbone				1	1
rib (head)				1	1
rib shaft	4			5	9
thoracic v	2				2
<b>pig</b>	<b>4</b>		<b>1</b>	<b>2</b>	<b>7</b>
fibula	1				1
humerus				1	1
mandible	1				1
partial skull				1	1
scapula	1				1
skull fragments			1		1
thoracic v	1				1
<b>red deer</b>		<b>1</b>			<b>1</b>
antler		1			1
<b>sheep</b>	<b>1</b>				<b>1</b>
horncore	1				1
<b>sheep/goat</b>	<b>7</b>			<b>6</b>	<b>13</b>
1st phalanx				1	1
astragalus				1	1
cervical v	1				1
humerus				1	1
pelvis	4			1	5
radius				1	1
skull fragments				1	1
tibia	2				2
<b>Grand Total</b>	<b>65</b>	<b>2</b>	<b>1</b>	<b>41</b>	<b>110</b>

Table 35: Butchery marks in the Belgic and Late 1st century AD assemblages

	<b>Belgic (5)</b>		<b>Late 1st century AD (7)</b>			<b>Total</b>
	<b>Chop</b>	<b>Cut</b>	<b>Chop</b>	<b>Scrape</b>	<b>Cut</b>	
<b>cattle</b>	<b>1</b>	<b>2</b>	<b>2</b>		<b>3</b>	<b>8</b>
calcaneum					1	1
humerus		1			1	2
mandible					1	1

metatarsal			1			1
pelvis		1	1			2
tibia						1
<b>lge mml</b>	<b>1</b>	<b>1</b>	<b>1</b>		<b>2</b>	<b>5</b>
rib shaft	1	1				2
sacrum			1			1
shaft fragments					2	2
<b>med mml</b>		<b>2</b>				<b>2</b>
rib fragments		1				1
rib shaft		1				1
<b>sheep/goat</b>	<b>2</b>		<b>1</b>	<b>1</b>		<b>4</b>
humerus	1					1
radius			1			1
tibia	1			1		2
<b>Grand Total</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>19</b>

Table 36: Measurements taken on bones (i) (mm) (following von den Driesch 1976)

Phase	SG	G	Cntxt	Taxon	Element	GL	Bp	Bd	SD	Dd	Bt	HTC	DC
2	1723	39	1722	cattle	femur								41.8
	1487	38	1485	cattle	femur		99.1						37.9
	1214	3	1215	cattle	humerus						71.6	32.2	
5	1554		1553	cattle	humerus	263	87.6				67.4	31.3	
	1325		1324	cattle	metacarpal		54.1						
	1325		1324	cattle	metacarpal		49.8						
	1614	12	1627	cattle	metacarpal			51.3					
4	1620	13	1618	cattle	metatarsal	212	43.5	48.9	23	30			
	1078		1077	cattle	radius		74.7						
	1092	3	1093	cattle	radius		70.6						
	1290	15	1289	cattle	radius		73.1						
			1768	cattle	radius		72.2						
2	1387	44	1387	cattle	radius		67.9						
	1290	15	1289	cattle	tibia			52.8		37.3			
	1280	6	1310	cattle	tibia			54.7		36.8			
5	1554		1553	cattle	tibia			53.8					
	1683	26	1678	cattle	tibia			50		35.7			
	1581	21	2021	cattle	tibia			59.5		44.5			
	1777		1776	cattle	tibia			54.3		39.4			
5	1554		1553	equid	femur	361	105.1	86.2					53
	1260		1258	equid	radius		76.5						
	1233		1232	pig	humerus			33.1			26.4	16.5	
	1290	15	1289	pig	humerus				9.8				
	1401	26	1402	pig	radius		24.2						
	1249	31	1248	sheep	humerus			26.4			24.3	12.1	

Phase	SG	G	Cntxt	Taxon	Element	GL	Bp	Bd	SD	Dd	Bt	HTC	DC
	1294	15	1293	sheep	humerus	132	31.9	25.9	12.4		24.9	12	
	1537	38	1518	sheep	humerus			27.7			27.4	13.6	
	1720		1717	sheep	humerus			27.6			26.2	12.6	
	1616	13	1623	sheep	humerus			24.3				11.5	
	1830	16	1829	sheep	humerus			27.7			26.1	12.7	
2	1387	44	1388	sheep	metacarpal	118.7	20.2	22.1	11.7	14.2			
	1298	40	1332	sheep	radius		27.5						
3	1506	10	1505	sheep	radius		29.2						
4	1469	41	1468	sheep	radius		28.3						
	1233		1232	sheep	tibia			21.9		17.3			
	1294	15	1293	sheep	tibia			22.2	17				
	1294	15	1293	sheep	tibia			22.7	18.5				
	1689		1688	sheep	tibia			22.2		17.7			
	1683	26	1678	sheep	tibia			21	11.8	17.3			
	1650		1649	sheep	tibia			22.1		17.8			
	1378		1377	sheep	tibia			22.1		17.4			
	1364		1363	sheep	tibia			23.2		17.7			

Table 37: Measurements taken on bones (ii). Following von den Driesch 1976

Phse	G	Cntxt	Taxon	Elment	Bd	GLP	SLC	GLI	GLm	LA	BFCr	GH	Other
	31	1248	cattle	Astrag.	40.9			63.9	57.2				
	6	1310	cattle	Astrag.	39			59.1	52.4				
2	21	2000	cattle	astrag	35.8			57.3					
2	16	1903	cattle	pelvis						57.8			
		1267	cattle	scapula	60.2		44.3						
	15	1289	cattle	scapula		62.5							
		1350	cattle	scapula		57.8	43.6						
5	36	1103	cattle	scapula		64.3	52.3						
	15	1291	dog	scapula		27.9							
5		1553	equid	Astrag.								57.4	bfd=47.1
	31	1361	equid	atlas							84.5		bfcaud=82.4
	15	1287	pig	scapula			19.3						
		1778	pig	scapula		27.6	18						
	27	1520	pig	scapula			20.5						
2	22	1921	pig	scapula			21.1						
		1458	sheep	Astrag.	15.4			23.5	23.2				
	11	1782	sheep	Astrag.	14.4			22.8	22.1				
5	21	1909	sheep	Astrag.	17.5								
	14	1575	sheep	pelvis						25.6			
	38	1518	sheep	pelvis						26.8			
	38	1518	sheep	pelvis						27			
4	18	1582	sheep	pelvis						30.6			
	36	1048	sheep	scapula			13.1						

Phse	G	Cntxt	Taxon	Element	Bd	GLP	SLC	GLI	GLm	LA	BFcr	GH	Other
	15	1291	sheep	scapula	30.2	19.2							
	26	1678	sheep	scapula		28.3	15.8						
2	16	1836	sheep	scapula		25.4	16.5						

Table 38: Measurements taken on horncore (mm)

Phase	SG	G	Cntxt	Taxon	Element	Length	Basal circumference
	1830	16	1829	sheep	horncore	90	102

Table 47 Pathologies

SG	G	Phase	Context	Taxon	Element	Type	Notes
1013	37	2 to 4	1012	sheep/goat	mandible	Abnormal bone formation	raised nodule of bone with associated periostitis
1078		2 to 4	1077	cattle	radius	Abnormal bone formation	prox ulna fused to shaft
1066	2	2 to 4	1170	sheep/goat	femur	Abnormal bone formation	periosteal reaction over part of shaft, poss infection
1205	31	2 to 4	1203	cattle	incisor	Malocclusion	enamel chipped off front of tooth
1223	19	2 to 4	1222	lge mml	thoracic v	Abnormal bone formation	pit and remodelled bone around caudal processes.
1233		2 to 4	1232	sheep/goat	mandible	Malocclusion	malocclusion of p3 and p4, p3, crosses on medial side of p4.
1254	19	2 to 4	1253	cattle	phalanx	Abnormal bone formation	lip of bone on caudal side of prox articular surface
1292	15	2 to 4	1291	med mml	rib shaft	Abnormal bone formation	projecting spiracle of bone on visceral caudal border
1292	15	2 to 4	1291	sheep/goat	mandible	Abnormal bone formation	bony nodule c9mm, slightly raised and rough on lateral basal part of mandible.
1292	15	2 to 4	1291	sheep/goat	mandible	Abnormal bone formation	bony nodule c10mm, slightly raised and still rough on lateral basal part of mandible.
1362	31	2 to 4	1361	equid	metapodial	Bone loss	fragment of distal end with eburnation
1387	44	2 to 4	1388	cattle	pelvis	Abnormal bone formation	exostosis on medial side of acetabulum indicating arthritic changes.
1510	7	2 to 4	1509	lge mml	rib shaft	Abnormal bone formation	caudal border of bone is ragged with exostosis on edge
1510	7	2 to 4	1522	cattle	premaxilla	Abnormal bone formation	pitting and exostosis around alveolar bone.

SG	G	Phase	Context	Taxon	Element	Type	Notes
1554		5	1553	cattle	um1/2	Malocclusion	unusual wear- worn into a sharp V in the centre of the tooth (deepest point between cusps)
1554		5	1553	lge mml	rib shaft	Abnormal bone formation	Fairly ragged caudal border
1554		5	1553	equid	femur	Abnormal bone formation	ossified globules of new bone have formed in the fossa between 2nd trochanter and head on the posterior part of the bone and anterior of 3rd trochanter.
1620	13	2 to 4	1618	sheep/goat	mandible	Abnormal bone formation	bumpiness and change in bone texture on buchal and basal surfaces below m1.
1620	13	2 to 4	1618	sheep/goat	mandible		calculus with metallic sheen
1620	13	2 to 4	1618	sheep/goat	maxilla		metallic sheen to calculus
1616	13	2 to 4	1623	cattle	upper molar	Malocclusion	extreme wear on mesial cusp resulting in angled biting surface.
		2 to 4	1770	cattle	partial skull	Non-metric trait	occipital perforations

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