



Northamptonshire
County Council

Northamptonshire Archaeology

A Roman rural
settlement at Newport Pagnell,
Milton Keynes,
Buckinghamshire



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April 2007
Revised December 2007

Report 07/052

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OASIS REPORT FORM

PROJECT DETAILS		
Project name	Roman rural settlement at Newport Pagnell, Milton Keynes, Buckinghamshire	
Short description	<p>Excavation in March-May 2006 in advance of redevelopment of the former Rocla Pipeworks. The remains of a late Iron Age settlement comprising two roundhouses and a curvilinear gully, is dated to the early 1st century AD. It may have been contemporary with a long linear boundary ditch, with an associated field system. The boundary was retained into the later 1st century, when a rectangular settlement enclosure was established. By the late 2nd century a second enclosure had been added, and both were refurbished with recutting and realignment of the ditched boundaries through the 3rd century. There was a final modification in the middle to late 4th century and the settlement was abandoned at the end of the 4th century or possibly the early 5th century.</p> <p>During the 5th century, a single Saxon sunken floored building was constructed to the immediate south of the enclosures. The only later evidence for human activity are the remnant furrows of the medieval ridge and furrow cultivation system.</p>	
Project type (eg DBA, evaluation etc)	Open area excavation	
Site status (none, NT, SAM etc)	None	
Previous work (SMR numbers etc)	Fieldwalking survey followed by a detailed geophysical survey, undertaken in November and December 2005 respectively (Butler, Holmes & Morris 2005), and trial trench evaluation undertaken in January 2006.	
Current Land use	Arable farmland	
Future work (yes, no, unknown)	No	
Monument type/ period	Late Iron Age remains, but predominately Roman occupation, with a limited Saxon and medieval/ post-medieval presence.	
Significant finds (artefact type and period)	Roman pottery assemblage, animal bone (predominately cattle), metal-working debris.	
PROJECT LOCATION		
County	Milton Keynes, Buckinghamshire	
Site address (including postcode)	Newport Pagnell, near Walnuts Farm, adjacent to the former Rocla Pipeworks.	
Study area (sq.m or ha)	1.4ha	
OS Easting & Northing (use grid sq. letter code)	SP 856431	
Height OD	67m OD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originator	WSP Environmental Ltd	
Project Design originator	WSP Environmental Ltd	
Director/Supervisor	Stephen Morris	
Project Manager	Anthony Maul	
Sponsor or funding body	GladeDale Homes	
PROJECT DATE		
Start date	March 2006	
End date	May 2006	
ARCHIVES	Location (Accession no.)	Content (eg pottery, animal bone etc)
Physical	NRP 05 (2006.4)	Flint, pottery, ceramic tile, animal bone, copper alloy and iron finds, metal working debris, quernstone, fired clay, coins, one inhumation, and baulk soil samples.
Paper	NRP 05 (2006.4)	20 plans, 221 sections, 829 contexts 15 colour slides and b/w films,
Digital	NRP 05 (2006.4)	208 digital photos

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**A ROMAN RURAL SETTLEMENT AT NEWPORT PAGNELL,
MILTON KEYNES, BUCKINGHAMSHIRE**

Abstract

Excavation in advance of redevelopment was carried out on land adjacent to the former Rocla Pipeworks, near Walnuts Farm, Newport Pagnell, Milton Keynes. The remains of a late Iron Age settlement, comprising two roundhouses and a curvilinear gully, are dated to the early 1st century AD. It may have been contemporary with a long linear boundary ditch, with an associated field system. The boundary was retained into the later 1st century, when a rectangular settlement enclosure was established. By the late 2nd century a second enclosure had been added, and both were refurbished with recutting and realignment of the ditched boundaries through the 3rd century. There was a final modification in the middle to late 4th century and the settlement was abandoned at the end of the 4th century or possibly the early 5th century.

Both enclosures contained internal sub-divisions and the central, more rectilinear gullies may have marked the location of timber buildings for which no other evidence survived. There were also scattered pits, including a large watering hole, and a single late Roman inhumation burial.

The Roman pottery comprises both coarse and fine wares, and there is a small collection of other domestic items, with some bronze casting carried out on site. The animal bone assemblage is dominated by cattle, indicating that slaughtering and processing was carried out on site as a major component of the settlements economic base.

During the 5th century, a single Saxon sunken-featured building was constructed to the immediate south of the enclosures. The only later evidence for human activity are the remnant furrows of the medieval ridge and furrow cultivation system.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by WSP Environmental Ltd on behalf of Gladedale (South East) Limited, to undertake archaeological fieldwork on land adjacent to the former Rocla Pipeworks near, Walnuts Farm at Newport Pagnell, Milton Keynes (centred on NGR SP856431; Fig 1). The archaeological fieldwork was carried out in connection with a proposal for residential development in part of the Milton Keynes Northern Extension Area (NEA).

The archaeological fieldwork initially consisted of three stages of evaluation. This comprised a fieldwalking survey, geophysical survey and a trial trench evaluation. The fieldwalking and geophysical surveys were undertaken in November and December 2005 respectively (Butler, Holmes & Morris 2005), with the trial trench evaluation being undertaken in January 2006. The trial trench phase results have been incorporated into this report.

The fieldwalking survey produced a quantity of Roman pottery from the northern field but none from the southern field. Subsequently a single area measuring 1.1ha in extent was surveyed by detailed gradiometry centred on the area of the Roman pottery scatter. The geophysical survey identified two rectilinear enclosures positioned on a broad plateau area overlooking the River Great Ouse to the west. These were subsequently evaluated by trial trenching comprising 40 trenches excavated across both fields focusing on the results of the geophysical and field walking surveys. The trenching confirmed the presence of the enclosure ditches and related features of Roman date on Field 1 (Fig 4).

The open area excavation was undertaken between March to May 2006, over an area of approximately 1.4ha primarily over the two enclosures (Fig 4). The excavation conformed to the requirements of a project design issued by WSP Environmental Ltd (WSP 2005) and agreed with the Archaeologist for Milton Keynes Council. An updated project design was issued for the open area excavation (WSP 2006). The Event Number issued for the work is 01015. An accession number NPR 05 (2006.4) was issued by Buckinghamshire County Museum, which was marked on all records and retained material.

2 BACKGROUND

2.1 Topography

The site was located to the south-west of Newport Pagnell in two arable fields described as Field 1 and Field 2 in Fig 4. It sits on a broad generally flat plateau of high ground which forms part of the eastern valley side of the River Great Ouse. Field 1 was bounded at the north and east by the Newport Pagnell Service Station for the M1 motorway and to the west by a series of lakes created by mineral extraction. Field 2 was bounded to the south by the Wolverton Road and pasture to the east, with Field 1 and the service station to the north side. The former Rocla Pipeworks was located to the south and west sides of Fields 1 and 2 respectively.

The eastern side of Field 1 was a part of level plateau that extended for approximately 100m to the scarp edge, on which the main part of the site was positioned at approximately 67m AOD. The west side of the field sloped steeply down to the valley bottom. There was a gentler slope towards the Wolverton Road. The former Rocla pipeworks occupied the south-west corner of the development area and sat in a low lying area, terraced out of the surrounding farmland. At the time of the archaeological works, the areas examined were arable fields which had been rough ploughed and allowed to weather.

2.2 Geology

Helen Keeley and Steve Critchley

No solid geology was observed within the excavation area, but it can be inferred from the 1:25,000 Milton Keynes geological map to be of Blisworth Clays and Blisworth Limestones capped by rubbly limestones of the Cornbrash Formation. These are part of the Middle Jurassic Great Oolite Series and are here overlain by glacial tills of the Middle Pleistocene Anglian Glaciation. The soils in the area have been mapped by the Soil Survey of England and Wales (BGS EW203 Bedford) as the Fladbury 1 Association in the river valley (pelo-alluvial gley soils), the Bishampton 2 Association on the river terraces (stagnogleyic brown earths and typical stagnogley soils), and the Hanslope Association on the interfluves. It is most likely that the latter soils predominate over the site, comprising calcareous pelosols of the Hanslope series and argillic pelosols of the Faulkbourne series, developed in chalky till on low plateau and gently to strongly sloping valley flanks (Ragg *et al* 1984).

During the excavation, the glacial tills were observed to be of highly variable stiff light grey to light yellow brown/light brown clays rich in chalk, limestone and subordinate sandstone and quartz arenite clasts along with localised rounded quartzite rich sand and gravel patches. Some of the locally derived clasts were up to 100mm in diameter with a more angular profile and retaining recognisable bedding structures. These and the gravel patches are likely to represent patches of frozen ground or rock incorporated into the tills by the advancing ice sheets in the holocene. Some diffuse periglacial thermokarst features were noted in their end stage orange brown sand filled forms. These are most likely the remains of ice cracks or incipient ice wedges blurred by

later Holocene decalcification of the till upper layers. The tills became increasingly buried down slope towards the western end of the excavation by later sandy clays of colluvium/head deposits.

3 ARCHAEOLOGICAL BACKGROUND

The development site is located within a rich archaeological landscape, with a search of the Milton Keynes Sites and Monuments Record (SMR) and published excavation reports and secondary sources revealing a diverse range of sites and finds dating from the prehistoric to post medieval periods (Fig 2). However, only sites and finds with direct significance for the excavated site are considered here. Entries upon the Milton Keynes SMR are prefixed MK. Sites with statutory protection as Scheduled Ancient Monuments are prefixed SAM.

The earliest evidence for nearby human activity comes from isolated finds, reflecting quarrying and more recent development-led opportunities for fieldwork rather than a true distribution. The earliest of these is a Palaeolithic hand axe found within Stantonbury gravel pit, near Haversham-Cum-Little in 1970 (<http://ads.ahds.ac.uk>). The Mesolithic and Neolithic periods are both represented by flint tool assemblages have been recovered from excavations on Iron Age and later sites. These are generally taken to indicate short term activity, such as seasonal hunting and “demonstrates continuity of occupation... from a very early period” (Croft and Mynard 1993). The remains of Neolithic settlements, indicated by pits containing domestic pottery, have also been recovered found at a number of sites including Stacey Bushes (MK228), Heelands (MK342) and Secklow (MK300). Although slight, such activity suggests that settled agriculture was becoming established. The model given in the literature is of gradual development utilising the lighter soils along the valleys (ibid).

There is a larger body of evidence of a range of activities dating to the Bronze Age. Metalworking and trade may be indicated by the retrieval of bronze artefacts such as the hoard found at Walton (MK17); and it is likely that the number of such finds will increase with continuing support for the Portable Antiquities Scheme programme (www.finds.org.uk). The clearest evidence for settlement in the Bronze Age a large circular post built building, which measured 18.5m in diameter, found at Blue Bridge (Adjacent to the mausoleum at Bancroft villa (Williams and Zeepvat 1994). Domestic activity is also suggested by the recovery of loom weights from an isolated pit at Fen Farm (Northamptonshire Archaeology, forthcoming). A number of Bronze Age funerary monuments have been investigated. The sitting of barrow cemeteries within the floodplain of the Ouse valley appears to have been relatively common (Dawson 1999). The excavation of such a cemetery was undertaken at Mill Farm, Gayhurst, which lies 1.5km to the north of the site (Chapman forthcoming b). A number of poorly located barrows have also been recorded in the SMR close to the site, including a barrow containing two burials which was recorded during gravel extraction. Another possible barrow has also been identified by aerial photography at Portfield Farm to the southeast (SMR 0002) (AP plot 1984 HSLUK Col 8452 Run 2 214) SP 85474376

The Iron Age is well represented, with the scale of recent development in Milton Keynes adding greatly to the number of known domestic settlement sites, developing the picture of an increasingly full landscape of dispersed farms, stock enclosures, and field systems orientated along green tracks. The development site sits within the tribal area of the *Catuvellauni* with the local centre located at the hill fort at Danesborough (SAM 19083). The fullest published account of an Iron Age settlement is the site at Pennyland (Williams 1993), and Wavendon Gate (MK580) (Williams *et al.* 1996). A smaller enclosed Middle Iron Age settlement was investigated at Gayhurst (Chapman, forthcoming b) and a late Iron Age farm at Cranborne Avenue, Westcroft (Antony 2003). Excavations at Monkston Park found a rudimentary field system established in the Late Iron Age were renewed and extended in the later first century (Bull and Davies 2006). Where larger areas have been available for archaeological investigation an increasing element of

planned layout has been suggested in the late prehistoric Iron Age, as at Fen Farm, Wavendon (Nova1) (Taylor, forthcoming).

The transition from the late Iron Age to Roman administration appears to have been relatively painless. The local burial traditions continued unchanged at Monkston Park, where the cremation cemetery remained in use well into the Roman post-conquest period (Bull and Davies 2006). Following the Roman conquest (attributed to the rapid passing of the Legio xiv Gemina) the local economic experience during the Romano-British period appears to have been one of expansion and re-organisation, with growth during the first and second centuries AD, varying fortunes during the early/mid third century followed by expansion in the late third century into the fourth century.

The local urban centres were located at *Magiovinium* (Dropshort Farm, Fenny Stratford) to the south and *Lactodorum* (Towcester) to the north (Fig 3). *Magiovinium* was a small planned town, covering 7.5ha placed at the crossing of Watling Street over the River Ouzel. Excavations have shown that the town overlies an earlier Neronian Fort (Woodfield 1977). The town appears to have replaced the tribal centre at Danesborough hill fort, which was of comparable size, enclosing c8.5ha (Mynard, 1987).

Perhaps the most visible surviving element of 'Romanisation' was the development of the road system. At first this was for military and administrative use, but soon formed the backbone of intra-urban transport and trade. The major road in the area was Watling Street, (later the A5, now grid road V4) linking *Magiovinium* and *Lactodorum*. To the east of Watling Street were two additional minor roads in the south linking *Magiovinium* to the likely ritual/temple centre at Thornborough. The site was possibly deliberately developed from an earlier focus located at the boundary of three tribal areas. To the north a road joined Thornborough to the crossing of the Ouse at Old Stratford. To the west of Watling Street, and east of the River Ouzel a road joined *Magiovinium* to Irchester, Northamptonshire via a substantial settlement near the crossing of the Ouse at 'Ashfurlong' (MK SMR 1133; SAM MK127) (Warrington Road, Olney). Limited excavation undertaken in the 1960's (Mynard, 1967) found substantial stone structures; further examples are indicated by aerial photography.

With regard to the general traffic of trade: the provision of a wharf at Haversham and wharfs and storehouses at Stanton Low (MK1701) supports the idea of a significant element of transportation or transshipment of goods via the rivers Ouse and Ouzel.

One new element in the landscape during the Roman period was the development of 'villas'. The largest and possibly most complex local villa was at Stanton Low, which lay 1.5km to the west (Woodfield and Johnson, 1989). The earliest evidence for occupation of the site was in the middle Iron Age, but by the later Iron Age it is believed the settlement existed on both sides of the Ouse utilising a ford. In the early Roman period a river channel was dug surrounding barns and a storehouse adjacent to a timber wharf. This was followed in the first half of the second century AD by the construction of up to six substantial stone buildings 'of villa quality' which continued in use to the middle of the fourth century. Ironworking was attested by the recovery of a block type anvil and an iron plough coulter. Across the Ouse Valley at Hill Farm, Haversham, Roman buildings have recently been investigated (Mudd 2006).

The most comprehensively investigated and fully published villa is that at Bancroft (MK360) (Williams and Zeephat, 1994). The site is located on the side of a small valley the villa appears to have developed from an earlier Iron Age farmstead utilising the particularly good aspect and soil. Other nearby villas which have been excavated includes Stantonbury (Mynard 1987) and Gayhurst (Fleming 1973). Further afield a villa outside Northampton at Wooton Fields has recently been excavated, (Chapman *et al* 2005), and the long term investigation continues of a villa at Piddington (Northants).

Along with the development of Romanised villas, the mixed agrarian landscape included a variety of settlement sizes from small farmsteads to larger farms, surrounded by paddocks and fields and linked by greenways and tracks. The large scale recent development in Milton Keynes has allowed for controlled archaeological investigation of large areas, which have conformed to this layout. Perhaps the most complex of these has been found at Broughton Manor Farm (SMR 860) (SP490120, 239360) where the Cambridgeshire County Council Archaeological Field Unit have uncovered enclosures and paddock either side of a trackway leading to the river. At Fen Farm, Wavendon (Nova) the late Iron Age farmstead and fields, oriented upon a wide trackway, appear to have been re-planned on a larger scale (possibly 1st / 2nd), and continued in use through to 4th century AD (NA, forthcoming). At Monkston Park the field ditches and enclosures continued to be replaced and extended between the second and fourth centuries, for wheat production, livestock herding and subsistence metalworking (Bull and Davies 2006).

Another site at Renny Lodge, Newport Pagnell (SMR 1021), excavated by Wessex Archaeology (Wessex, 2005) recovered a large ditched enclosure dated to the first/second centuries AD which possibly fronted onto a Roman road defined by flanking ditches. At Willen Road, Caldecote (SMR 1002) Archaeological Services and Consultancy Ltd (ASC 2005) found ditched enclosures, pits, gullies and at least three circular buildings. Occupation dated from the late Iron Age to the fourth century. Other enclosures and fragments of field systems have also been found at Cotton Valley to the southeast and Little Woolstone and Stanton wood to the south.

Two rectangular enclosures with parts of a trackway have also been identified by aerial photography at Portfield Farm to the southeast (SMR 0002) (AP plot 1984 HSLUK Col 8452 Run 2 214). They measure 50m x 70m and 50 x 40m across.

Evidence for continuity of settlement from the Roman to early medieval periods in Buckinghamshire (including Milton Keynes) is described as 'slight' (Zeephat and Radford 2006) However, possible sunken-featured buildings were recorded adjacent to the villa and Mausoleum at Bancroft, and another near a possible Roman building at Fenny Lock (Ford *et al.* 2001). At Wolverton Turn (MK509?), there was the suggestion of an earlier Roman enclosure predating the large Saxon enclosure (TVAS, 1994). The large enclosure was also predated by an early-middle Saxon dispersed settlement characterised by a combination of Grubenhäuser and post built buildings.

Conversely the Saxon farms at Pennylands (MK568), and Haritgans gravel pit (MK508) (Williams, 1993) were found to have been unoccupied until the 5th or 6th centuries, although both had been sites of Late Iron Age settlement.

Newport Pagnell was established as a market town in the 10th century. Its position on the road network at the crossing of the Ouse was of key importance. Wolverton Road was part of the main east-west route from Bedford to Buckingham (ultimately Oxford-Cambridge) now replaced by the A422 grid road H2. There was also another main road from Northampton south via the 'portway' (A509, now grid road H5), which used Tickford Bridge (MK SMR97). In the Domesday survey it is named as *Neuport*, 'New market town' from the Old English *niwe* + *port* (Mills 1998). It is recorded as *Newport Paynelle* by 1220, gaining the manorial affix from the Paynel family who held the manor in the twelfth century. The earliest references to the existing villages in the area occur in the Domesday Survey of 1086 (Williams and Martin 2002).

The site originally lay within Secloe hundred whose meeting place, Selly Hill, was located at the crossroads in Bradwell. In the 13th century the Secloe, Moulsoe and Bunsty Hundreds were combined to form the hundred of Newport (Croft and Mynard 1993)

The majority of Scheduled Ancient Monuments within the development area are of Medieval date. The closest of these is probably the Deserted Medieval Village of Great Linford (MK148/MK626) to the south. Haversham manor (SAM 19087) lies to the west and the remaining span of the medieval Tickford Bridge (MK97) to the west. Castles were established at Wolverton (SAM 13609) and at Castlethorpe (SAM 19080). In the late 12th century Stony

Stratford and Fenny Stratford were both developed as new towns to serve traffic on Watling Street. To the south west are Bradwell Abbey (SAM 19062/19002) and Wolverton DMV (SAM 13609). To the west is the civil war defence at Bury Field (SAM 35922).

4 METHODOLOGY

The removal of the overburden was carried out using two 360° tracked mechanical excavators fitted with a 1.8m wide toothless ditching buckets, with continuous archaeological supervision to a depth of approximately 300mm. All soils were removed by a Moxey-Type dumper and stacked at a safe distance away from the excavation areas. Stripping of the topsoil was conducted in a series of controlled spits to the archaeological horizon or where absent the natural geology, where machinery movement over stripped areas ceased. Machinery used outside of these areas was kept to an absolute minimum in order to avoid rutting of the underlying deposits.

A provisional site plan was generated using a Global Positioning System (GPS) as an aid for formulating a sampling policy and for use in monitoring meetings. Thereafter, a series of hand drawn site plans at scales of 1:100, including plans of features of particularly significance or complication. All features were related to the Ordnance Survey national grid.

Following the removal of modern topsoil overburden by machinery, archaeological deposits exposed were cleaned in plan then hand excavated, as per percentages set out in the written scheme of investigation. Excavated sections were photographed, followed by detailed hand drawn elevation drawings with levels related to Ordnance Survey Datum. Areas of complex deposits were cleaned by hand and planned at a scale of no less than 1:20 and sections no less than 1:10, as appropriate. The character, composition and general depositional sequence of the site stratification were recorded on pro-forma sheets. Artefacts and ecofacts were collected by hand or sampled and retained. Unstratified animal bones and modern material were not collected. The excavated area and spoil heaps were scanned with a metal detector to ensure maximum finds retrieval.

The fieldwork was conducted in accordance with the Health and Safety policy of the Northamptonshire County Council Environment Directorate.

All works were conducted in accordance with the *IFA Standards and Guidance for Archaeological Excavations* (1994, revised 1999) and the *Code of Conduct of the Institute of Field Archaeologists* (1985, revised 2000). All records and materials were compiled in a structured archive in accordance with the guidelines of Appendix 3 in the English Heritage procedural document, *Management of Archaeological Projects* (1991).

5 THE EXCAVATED EVIDENCE

5.1 Summary of site chronology

The earliest evidence for human activity comprises a background scatter of residual worked flints broadly attributed to the Neolithic and Bronze Ages, which probably derive from intermittent and transient exploitation of the landscape. There is also a single sherd of pottery from a hand-built vessel that may be of late Bronze Age/early Iron Age date.

Settlement of the area began in the late Iron Age, probably the first few decades of the 1st century BC, with the construction of a roundhouse and associated gullies (Fig 5). A linear boundary ditch, with transverse ditches forming a field system may have been closely contemporary, and formed the framework within which a settlement enclosure was created in the later 1st century AD. A second enclosure was added in the late 2nd century, and the two enclosures were refurbished through the 3rd and 4th centuries, with abandonment in the late 4th or perhaps even the early 5th century AD. Later respect is shown in the presence of a single Saxon sunken-featured building.

Table 1: Summary of the chronological sequence

Nature of occupation	Date
Roundhouses Linear boundary ditch Associated field system	Late Iron Age/early Roman (1st century AD)
The northern enclosure	Late 1st to 2nd century AD (Phase 1)
The addition of the southern enclosure	Late 2nd century to 3rd century AD (Phase 2)
Refurbishment of northern and southern enclosures	Mid/late 3rd-4th century AD (Phase 3)
Abandonment of settlement	Late 4th century –early 5th century AD (Phase 4)
Anglo-Saxon building	5th century AD
The medieval field system	

5.2 The late Iron Age/early Roman settlement (1st century AD)

The roundhouses and associated features

In the northern part of the site there were remnants of two possible ring-gullies, which may have enclosed successive roundhouses (Fig 6, Roundhouses 1 & 2). In addition, a scatter of postholes, two further lengths of curvilinear gully and two pits, all partially truncated and degraded by later activity, may have been contemporary.

The roundhouses were only partially intact, due to later truncation. Ring gully [5384], Roundhouse 1, was the most complete, with approximately one third of a circular circuit surviving. The gully was U-shaped in profile, 0.28-0.34m wide by up to 0.15m deep, with a fill of sandy loam (Fig 7, Section 191, (5385)). It produced a few fragments of 1st century AD pottery, and a small quantity of cattle bone. The ring-ditch, if complete, would have been around 10m in diameter.

Roundhouse 2 was defined by two short gully lengths, [5386] and [5495]. Gully [5386] was c5m long by 0.47m wide and cut the gully of Roundhouse 1. The other length of gully [5495] was c1.7m long by 0.34m wide. Both contained similar fills of orange-brown sandy loam and brown silty clay fills. The two gullies may have formed part of a single ring-gully that was 14m in diameter. Within this area there were four undated postholes, [5487], [5489], [5491] and [5493], 0.17-0.40m in diameter and 0.07-0.22m deep, with fills of brown silty clay. The eastern gully contained late Iron Age pottery dated to the 1st century AD.

To the east of the two roundhouses, a small steep-sided circular pit [5225], 0.9m in diameter and 0.25m deep, was cut by an arc of curvilinear gully [5223] (Fig 7, Section 87). The pit fill (5226) was a yellowish loam containing a moderate number of limestone fragments and cobbles, some of which were burnt. The gully fill (5224) was dark grey-brown, with occasional charcoal flecks. At the terminal there were several fired clay fragments, one of which contained a wattle impression and may have come from an oven/kiln construction. Cereal grains were also recovered from the fill here. Pottery from the gully dates to the early part of the 1st century AD.

A small oval pit [1906] adjacent to the east side of gully [5223], 0.6m long by 0.4m wide and 0.25m deep, also produced some pottery of the early 1st century AD.

Between the roundhouses and the curvilinear gully there was a short linear gully [5505], which had been re-cut [5550].

The linear boundary

A linear boundary ditch running east-west across the site, and traced for a total length of 163m, would appear to mark a primary division of the landscape (Figs 4-6). Roman pottery dated to the middle of the 1st century AD was recovered from the fills of the primary ditch [5304]. This may suggest an origin contemporary with the roundhouses, with the ditch being retained through to the later 1st century AD, when it dictated the location of the Roman enclosure.

At the eastern edge of the site, the ditch [1912]/[5175]/[5304] was 1.7m wide and up to 0.54m deep, with abroad U-shaped profile (Fig 7, Sections 21 and 25). The ditch gradually diminished in size westwards to a terminal on the scarp slope that was 0.3m wide and 0.15m deep. The ditch fill (1920)/(5176)/(5305) was grey-brown silty clay fill. On the scarp slope the ditch had been re-cut on its northern side (Figs 4 & 7, Section 116, [5306]).

The field system

From the linear boundary ditch four ditches extended perpendicularly to form parts of a field system (Figs 5 and 6).

Two ditches ran northwards, [5161] and [5110], lying 50m apart. Two ditches, [5188] and [5422], lying 75m apart ran southwards from the boundary ditch, although ditch [5422] was detached from the linear boundary, and had a right-angled dog-legged section running parallel to the linear boundary ditch and 16m to the south, perhaps suggesting the early presence of a track or driveway alongside the linear boundary.

Ditch [5161] was steep-sided with a narrow base, 0.55m wide but broadening gradually to the north end, where it was 0.90m wide and 0.38m deep. The fill (5162) changed from orange-brown sandy-silty clay at the southern end, to grey-brown silty clay in the north. Seed recovered from this ditch indicates the landscape had open country plants, which suggests the fields were probably pasture. It was unclear if the ditch [5161] directly joined the boundary ditch, as the junction was truncated by a furrow, or if it joined a narrow gully [5173] close to the northern edge of the boundary ditch.

Ditches [5161] and [5173] both contained pottery dating to the middle to late 1st century AD.

Ditch [5110] was disturbed by a later enclosure ditch, but was up to 2.4m wide.

To the south side of the linear boundary ditch, ditch [5188] had a U-shaped profile, 0.78m wide by 0.31m deep. To the west, ditch [5422] turned east to form a right-angled dog-leg running parallel with the main linear boundary, and a further eastward continuation may have been lost beneath a later enclosure ditch (Fig 8, Section 41, [5045] and Section 52, [5101]).

Towards the south, a pit producing pottery dated to the 1st century AD may be an isolated feature relating to the field system (Fig 6, [5478]). It was circular, steep sided with a flat base, 0.5m diameter by up to 0.25m deep.

From the combined evidence of the charred seed and the cattle bone from the ditches, it can be suggested that the field system was probably part of a pastoral farmland, used for grazing animal stock.

5.3 The Roman settlement; the northern enclosures (late 1st to early 2nd century-AD)

The northern enclosure was created in the later 1st century AD. It respected the existing linear boundary ditch, re-cutting part of that ditch to form the southern side of the enclosure (Figs 5 and 9). Only the southern part of this enclosure lay within the excavated area. It was probably a sub-square or sub-rectangular shape, measuring up to 70m east-west and at least 60m north-south, enclosing an area in excess of 0.42ha.

The enclosure ditch

The enclosure ditches generally had broad profiles. Ditches [5177] to the east and [5039] to the west, had flat to slightly rounded bases, and were at least 1.5m wide and between 0.44m to 0.55m deep. The southern arm of the enclosure, ditch [1810], was at least 1.9m wide by 0.50m deep (Fig 7, Section 21).

The primary fill and secondary fills on the western and southern sides of the enclosure were predominately yellowish-orange brown silty-sandy clay; fills (5042), (5041) and (1811). At the south-east corner and along the eastern enclosure arm the fills were of grey-brown, silty clay. The pottery retrieved from the enclosure ditches was dated to the late 1st century AD.

The internal sub-divisions and gullies

The features within the enclosure comprised mainly linear ditches forming sub-rectangular sub-enclosures or pens (Fig 9).

Sub-enclosure 1

A major north-south linear ditch [5018]/[5085] (Fig 10, Section 36) had been retained from the existing field boundary, and may initially have formed the western arm of the enclosure. The ditch further west [5039] may therefore mark a slightly later, westward enlargement of the enclosure. Ditch [5085] was broad and V-shaped between 2.1m to 2.5m wide and up to 0.9m deep. To the north the ditch [5018] fill (5019) contained a substantial amount of 1st century AD grogged and coarse shell tempered pottery, including near complete vessels (Fig 17, 1-3), perhaps related to clearance of nearby domestic deposits at the formation of the northern enclosure.

The space between the two western ditches formed a sub-enclosure 8-12m wide that was barren of features, apart from a single small pit [5404].

Sub-enclosure 2 and 3

Two linear ditches [5352] and [5394] projecting eastwards from ditch [5085], formed two sub-enclosures, which were 20m long but only up to 6m and 8m wide respectively, and opened to the east. The flanking ditches were 0.5-1.3m wide and 0.10-0.25m deep.

Sub-enclosure 4

The area north of sub-enclosure 3 and west of the sub-enclosure 5, measured 16m long by 6m to 8m wide.

Sub-enclosure 5

This sub-enclosure was sharply sub-rectangular in plan and was defined by a gully that ran along the northern side for 21m, with 5m long return arms to the west and east. The gully had a U-shaped profile, 0.7m wide and up to 0.27m deep, although the return arms were shallower, at 0.35m wide and 0.15m deep. It is possible that the gully held the sill beam for a timber-framed structure perhaps open sided to the south, possibly serving as a agricultural building, such as a byre or shelter shed. Internal features included three short gullies or slots [5282], [1712] and [1716] and a posthole [1706]. The slots lay 2m and 2.5m from the end slots, and perhaps held further structural timbers.

Adjacent to the open side of the sub-enclosure there was a curvilinear slot [5452] and a pit [5456].

Sub-enclosure 6

Only the south part of the sub-enclosure lay within the excavated area. It was defined by an L-shaped ditch ([5070], [5072] and [5141]) with the southern arm 7.5m long, with a U-shaped profile, 0.65m wide and up to 0.25m deep, ending in a shallow rounded terminal to the west. The eastern arm [5070] had been recut [5072]. The fill of the recut (5073) contained a number of late 1st to early 2nd century Roman pottery sherds (Fig 17, profile 4), perhaps related to a focus of domestic activity lying further to the north.

The single internal feature was a short linear gully [5374] aligned at an oblique angle.

Other features

In the north-eastern part of the Enclosure 1 there was a group of three short lengths of curvilinear gullies ([5310], [5312] and [5339]) orientated approximately north-south. A narrow linear gully [5511], aligned north-south and 3m long, lay to the east.

Internal activity

The sub-enclosures were located on the western side of the northern enclosure, leaving the east side largely as open space, perhaps as a stock yard related to the use of the possible open-sided shed to the west of this area and the small pens in the south-western corner of the enclosure.

The bulk of the pottery assemblage came from features to the north, particularly sub-enclosure 6, suggesting that a focus of domestic activity lay in the northern part of the enclosure, beyond the northern edge of the excavation.

5.4 The addition of the southern enclosure (late 2nd to early 3rd century AD)

By the late 2nd century a new enclosure had been constructed to the south of the track or driveway, and it may have been the primary centre of domestic activity in the 3rd century (Fig 5 & 11). Enclosure 2 was sub-square in plan. It measured 55m north to south; 61m wide along its northern side and 53m along its southern side; it enclosed an area of 0.31ha. It was laid out in

respect to the earlier field system, with the western and eastern arms offset slightly inside the lines of the earlier ditches.

The enclosure ditch

The enclosure ditch formed a continuous circuit, with no surviving openings for entrances, which had perhaps been lost through later recutting. The original ditch only partially survived, as it was largely recut in the later 3rd century (see Fig 12, Section 61, [5136]), but was evidently of a similar form to the recut, with a broad flat-bottomed, U-shape profile, typically around 0.8m deep.

The internal sub-divisions and gullies

The southern enclosure was also partitioned into functional areas.

Sub-enclosure 7

The best preserved of the internal sub-enclosures was a large sub-rectangular plot, measuring 27m east-west by 14m north-south (Fig 11). The western and southern sides were formed by a continuous gully [5243], with a 5m long return arm to the east flanking the 8m wide entrance. A northern arm was lost beneath a later ditch, apart from a short length to the east [5458].

Gully [5243] was V-shaped, with a narrow flat base, 0.15m-0.3m deep to the west and 0.60m deep to the east, and 0.7-1.4m wide. The fills at the corners near the entrance, were typically darker than elsewhere, comprising dark grey silt-clay loam.

The only internal feature was a single 3m long, north-east to south-west aligned gully [5248] joining the south side of the sub-enclosure, with a furrow truncating the north end. The fill (5249) was dark yellowish brown clay loam, containing 2nd to 4th century pottery (Fig 17, 15).

Two pits lay to the west side of the sub-enclosure. A shallow sub-circular pit [5388] was 1.4m in diameter and 0.14m deep, and was cut by an oval pit [5390], 1.3m by 1.6m and 0.4m deep. Both pits had similar yellowish-brown clay loam fills.

The pottery recovered from the primary fill (5245) of the sub-enclosure ditch [5243] dates from the 2nd to 3rd centuries AD, with mid 3rd to 4th century pottery in the upper fill. A few small iron sheets and nails were also recovered from these ditches, along with two fragments of millstone. This material evidence, while limited, might suggest that the sub-enclosure was a focus for domestic occupation, and it may have contained a timber-framed building for which no other evidence survives.

Sub-enclosure 8

The north-western corner of the enclosure, measuring approximately 29m x 29m square was an open area. Just a short length of ditch [5436] branching from the main enclosure ditch to the north, provided a partial internal division, up to 8.5m long, which was maintained for some time as the ditch was recut at least twice [5434/5432]. These ditches were all at least 1m wide and up to 0.4m deep (Fig 12, Sections 167). Two late 3rd-century coins were recovered from fill (5433) of ditch [5432].

Sub-enclosure 9

In the north-east corner of the enclosure, a single gully [5474], interrupted by a medieval furrow, with a U-shaped plan, formed the western end of a sub-enclosure measuring 9m north to south, with the gullies running 5m wide eastward. The gully was U-shaped, 0.4-0.5m wide and up to 0.17m deep, with a single posthole recorded within its base. It may have been a slot that held the timbers for a small structure or perhaps (given the rounded corners) a small animal pen.

Other features

Within the eastern half of the enclosure there were four linear to curvilinear gullies. To the south three gullies ([5315], [5319] and [5321]) meandered northwards from the southern enclosure arm for up to 26m. A shallow, circular posthole [5563], lay adjacent to the west side of gully [5321]. In the northern part of the enclosure there was a single curvilinear gully [5542]. They were all shallow, 0.35m to 0.60m wide and 0.15m to 0.35m deep, with orange to grey brown silty clay fills.

External features

To the south of Enclosure 2, a linear ditch [5234], up to 1.4m wide by 0.32m deep, ran southwards. Further east, there were three adjacent intercutting curvilinear gullies [5151, 5153] and [5230] (Fig 12, Sections 64), 0.4-0.5m wide and 0.2-0.3m deep, with mid to grey brown silty clay fills.

5.5 Refurbishment of the enclosures (middle/late 3rd to early 4th century AD)

During the middle/late 3rd century to early 4th century AD both the northern and southern enclosures were refurbished by re-cutting the existing enclosure ditches and the provision of new internal sub-divisions (Figs 5 and 13).

Enclosure 1

The ditches of the northern enclosure were directly recut. The eastern ditch [1910] was 0.85-1.10m wide by 0.65m deep (Fig 7, Section 25), while on the southern and western sides the ditch was broader [1814]/[5039], at up to 1.7m wide (Fig 7, Section 21). The fill (5041) of the western ditch [5039] contained a substantial assemblage of cattle bone including a skull and other material derived from primary butchery waste.

A major change to the internal organisation of the settlement comprised the provision of a major east to west ditch [5103] that divided the enclosure into two halves. To the east this ran to a large sub-oval feature [5171] that was probably an animal watering hole.

Sub-enclosures 10 and 11

The northern part of the enclosure was itself sub-divided by a north-south ditch [5116], which was heavily truncated by later activity, but would have probably been at least 1.6m wide by 0.6m deep.

Sub-enclosure 10, to the west, was 20m wide. No internal features within the small part lying within the excavated area. Sub-enclosure 11, to the east, was 40m wide; access was possible to the watering hole (see below) and a group of pits and gullies within a hollowed area to the north of the watering hole (Fig 13, inset plan).

The gullies appear to have preceded the pits as some were partially truncated by pits. Gullies [5190] and [5205] lay parallel to each other on the southern edge of the group, and from the fill (5191) of gully [5190] there was a fragment of human mandible from a young adult.

The pits were sub-circular/oval to sub-rectangular in form. The smaller pits ([5192], [5194], [5521] and [5523]) were 0.60-0.84m in diameter and 0.25-0.40m deep, while the largest pit [5196], measured 2.9m east to west by 1.8m wide and 0.56m deep. An iron knife and iron plate fragment (Plate 6) was retrieved from the upper fill (5197), while other iron objects from these pits included a knife, a finger ring, nails, a plate and rod fragment. They also produced pottery dating from the middle 3rd to 4th centuries, and a quantity of cattle bone, including an ox skull from fill (5195) of pit [5194] that displayed cut marks from skinning. The domestic items may have come from a focus of domestic activity that lay in the northern part of the enclosure, beyond the excavated area.

The watering hole

The watering hole [5171] was sub-oval, 8m wide and in excess of 9m long by 2.2m deep, with a steep southern slope and a gentler but uneven northern side, which may have provided access for animals (Fig 14, Section 114). The earliest fill (5277) may have been trampled clay resulting from animals eroding the edges. The secondary fill (5216) contained a substantial assemblage of middle 3rd to 4th century Roman pottery (Fig 17, profiles 5-9), while the dark grey to black silty clay upper fill (5172) also contained middle 3rd to 4th century pottery and four coins of a similar date. Other finds from these silts include a copper alloy buckle plate and strap end, iron nails, hobnails, a whetstone, fragment of millstone, a large number of cattle bone from butchery waste and some horse bone.

A small pit [5217] was cut into the secondary fill of the watering hole (5216), which was subsequently sealed by fill (5207).

Sub-enclosure 12, 13 and 14

The southern half of the enclosure, sub-enclosure 12, was essentially a single open area, measuring 70m east-west by 30-40m north-south; an area of approximately 0.25ha.

A few linear gullies adjacent to the enclosure ditches may have defined a small pen to the south, sub-enclosure 14 bounded to the east by an L-shaped gully [5400], while a ditch [5428] running northward from the southern arm of the enclosure may have partially partitioned the south-eastern corner, sub-enclosure 13.

A few small pits and postholes ([5497], [5517] and [5499]) lay near sub-enclosure 14.

Inhumation burial

A single inhumation burial lay in the north-western corner of sub-enclosure 13, and had been truncated by a curvilinear gully [5329] (Fig 13). The grave [5406] was aligned east-west, 1.6m long by 0.5m wide and 0.15m deep. The inhumation was extended and supine, with the head at the west end. The remains were in a poor condition, but were of an adult male, over 40 years old, with worn teeth, while a low degree of joint degeneration may indicate that this person had not been involved in frequent heavy manual labour, although there was some spinal trauma. The individual exhibited anaemia, perhaps resulting from parasitic infection, disease or lead ingestion.

Enclosure 2

The ditches of the southern enclosure were also directly recut at this time, and the internal divisions were also reorganised (Fig 13).

The enclosure ditch

The re-cut ditch, [5136] by [5124]/[5156] (Plates 1 & 2) on the eastern side and ditch [5067] on the northern side, were steep sided with a broad flat bases (Figs 12 & 14, Sections 61 & 80). They were 1.8-2.2m wide, but exceptional broad, at 4m wide, at the north-east corner. The north-west corner and the western side of the enclosure, ditch [5043], had a more distinct V-shaped profile, 1.5-1.8m wide (Fig 8, Section 41). The ditch was between 0.67-0.84m deep.

The hollow formed at the north-eastern corner of the enclosure might have derived from some form of disturbance, possibly the use of this area for driving animals across the open but broad and shallow ditch.

The upper fill of the ditch along the east arm of the enclosure was distinct in that it contained a large quantity and variety of finds. This included a pottery assemblage that was dated to the middle to late 4th century (Fig 17, profiles 12 and 14), and other finds included coins of the 3rd to 4th century, iron and copper objects and debris from bronze casting and lead working. A quantity of sheep, pig and cattle bone was also recovered from the upper fills, along with charred cereal remains.

Sub-enclosure 15

The most prominent internal division was a major east to west ditch [5094], 1.5-1.8m wide and 0.54-0.72m deep, which extended approximately to the centre of the enclosure (Fig 14, Section 51). This ditch, together with a shorter length of ditch running north from the southern arm of the enclosure, formed a square sub-enclosure, measuring 31m by 22m, an area of 0.07ha.

Within the enclosure there was an oval layer of gravel, cobbles and limestone [5246], which contained 3rd to 4th century pottery, some iron nails and an iron plate fragment; additionally there was a nearby pit [5280] and a gully [5446].

Sub-enclosure 16

In the north-west corner of the enclosure a second large sub-enclosure, measuring 31m by 28m, an area of 0.09ha, was formed by the east-west partition ditch [5094] and a short length of ditch [5432] (Fig 11, Section 167) attached to the northern enclosure arm.

Sub-enclosures 17, 18 and 19

Within this area a number of minor gullies may have formed a series of sub-areas set against the principal boundaries. Sub-enclosure 17, 15m long by 10m wide, lay in the south-western corner, flanked by a dog-legged gully [5483]. Sub-enclosure 18 occupied the north-eastern corner, but can be seen as merely an extension of the central open space. In this area a pit [5444], 0.7m diameter by 0.2m deep, lay at the south end of gully [5442]. The upper fill (5445) was dark grey clay loam containing abundant cereal grains (wheat, oats and barley), derived either from storage waste or processing. Fired clay was also recovered from this pit and a large plate of fired clay came from the adjacent enclosure ditch [5043]. Both the cereal grain and the fired clay suggest the nearby presence of a clay-lined oven.

Sub-enclosure 19 was a rectangular area adjacent to the enclosure ditch and flanked to the east by ditch [5432] and to the west by a short length of gully [5442].

Sub-enclosure 20

As previously, the eastern half of the enclosure was open but contained a number of detached and discontinuous linear and curvilinear gullies. The longest of these [5412], [5556] and [5574/86] may have formed a central enclosed space.

External features

To the immediate south of the southern arm of the enclosure there was a length of gully [5241] that was truncated by a linear ditch [5201], which had a broad U-shaped profile up to 1.12m wide and 0.28m deep. To the east of the enclosure there was a single shallow posthole [5581] and a gully [5198] lay at the edge of the excavated area. To the north, lying within the driveway, there was an oval pit [2008] measuring 1.2m by 0.75m and 0.13m deep.

5.6 The decline of the settlement in the late Roman period (later 4th century AD)

In the mid to late 4th century there was a final reorganisation of the two enclosures, but the reduced scale suggests that the settlement was then in decline (Figs 5 and 15). The southern and northern halves of the two enclosures appear to have been abandoned, while on the other halves the enclosure ditches were recut and the interiors reorganised.

Enclosure 1

Part of the central east-west partition ditch [1804] and a ditch running northward [5012] were recut to form a much reduced enclosure, encompassing the northern area, which had probably been the major focus for domestic occupation prior to this.

The western ditch [5012] comprised a broad flat-based cut, up to 2.2m wide and up to 0.65m deep, while the southern ditch [1804] was 0.45m deep. The fills contained pottery broadly dated to the 4th century while a number of coins date to the late 4th century. Other finds recovered from the ditch include animal bone, iron nails, hob nail, iron plate and a glass fragment. The animal bone assemblage indicates that animal husbandry was probably still the primary economic activity.

The animal watering hole [5171] would still have been a dominant feature but would probably have been reduced to a shallow, boggy hollow. The only internal feature was a hollow [5187], measuring 7m by 7m by 0.2m deep, and overlying an earlier group of pits, which contained a dark brown to black silty clay-loam. The fill contained a moderate amount of middle to late 4th century pottery, although continued activity up to the end of the century and even into the early 5th century is a possibility.

Two gullies, [5329] and [5485], extended southwards from the southern arm of the enclosure ditch. Further south, there were two undated, sub-circular pits, [1816] and [1818]

Enclosure 2

Only the southern half of the southern enclosure was recut, to form a rectangular enclosure measuring 56m east-west by 23m north-south, an area of 0.125ha. The enclosure ditch on the western [5029] and southern [5148] sides comprised a broad flat-based cut, 1.65-2.30m wide and up to 0.72m deep (Fig 11, Section 64, Plate 3), while there was a short length of a new eastern arm [5159] (Fig 14, Section 80). The northern side was formed by recutting the existing internal division [5088], which was up to 1.8m wide by 0.65m deep (Fig 14, Section 51).

The pottery assemblage from the ditch fills was predominately from the late 4th century (Fig 17; 10, 11 & 16), although it is possible that activity continued to the end of the century and perhaps even into the early 5th century.

A large quantity of animal bone was retrieved from the northern arm of the enclosure, ditch [5088]. This contained the remains of sheep that displayed elements of probable trimming waste, with the removal of heads, feet and hooves during primary butchering. The same deposit also yielded cattle and horse bones. This indicates the likelihood that animal rearing continued as primary function of the settlement, with associated butchery and processing.

An antler from a mature red deer stag had been shed, and may have been collected for craft working, and a young foal, represented by a radius shaft, was also recovered from the same ditch [5029] at the south-west corner of the enclosure. The same ditch fills also produced the only evidence for the exploitation of wild game or wildfowl, and an isolated hare femur and a single ulna of a tufted duck.

Other finds from the enclosure ditch include ceramic building material, iron nails, a copper alloy stud, a fragment of window glass and a small amount of fired clay, which indicate the presence of nearby domestic occupation.

Sub-enclosure 21/22

The main part of the enclosure was an open area, although it is tentatively postulated that two postholes [5470] and [5561] may have formed part of a north-south fence line creating a division into eastern, sub-enclosure 22, and western halves, sub-enclosure 21. The western area contained a linear gully [5008], a curvilinear gully [5535] and a pit [5005]. The lower fill of the pit contained fired clay, a fragment of ceramic building material, and a fragment from a quern, while the upper fill contained 4th century pottery and animal bone.

Sub-enclosure 23

To the west, an L-shaped gully [5380] formed a sub-enclosure measuring 15m north-south by 11m; this perhaps represents a small animal pen.

External features

A pit [5057] lay adjacent to the southern edge of the original northern arm of the enclosure (Fig 7, Section 52). The pit measured 1.6m by 1.2m, with steep sides, and was up to 0.4m deep. The fill (5058) contained two late 3rd-century coins, a complete copper alloy bracelet, with a grooved pattern and zoomorphic terminals probably represented by the heads of serpents or snakes, which is characteristic of the 3rd and 4th centuries (Plate 5). Fragments of a probable 4th-century copper alloy notched decorated bracelet was also retrieved, and other finds include an iron knife (Plate 6), a lead weight, an iron plate and iron nail.

5.7 Saxon settlement

To the immediate south of the southern enclosure, there was a single Saxon sunken-featured building [5214] (Figs 5 and 15).

The building was sub-rectangular, with rounded corners, measuring 3.9m by 2.8m, with a flat base at a depth of up to 0.20m (Plate 4). The primary fill (5229) contained much charcoal, three sherds of early/middle Anglo-Saxon hand-built pottery, probably from the same vessel, and a piece of worked antler. The upper fill (5215) contained limestone fragments and a few residual sherds of Roman pottery. There was a single circular posthole [5275] adjacent to the south-west corner, 0.3m in diameter and 0.1m deep, from which a worn fragment of quern was recovered.

This building may have been an isolated feature, but other contemporary structures might have lain to the south, beyond the excavated area.

5.8 The medieval field system

The result of ridge and furrow cultivation was quite pronounced. The surviving truncated furrows ran approximately east-west and transversing the whole site. The furrows were 2.0-3.0m wide and up to 0.15m deep, with a centre-to-centre spacing of 9.5m. The furrows deepened and broadened towards the eastern edge of the site, indicating the location of possible headland. The furrows contained residual Roman material, and a medieval spur was also recovered (Plate 5).

6 THE WORKED FLINT

Andy Chapman

A total of 47 worked flints were recovered from the excavation, and it is assumed that these can be interpreted as a background scatter, residual within the contexts that they came from, and relating to intermittent Neolithic to Bronze Age activity of an ill-defined but probably transient nature.

The raw material is predominantly a grey-black or dark brown, translucent vitreous flint, with the cortex near white to brown in colour. The assemblage contains a mixture of attributes (Table 2). It is dominated by flakes, which comprise just under a half of the total flint recovered. Only a few of these showed signs of having been utilised or edge damaged, while more than a third were primary removals that retained areas of cortex. Some of these may have been the product of accidental impacts. The flakes were all hard-hammer struck and typically squat, often shorter than their width.

Two cores and a possible core rejuvenation flake (CRJ) were recovered. One core (context 1002) had two platforms at right angles, one of which had been used for the removal of some small and narrow blades, while the other platform had had squat flakes struck from it. The other core (context 5211) was essentially a shattered pebble from which a few further flakes had been removed, while the CRJ was also from a core from which squat flakes had been removed.

An earlier Neolithic element may be indicated by the small group of five blades, and particularly by the two serrated blades, a characteristic earlier Neolithic implement type. The blades were typically small, at around 21-27mm long by 11-13mm wide, although the shortest example was broken. One of the serrated blades, although broken longitudinally, was significantly larger, at 57mm long by 28mm wide. It had evidently been struck from a prepared core and the serrations had been partly ground down through use. This piece came from the subsoil (5128) and not as a residual find in a later feature.

The four scrapers comprised three end scrapers and a discoidal scraper. The end scrapers are 42-45mm long by between 20mm and 40mm wide. All three have retouch along one edge, but this is at a thinner angle than the scraper end, and more suitable for use as a cutting edge, suggesting that these were composite scrapers/knives, a type more characteristic of later Neolithic assemblages. There is also a single discoidal scraper, up to 38mm diameter.

There is a fine leaf shaped arrowhead, which is short but broad, at 28mm long by 17mm wide, and has been pressure flaked across both faces.

There is also a part of what appears to be the butt end of an unfinished arrowhead. The partial retouch has begun to form a tang that is too short to be functional, suggesting that the piece was abandoned at this stage, possible because it had fractured obliquely across the body of the arrowhead.

A further four flakes and a single blade had areas of retouch, and one of these may be an unfinished scraper, but the others cannot be assigned to recognised tool types, and there is a single notched flake.

This small group of residual flint can therefore only be broadly assigned to the Neolithic/early Bronze on the basis of such elements as the serrated blades, characteristic of the earlier Neolithic, a leaf shaped arrowhead, broadly characteristic of the Neolithic, and the composite scraper/knive and unfinished tanged, perhaps barbed and tanged, arrowhead, that would be characteristic of the later Neolithic/early Bronze Age.

Table 2: The worked flint assemblage

Flint type	Frequency
Core	2
Core rejuvenation flake (CRJ)	1
Flakes	19 (7 flakes, 37% cortical)
Flakes (utilised)	3
Blades	5
Serrated blades	2
Scraper: end discoidal	3
(Total)	1 (4)
Arrowhead	1 leaf 1 B & T
Miscellaneous retouch	5
Notched	1
Shattered piece	1
Burnt flint	2
Total	47

7 THE ROMAN POTTERY

E McSloy

7.1 Introduction

Pottery amounting to 2303 sherds, weighing 43.97kg (29.01 estimated rim equivalents) was recovered. A single sherd of probable Late Bronze Age to Early/Middle Iron Age date is present. The bulk of the assemblage dates to the Late Iron Age/Early Roman and Later Roman periods. A small quantity of Anglo-Saxon pottery and Roman crucible fragments are described elsewhere.

The condition of the pottery was variable: a few selected ditch and pit groups (ditches [5018], [5236]; watering hole [5171]), produced substantially complete vessels. More typically, pottery groups from the enclosure ditch fills or other linear features, tended to be small in quantity and well broken-up. Average sherd weight is reasonably high for a Roman assemblage at 19.1g. Surface preservation was not especially good with some later colour-coated wares suffering partial or full loss of surface slip.

Pottery was recovered from 193 individual contexts (approximately 150 features or sections through linear features). A large majority of pottery, 83.9% by sherd count, derived from linear features (ditches and gullies), with the bulk of the remainder (14.1%) recovered from pits.

7.2 Methodology

The pottery was sorted into fabrics primarily by macroscopic observation and sherd count and weight recorded for each context. Where this could be determined, usually from rim sherds, vessel form was noted and rim EVEs (Estimated Vessel Equivalents) recorded. In the interests of continuity, fabric nomenclature is adapted from that developed by Marney (1989) and utilised for most subsequent publications of pottery from the Milton Keynes area. Fabrics are in addition matched against the National Roman Fabric Reference Collection codes (Tomber and Dore

1998). Fabrics are listed, with relevant concordances, in Table 3 (Appendix 1). All fabrics are well documented elsewhere and no attempt is made to duplicate descriptions.

7.3 Assemblage Composition

Late Prehistoric to 1st century AD

A single hand-built, fine flint-tempered sherd was recovered from ditch [5048 and would seem to be residual in its context. The use of crushed, burnt flint as tempering is in this region most commonly associated with the transitional period between the Late Bronze Age and Earlier Iron Age periods (Bryant 1995, 17; Slowikowski 2005, 106). If such a date is correct this sherd is the sole evidence for activity of this period from the site.

Pottery of Late Iron Age/Early Roman type amounted to 319 sherds (4735g), of which 33 sherds were residual in later Roman contexts. Typically, for groups of this date, two fabrics (grog-tempered type 46 and shelly type 1.1) dominate, with mixed-inclusion types 45 and 46qr, a minor component. A distinction has been made here between the shell-tempered wares present in the earlier groups and material typical of the later Roman assemblage, which was uniformly wheelthrown, measurably finer, and fired to a more uniform colour. The source for all material of this date is likely to be fairly local. Shell-tempered wares may come from a variety of sources which are likely to include Harrold, Bedfordshire (Brown 1994). Forms conform to types associated with the area equating with Thompson's north-west zone 8 (Thompson 1982): among grogged ware these consist of wheelthrown necked jars or bowls (Fig 17, 1) with rippled neck (Thompson type B2-4) and a single carinated bowl/cup of Thompson type E1-3 (Fig 17, 2). Typical among shelly wares are lid-seated/channel-rim forms (Fig 17, 4), characteristically with diagonal slashed decoration (Thompson type C5-2).

Roman

Pottery of Roman date amounted to 1983 sherds weighing 39227g Table 3 (Appendix 1). Imported continental material was restricted to a small group of Central Gaulish samian, a single Central Gaulish black-slipped ware beaker sherd and a single sherd from a Baetican (southern Spanish) amphora. All this material dates to before the mid-3rd century AD and is considered residual.

British finewares are dominated by products from the Lower Nene Valley and larger quantities of Oxfordshire wares Table 3 (Appendix 1). The relative importance of the two ware types reflects geographical as well as chronological factors; the seeming 4th century focus of the assemblage. A few earlier (probably 3rd century) Oxfordshire products occur, consisting of white and orange wares in forms imitating samian types (Fig 17, 7-8). Red or brown colour-coated wares comprise bowls of various types (Fig 17, 10-11) together with a single flagon (C14). Necked (C75-80), wall-sided, (C81, C83) and imitation Drag. 38 (C51) bowl forms are most common, suggesting that most material dates to after *c.* AD 325 or 350 (Young 1977). Oxfordshire wares account for the majority of mortaria from the site, with Lower Nene valley types making up the remainder. A single mid/late 3rd century mortarium, of Young's M18 class is present. The remainder, in white, white-slipped or red/brown slipped fabrics, consist of standard later Roman types comprising flanged (M22, C100, WC7) or wall-sided (C97) forms.

Lower Nene valley products occur primarily as colour-coated wares with some white/creamwares. Two sherds of Lower Nene valley mortaria were recovered, including a rim-sherd of characteristic reeded-rim form (Howe *et al* 1980, no. 102). Among finewares there is little overlap of forms with Oxfordshire products; the Lower Nene component primarily comprising beakers, 'castor boxes', and 'coarseware' classes - plain-rimmed dishes, wide-mouthed jars/bowls and flanged bowls. Beakers are predominantly late funnel-necked forms, including a good example of a pentice-moulded type (Fig 17, 13) of 4th-century date (*ibid.* 1980,

20-2). The range of forms, in particular the preponderance of 'coarseware' types, is further evidence for a 4th century emphasis to the assemblage.

Small quantities of Hadham wares are present among larger 4th century groups. Identifiable forms are restricted to necked bowl-jars; forms most characteristic of the repertoire typifying the expansion of this ware type from the beginning of the 4th century.

Typically for the region, coarsewares comprise material in differing traditions from more or less local sources. Most numerous among coarsewares are fossil-shell tempered wares, originating largely or entirely from Harrold, north Bedfordshire. Such wares account for 38% of the Roman assemblage. Evidence from the Milton Keynes area suggests increasing dominance from the mid-4th century. This corresponds with a wider expansion of the ware type seen through Harrold products reaching western Britain for the first time, perhaps as late as the 360s. Forms comprise medium-mouthed necked jars, and wide-mouthed flanged or flat-rimmed bowls, with fewer large storage jars and plain-rimmed dishes. The range is consistent with the late production of the ware as demonstrated by investigations at the kiln sites (Brown 1994, 64-78). Most common, accounting for 50.2% of all identified forms of this ware type (by EVEs) are necked jars with undercut hooked rims (Fig 17, 16). Mid/late 4th century dating is typically applied to this form type based on their occurrence in kiln deposits of this date (*ibid.* 1994, 72-8) as well as contemporary consumption sites (Brodribb *et al* 1971, 68).

Soft pink grog-tempered wares are well represented in the assemblage Table 3 (Appendix 1). A local origin, long suspected based on the abundance of the type from the Milton Keynes area (Booth and Green 1989; Marney 1989, 64-9), is demonstrated by discovery of kilns from Stowe Park, Bucks (Booth 1999). Typically for the region forms consist of wide-mouthed necked jars/bowls and large storage jars.

Local reduced sandy wares, types 3 and 9, together make up 22.2% (by count). With the exception of a single flagon, forms are utilitarian, consisting of necked jars, flanged bowls and plain-rimmed dishes. Bowls and dishes mostly follow late Black Burnished ware 1 forms, suggesting that most of this material post dates *c.* AD 250/75.

Non-local coarsewares are few in number consisting of two sherds of Dorset Black-Burnished ware (BB1) and a single sherd of Lower Nene valley greyware. The source for the burnished greywares, present in mid/late 4th century groups, is uncertain. An East Midlands source is sometimes asserted for this ware type, although Oxfordshire would seem equally likely. A more substantial group of material (fabric 14) comprising grey or black-firing wares distinguished by a pale grey core is as identifiable as products of the Upper Nene valley. Kilns producing such material are known from Ecton, Northamptonshire (Johnston 1969). Identifiable forms are restricted to jars, some with multiple neck cordons which can be characteristic of the type. Further material, consisting of gritty whiteware sherds and a buff-firing vessel with painted lattice decoration may also derive from the Upper Nene valley, an area known to produce a diverse range of wares during the Roman period.

7.4 Chronology

Previously published pottery groups, selected from larger assemblages from the Milton Keynes area (Marney 1989), form the basis for ceramic phases set out below.

Ceramic Phase 1: 1st century AD

The majority of this material was associated with ditches located within the north part of the site. Most material occurs as small groups of sherds in grogged or coarse shell-tempered fabrics. A larger group of 131 sherds, which included substantially complete vessels (Fig 17, 1-3), derived

from ditch [5018]. The location of this group, close to the northern extremity of the site, may indicate that the focus for activity of this date lies to the north.

A date between *c* AD 25 and *c* AD 60 is considered likely for this group and probably the bulk of the remaining assemblage. Lid-seated jar forms with slashed rims, suggest dating to the middle years of the 1st century (Friendship Taylor 1999, 13). Near absence of ‘developed’ (sandier) fabrics and of certain forms including butt-beaker/girth beaker copies make later dating unlikely.

Ceramic Phase 2: late 1st to 2nd century

Few contexts could be ascribed to the period with certainty although residual samian and amphora sherds are of this date. Two gullies, [5072] and [5312], each of which was located in the north-easternmost quadrant of the site, produced small groups (6 and 22 sherds respectively) most likely of this date. Fabrics consist of grogged types including ‘developed’, mixed inclusion types, wheelthrown shelly-tempered material and coarse reduced sandy wares. Identifiable forms include wheelthrown lid-seated jars in shelly ware (Fig 17, 4).

Ceramic Phase 3: mid/late 3rd centuries

Context 5207, a lower fill of watering hole [5171], produced the only group certainly of this date. Ditch 5068 might be of comparable date, its lower fill (context 5270) producing large, unworn and joining sherds from an Oxfordshire whiteware mortarium (M18), and dateable to *c.* AD 240-300 (Young 1977, 70). The upper fill of this feature (context 5172) included a sherd of Oxfordshire red colour-coated ware, probably indicating a date after AD 270/300.

Seventy-two sherds were recovered from the watering hole fill (5270). Harrold shell-tempered ware is most numerous Table 4 (Appendix 1), with vessels in this fabric and Oxfordshire whiteware bowl substantially complete and possibly representing losses in use. Local greywares, fabrics 3 and 9, are poorly represented and forms restricted to a single plain-rimmed dish. Harrold products include jars (Fig 17, 5) with well-defined necks and a wide-mouthed bowl (Fig 17, 6), comparable with examples of 3rd-century date from the kiln site (Brown 1994, 64-8). Third century dating, perhaps tending to the second half of that century, is suggested by the one Lower Nene valley colour-coated ware vessel present in this group (Fig 17, 9), a bowl form copying samian Drag. 35/36 (Howe *et al* 1980, 24; Perrin 1999, 102). Significantly, Oxfordshire red/brown colour-coated wares are absent from this group. Oxfordshire products which do occur consist of a whiteware bowl (Fig 17, 7), loosely in imitation of samian form Drag. 37 (Young type W54) and a burnished orange-firing bowl (Fig 17, 8) imitating samian form Drag. 18/31 (Young’s type O41). A date between *c.* AD 100 and 300 has been suggested for both types by Young (1977, 107; 196).

Ceramic Phase 4: mid/late 4th century

Later Roman dating was evident for the majority of dated contexts, particularly from the area of the southern enclosure. Aspects of the assemblage viewed overall suggest a clear emphasis within the second half of the 4th century. Strongly indicative of this is the abundance of Harrold shell-tempered wares Table 5 (Appendix 1), which by all measures, is close to the figure from previously dated groups of mid/late 4th century AD (Marney 1989, 47-57). Relative quantities of local greywares, pink grogged ware and traded wares also correspond closely with previously published material.

Selected, larger groups are set out below Tables 4-5 (Appendix 1) and a sample of vessels from Ceramic Phase 4 is illustrated (Fig 17, 10-16). The groups were associated with southern enclosure, from the fills of enclosure ditch itself [5124, 5132, 5157, 5237] or from internal features/deposits (spread 5187), for which dating in the middle or later years of the 4th century is evident from the presence of certain fabrics or vessel forms. Compositionally, the groups fit the model for mid/late 4th century dating as described above. There is no clear and specific

evidence, as might be supplied from certain vessel forms among Lower Nene valley or Hadham wares, for activity extending up to the very final years of the 4th or into the 5th century. However the rarity of such forms in much larger assemblages means that continuance up to this period should not be excluded as a possibility.

Specific date markers are provided by Oxfordshire products: C75-8 necked bowls (Groups 5124 and 5156) and rosette-stamped form C83 from spread 5187; and more commonly Harrold ware jars with undercut, hooked rims, which are represented in all contexts. Vessels present in other ware types, notably Lower Nene valley colour-coated ware 'coarseware' forms, Hadham bowl-jars, pink grogged large storage jars, as well as Oxfordshire and Lower Nene valley mortaria, all are consistent with the dating offered.

7.5 Discussion

Summary

In terms of composition the later Roman (and earlier groups) compare closely with previously published material from the area (Marney 1989; 1994, Parminter 1996). The earliest stratified material, 'Belgic' grogged and shelly wares of probable mid 1st-century AD date, are associated with ditches in the north of the site. A dearth of stratified 2nd and earlier 3rd century material suggests hiatus or shift of activity at this time. Limited evidence for activity in the second half of the 3rd century occurs in the north-east area of the site. The larger part of the assemblage, including most or all of material associated with the southern enclosure, dates to the period after *c* AD 300/325.

Function and status

The total figure for finewares/specialist wares, elsewhere taken as an indicator of relative status (Booth 1991), is 14.9% by sherd count. Equivalent figures for large later Roman groups from the Milton Keynes area, which incorporate some material from the Bancroft Roman villa (Marney 1989; 1994) are consistently and markedly higher, between approximately 22%, rising to over 40% for a Late 4th/Early 5th century group from Bancroft. A midden group from Bancroft, at 1911 sherds roughly equivalent to the entire assemblage described here and contemporary, produced a figure of 25% for fine or specialist wares (Marney 1994, 504-5). Based on this evidence the pottery would seem to be indicative of lower status, consistent with that of a smaller agricultural community. A breakdown of forms illustrates a typically utilitarian Roman assemblage, dominated by jars (63.2% of EVEs), followed by bowls (22.4%), dishes (5.6%) and beakers (4.6%). Flagons and mortaria, contribute 1.3% and 2.9% respectively, figures which could be seen as reflecting lower status.

Catalogue of illustrated pottery (Fig 17):

Ceramic Phase 1

- 1 Fabric 46. Bowl/jar with neck cordons. Wheelthrown, burnished.
Ditch 5018. Fill 1820. Phase 1, Enclosure 1, Sub-enclosure 1.
- 2 Fabric 46. Carinated necked cup/small bowl. Wheelthrown, burnished.
Ditch 5018. Fill 1820. Phase 1, Enclosure 1, Sub-enclosure 1.
- 3 Fabric 1.1. Channel-rim jar. Slashed decoration to rim outer. Handmade.
Ditch 5018. Fill 1820. Phase 1, Enclosure 1, Sub-enclosure 1.

Ceramic Phase 2

- 4 Fabric 1. Channel-rim jar. Wheelthrown. Gully 5072.
Fill 5073. Phase 1, Enclosure 1, Sub-enclosure 2.

Ceramic Phase 3

- 5 Fabric 1.2. Necked jar with out-curved rim.
Watering hole 5171. Fill 5207. Phase 3, Enclosure 1, Sub-enclosure 11
- 6 Fabric 1.2. Wide-mouthed bowl with flanged rim.
Watering hole 5171. Fill 5207. Phase 3, Enclosure 1, Sub-enclosure 11
- 7 Fabric 18c. Bowl imitating Drag. 37. (Young type W54).
Watering hole 5171. Fill 5207. Phase 3, Enclosure 1, Sub-enclosure 11
- 8 Fabric 35. Bowl imitating Drag. 31. (Young type O41).
Watering hole 5171. Fill 5207. Phase 3, Enclosure 1, Sub-enclosure 11
- 9 Fabric 6 (LNVCC orange fabric). Bowl imitating Drag. 36.
Watering hole 5171. Fill 5207. Phase 3, Enclosure 1, Sub-enclosure 11

Ceramic Phase 4

- 10 Fabric 24. Wall-sided bowl with stamped rosette decoration (Young C78).
Ditch 5159. Fill 5160. Phase 4, Enclosure 2.
- 11 Fabric 24. Wall-sided bowl with rouletted decoration (Young C81).
Ditch 5148. Fill 5149. Phase 4, Enclosure 2.
- 12 Fabric 6. Wide-mouthed jar.
Ditch 5132. Fill 5133. Phase 3, Enclosure 2.
- 13 Fabric 6. 'Pentice-moulded' beaker.
Ditch 5485. Fill 5486. Phase 4, Enclosure 6.
- 14 Fabric 2. Large storage jar.
Ditch 5132. Fill 5486. Phase 4, Enclosure 2.
- 15 Fabric 1.2. Wide-mouthed, flanged bowl.
Ditch 5249. Fill 5248. Phase 2, Enclosure 2, Sub-enclosure 7
- 16 Fabric 1.2. Necked jar with hooked, undercut triangular rim. Rilled body.
Ditch 5236. Fill 5149. Phase 4, Enclosure 2.

8 OTHER ROMAN FINDS

Tora Hylton, Ian Meadows, Andy Chapman, Pat Chapman

8.1 Introduction

The majority of the finds were recovered from Roman deposits; small numbers were recovered from contexts pre-dating the 3rd century (Phases 1 and 2 of the Roman enclosure system), while the majority came from features relating to 3rd and 4th century occupation (Phases 3 and 4 of the enclosure system). Residual Roman finds and medieval/post-medieval finds were recovered from furrows and topsoil deposits.

In total, 123 individually recorded small finds in seven material types were recovered (Table 6). Of that number, 30 were recovered from the tops of features, furrows and unstratified topsoil deposits by metal detector. Each object has been described and measured, and a descriptive catalogue of all the finds is retained in the archive.

Table 6: Small finds quantified by material type

MATERIAL	TOTAL
Copper alloy	53
Iron objects	52
Lead	3
Stone (not including flint)	7
Ceramic	1
Antler	2
Glass	5
Total	123

Seventeen iron objects (excluding nails and small fragments) were submitted for X-ray to provide a permanent record and aid identification. No stabilisation was carried out. All sensitive finds are packaged in air tight plastic containers with silica gel and an indicator card, to maintain a low humidity and reduce deterioration.

In total there are 105 Roman small finds. Of that number, 94 were recovered from Roman deposits dating from the 1st-4th centuries and 11 were retrieved from medieval furrows and unstratified topsoil deposits. A small number of post-medieval finds were recovered as intrusive finds within Roman deposits (specifically fragments of glass). Although much of the assemblage comprises nails and undiagnostic fragments, there are a small number of finds which provide a brief insight in to some of the activities which may have taken place within the site. There are tools that attest to textile manufacture, leather working and the processing of grain (see quern report), together with coins (see coin report) and items utilised for personal adornment. There are very few structural fittings, perhaps suggesting that the occupation focus did not lie within the excavated area. However, structural debris in the form of ceramic roof and hypocaust tile was recovered, but not related to any structure in the excavation area; it is possible that it may have been imported to the site as hardcore, possibly from Stanton Low just 1.5 kilometres to the west. The finds are published as individual types within five major functional categories. The categories are tabulated along with the quantities recovered in Table 7, listed by the phasing of the Roman enclosure system (see Table 1).

Table 7: Quantities and type of finds/functional categories by phase

FUNCTIONAL CATEGORY	PHASE				
	Phase 1	Phase 2	Phase 3	Phase 4	Furrow/ U/S
Coins			20	5	7
Personal Possessions					
Costume and jewellery			2	2	
Hob nails		1	2	1	1
Toiletry Equipment			1		
Equipment and furnishings					
Structural fittings				1	
Structural nails		4	10	7	1
Household equipment				1	1
Querns		3	1	2	
Tools			3	1	
Miscellaneous and unidentified					
Copper alloy	1		5		1
Iron		5	6	3	
Lead			1	1	
Glass		1	2	1	
Antler and bone				1	
Total	1	14	53	26	11

Late 2nd -3rd century AD (Phase 1)

Only one object was recovered from Phase 1 deposits (Enclosure 1), a small undiagnostic fragment of rolled copper alloy sheet. It was recovered from a ditch [5072] on the northern edge of the site.

Late-2nd-3rd century AD (Phase 2)

Fourteen small finds were recovered from a series of 2nd-3rd century ditches [5026, 5243, 5260, 5268, 5327, 5392] and gullies [5151, 5248, 5288, 5458, 5556] associated with Enclosure 2. The assemblage includes nails, quern fragments and small undiagnostic fragments of iron.

Middle-late-3rd-4th century AD (Phase 3)

The majority of finds were recovered from Enclosures 1 and 2 in the middle to late 3rd to 4th century. The former produced 29 finds from the fills of the enclosure ditches [1910, 2016, 5000, 5065, 5120, 5175] and a watering hole [5171] while smaller numbers were recovered from gullies [5205, 5329, 5428] and pits [5221, 5525, 5529, 5531]. The assemblage includes 12 coins dating to the 3rd/4th century and a small group of domestic items (querns, knife, spindle-whorl, awl), together with a finger ring. An additional 25 finds were retrieved from enclosure ditches [5023, 5107, 5124, 5132, 5210, 5432] and includes 8 coins dating to the 3rd/4th century, a finger ring and a selection of nails and undiagnostic fragments (see coin and quern reports).

Late 4th century AD (Phase 4)

Fifteen objects were recovered from Enclosure 1 in the late 4th century, small numbers came from a layer [5187] overlying a group of 3rd/4th-century pits and associated enclosure ditches [1722, 5144, 5148]. Finds include three coins, a swivel and loop, a holdfast and two hobnails.

Nine small finds were recovered from Enclosure 2, the majority (8) were recovered from a pit [5057], and they include two bracelets, two coins of 3rd/4th century date, a knife and a quern (see coin and quern reports).

8.2 Personal possessions

Costume and jewellery

There are four items of jewellery; they include two bracelets and two finger rings. The two bracelets were recovered from a small pit [5057] associated with Enclosure 2 (Phase 4), together with two late 3rd-century coins (see coin report), a knife and a lead weight. One of the bracelets is complete; it is penannular (diameter: 67mm) with opposing zoomorphic terminals; the eyes are defined by shallow recesses and the open mouth by V-shaped notches. Although stylistically different from bracelets with flattened terminals, these heads probably represent those of serpents or snakes. Two transverse grooves separate the terminals from the rest of the hoop, which is ornamented with close-set oblique grooves resembling imitation cabling (Plate 5). Stylistically this piece displays similar characteristics to chip-carved examples of the 3rd and 4th centuries; a similar almost 'identical' example has been recovered from Cirencester (Cool 1979, fig 2, B). Representations of snakes and serpents on items of jewellery are common during the Roman period, specifically in the 3rd and 4th centuries, they symbolise health and healing, rebirth and the spirits of the departed (Johns 1998/2000, 7). For a discussion on bracelets and rings in the form of snakes, see Johns (1996: 334, Plate 5).

The second bracelet was represented by two small fragments manufactured from rectangular-sectioned strip ornamented with transverse notches. Originally the bracelet would have measured c.60mm in diameter. Bracelets of this type are relatively common and similar examples have been recovered from 4th-century deposits at the nearby Bancroft Villa, Milton Keynes (Hylton, T, and Zeepvat, R J, 1994, fig 141, 73), a cemetery deposit in Colchester (Crummy 1983, fig 43, 1657) and rubble deposits at Gadebridge Park Villa (Neal and Butcher 1974, fig 60, 153).

The two fingers rings were recovered from Phase 3 deposits. The first of these is a plain iron finger ring from a pit [5531] in Enclosure 1. Although incomplete, part of the hoop is missing; it comprises a fine circular-sectioned hoop, which widens out towards a flat plain bezel. It displays similarities to a Henig Type III (1978, fig 1), which are usually furnished with an intaglio setting; in this case the setting appears to be missing. Iron finger rings were popular during the 1st and 2nd centuries, after that period copper alloy fingerings were in vogue, for a brief discussion see Manning (1985: 78, Plate 6). The second is an annular copper alloy finger ring, from a ditch [5124] in Enclosure 2. The hoop is small and has been made from a fine flat-sectioned strip (internal diameter: 17mm). A fingering of this size would probably have been for use by a child. The bezel is flanked on either side by a small panel of transverse notches and is rather like an example from a grave deposit in Colchester dating to c.320-450AD (Crummy 1983, fig 50, 1765).

Hob nails

Five iron hob nails from shoes were recovered: two from a gully [5556] (Phase 2), one from a ditch [5120] (Phase 3), one from an enclosure ditch [5210] (Phase 4) and one from a furrow. They all have hollow domed heads measuring 8-10mm in diameter and square-sectioned shanks measuring up to 15mm in length.

Toiletry equipment

A possible mixing-palette was recovered from watering hole [5171] in the northern enclosure (Phase 3). It comprises a flat rectangular-shaped piece of fine-grained micaceous limestone, the upper surface and one of the edges display signs of extreme wear. Such slabs of stone are known to have been used to mix cosmetics or medicines. Palettes with worn edges (like this example) are thought to have been used to sharpen scalpels (Crummy 1983, 57). On the underside there is a

short V-shaped groove, possibly a scalpel/knife point sharpening groove. Similar examples have been recovered from Colchester (Ibid 1983, fig 61, 1865,1867).

8.3 Equipment and furnishings

Building equipment

There is little to characterise the nature of the buildings that may have once existed on the site, but there are a small number of objects which may have been used as part of a structure, these include a single holdfast and 23 nails. A holdfast was recovered from layer (5187) on the northern edge of the site, together with a fragment of iron plate and three nails. Although incomplete, it has a square-sectioned shank with sub-circular rove, and would have been used for joining two pieces of wood together.

Twenty-three nails were found on the site, small numbers were recovered from Phase 2, but the majority of nails were recovered from Enclosure 2 (Phase 3) and Enclosure 1 (Phase 4). Of the total number, 12 examples are incomplete and include headless shanks measuring up to 72mm in length. Identifiable nails have been classified according to Mannings Type series (1985, 134ff), there are three different types. The majority are Mannings Type 1B (6) with flat sub-circular heads and measuring from 40-87mm; the majority clustered between 52-60mm. This type would have had any number of uses. There are two nails with triangular heads (Manning Type 2), which measure from 75-100mm in length; this type are relatively common, their size and head shape suggest that they would have been driven completely into timbers, making them invisible from a distance (Manning 1985, 135). Finally there are 3 nails with T-shaped heads (Manning Type 3), they measure 64-80mm in length and would have been for use with timber.

Household equipment

There is a dearth of household related items from the site, suggesting that the principle area of occupation lay outside the area of excavation. Items worthy of note include a swivel and loop and a fragment of a spoon (Plate 5). The swivel and loop was recovered from enclosure ditch of Enclosure 1 (Phase 4). It comprises a circular-sectioned oval loop with concave sides, one end is flattened and is furnished with a large eye through which passes the swivel. The swivel has a large flat head, tapered circular sectioned shank that is looped at the terminal. Such objects could have had many uses, but in general they are assumed to have been used to suspend kettles and cauldrons (Manning 1985, 138 and plate 64, S4), similar examples have been recovered from Fishbourne (Cunliffe 1971, fig 57, 23, 24).

Part of a copper alloy spoon was recovered from a medieval furrow. The bowl and most of the shank are missing, all that remains is part of the tapered, square-sectioned shank with cranked moulding below bowl. The bowl is likely to have been a fiddle or lute shaped and therefore of 2nd or 3rd century date.

Finally, a decorative copper alloy strip was recovered from the watering hole [5171] (Phase 3) and a lead weight was recovered from a pit [5057] (Phase 4). The decorative strip is parallel-sided and ornamented with a repousse motif of marginally placed dots on each of the long sides. The piece has been folded twice and has been perforated, two at one end and six random. The lead weight is heavily corroded, conical and measures 12mm across and 12mm high (Plate 5).

Tools

There is a small collection of tools that can be assigned to specific processes; there is an awl for leatherworking, a spindle-whorl for spinning and two knives.

The awl was recovered from a partially excavated watering hole [5171] (Phase 3) located on the eastern edge of the site, together with five 4th-century coins, a quern (see coin and quern reports)

and a mixing palette. It has a square cross-sectioned shank that tapers towards each of the terminals and resembles Mannings Type 4b (1985, 40), the most common form.

The spindle-whorl was recovered from a gully [5329] (Phase 3). It has been made from the body sherd of a large shell-gritted jar (Milton Keynes Fabric 1), the edges have been pared down to form a circular whorl measuring *c* 0.55mm across with a centrally placed, waisted perforation.

There are two complete knives, both examples conform to Manning Types (1985, figs 28-29). The first was recovered from a pit [5221] (Phase 3), it measures *c* 200mm in length, the back of the blade curves to the tip and the cutting-edge is horizontal then curves to the tip (Manning Type 14). Knives of this type are generally considered to be for general purpose use. The other knife, was also from a pit [5057] (Phase 4), it measures *c* 170mm in length, the back of the blade arches up from the tang (which is furnished with a terminal knob) then falls to the tip, and the cutting-edge is horizontal with a slight concavity then curves to the tip (Manning Type 18b). Knives of this type may have had a specific use.

8.4 The Roman coins

Ian Meadows

The assemblage of 32 Roman coins is characterised by their generally poor condition, this probably reflects the ground conditions in which they were found. A total of eight coins came from furrow fills, topsoil or were unstratified, the rest generally came from high up within the infill of features, in some instances the context was potentially a settlement hollow fill rather than a primary infill (coin catalogue, Table 8, Appendix 2)

The lack of precise identification of many coins was a reflection of the lack of surviving surface detail or the presence of significant corrosion deposits presumably resulting from their presence in active soil horizons rather than sealed contexts. The chronological distribution is typical of many rural assemblages being predominantly post 250AD and tailing off before the end of the 4th century. In fact the coins span the period in which 80% of the coin loss recorded by Richard Reece occur (Reece 2002, 145).

The coins for which a mint could be identified were from Arles (4) or Trier (3), these mints generally make up the bulk of coin in circulation in the midlands. The single coin of Carausius from the enigmatic C mint is less relevant to understanding money supply to the site.

It would be ill advised to use the coins to date the contexts from which they were recovered other than to provide a terminus post quem. That most were from the uppermost levels would perhaps suggest their deposition some time after their original issue. Comparison with the large assemblage recovered from Bancroft Villa showed a similar distribution with few coins (3%) dating to before 259, a similar distribution was also observed at Stanton Low. That the coins included issues of the third quarter of the 4th century suggests continued activity on the site. No coins dated to after 378, this is a generally poorly represented period in the coin record making up only 5.5% of the British mean described by Reece (op cit).

8.5 The querns

Andy Chapman

Six small fragments of worked stone are probably from broken-up rotary querns or millstones (Table 9). The largest of the fragments, from the fill (5157) of ditch [5156] in the southern enclosure, is only 115mm long, and comes from the upper stone of a lava quern. The stone is 24mm thick and would have had a diameter of *c* 500mm. The top surface is worn smooth, while on the heavily worn grinding surface there is the junction of two zones of tooled parallel grooves.

The grooves are at variable intervals of between 9mm and 15mm, and one zone is at a near right angle to the circumference of the stone while the adjacent zone is obliquely aligned. Lava querns were imported either as blanks or as finished stones from the Eifel region near the German/French border throughout the Roman, Saxon and medieval periods, with the Mayen area the largest production centre in the Roman period (Mangartz 2006).

The other five pieces, none larger than 82mm long, are all sandstone. Four of these are likely to be Millstone Grit, probably derived from the Peak District, and the fifth has a slightly finer grain, but may just be a finer-grained Millstone Grit. Three of the pieces are 22-30mm thick, with smoothed grinding surfaces, and probably come from flat rotary querns, but too little survives to say any more about the form of the querns. They come from two ditches and a pit in the southern enclosure, with one piece recovered from the watering hole in the northern enclosure. The other two pieces, from a ditch in the southern enclosure and a posthole adjacent to the Saxon sunken-featured building, are 37mm and 31mm thick. One has a probable remnant of a groove in the grinding surface, while the other surface is dimpled. The other fragment, in the finer-grained stone, has an original edge, indicating a diameter of c1m, a smoothed grinding surface and irregular remnant grooves in the other surface, which is also heavily worn. It is possible that both of these two thicker stones had come from mechanically or animal powered millstones.

Table 9: Quern and millstone catalogue

Context/feature Small find no.	Geology	Dimensions	Diameter	comments
(5007) / [5005] 115	Millstone Grit	85mm by 80mm 27-30mm thick	N/A	Smoothed grinding surface
(5157) / [5156] 77	Lava	115mm by 93mm 25mm thick	c500mm	Grinding surface grooved Upper stone
(5172) / [5171] 87	Millstone Grit	82mm by 74mm 22-30mm thick	N/A	Smoothed grinding surface Lower stone
(5244) / [5243] 96	Millstone Grit	60mm by 40mm 24-27mm thick	N/A	Smoothed grinding surface
(5262) / [5265] 99	Millstone Grit	42mm by 40mm 37mm thick	N/A	Smoothed and grooved grinding surface
(5276) / [5275] 98	Sandstone (fine grained Grit)	70mm by 50mm 31mm thick	c 1000mm	Smoothed grinding surface

8.6 The ceramic building material

Tora Hylton

A total of 115 fragments of ceramic tile weighing 13.86kg were recovered during the evaluation and excavation (Table 10). Small quantities of tile were recovered from 1st and 2nd-century deposits (2.5% by weight) and 2nd- and 3rd-century deposits (11.5%), while the largest amount was recovered from 3rd- and 4th-century deposits (53.5%) in Enclosures 1 and 2 and 4th-century deposits (27.5%) in Enclosures 1 and 2. In addition, small quantities were recovered from furrows (5%). Although the greatest amount of tile was recovered from later features, there do not appear to be any specific concentrations of tile, suggesting that it is just background scatter. Much of the assemblage is fragmentary and displays signs of abrasion, indicating that it had probably been lying around for sometime prior to deposition.

The bulk of the material comprises small identifiable fragments (65%), which can be divided into three broad functional groups: roofing tile, hypocaust tile and structural tile. The remaining 35% comprises small highly abraded fragments that are difficult to identify with any certainty. Examination of the fabrics (by eye) indicates that four main fabric types are represented, although there may be slight variations within each type. The fabric types represented correspond with those

recorded at the nearby Stanton Low Roman Villa (Woodfield and Johnson 1989, 247) which is sited 1.5km to the east, and those recorded by Zeepvat for sites in Milton Keynes (1987, 118-125).

Table 10: Catalogue of ceramic building material

TILE TYPE	FABRIC TYPE: NUMBER/WEIGHT											
	Phase 1/2		Phase 2/3		Phase 3/4		Phase 4		Furrows etc		Total	
	No	Wgt (g)	No	Wgt (g)	No	Wgt (g)	No	Wgt (g)	No	Wgt (g)	No	Wgt (g)
Roof tile												
Tegula	2	62	3	914	6	1204	4	987			15	3167
Imbrex	1	279	1	69	3	186					5	534
Hypocaust tile												
Box flue			2	91	16	2194	5	666	1	256	24	3207
Structural tile												
Pilae					1	775					1	775
Sub-floor					1	468	4	588	1	203	6	1259
Miscellaneous												
Indeterminate	1	17	7	531	38	2601	14	1576	4	194	64	4919
TOTAL	4	358	13	1605	65	7428	27	3817	6	653	115	13861

The fabrics

Shell-tempered fabrics containing abundant crushed fossil shell and fired to a pale buff to dark orange colour/brown colour. In tandem with other sites in Milton Keynes this type is predominant. A similar fabric has been recorded at Stanton Low Villa (Fabric D) and throughout Milton Keynes (Fabric 1); it displays similarities to the material produced at the Harrold Kilns in Bedfordshire (Brown 1994). It generally dates from the 3rd/4th century.

Sandy fabrics with varying quantities of fine-medium sand were generally orange/red in colour. A small amount has a distinct grey core. Stanton Low Fabric A and Milton Keynes Fabric 2. It generally dates from the 2nd century.

Similar to fabric 2 with varying quantities of sand, the surface and the core is generally buff/orange in colour and it's a hard fabric. It dates from the 2nd century. Stanton Low Fabric B and Milton Keynes Fabric 3.

Grog-tempered, soft with sparse inclusions, fired to a buff/pink colour with dark-light grey core. This fabric displays similarities to soft-pink-grog pottery (Stanton Low Fabric C and Milton Keynes Fabric 5) and dates from the 2nd-4th centuries.

Roof tile

Identifiable fragments of roof tile make up 26.6% of the total assemblage by weight and are represented by fragments of tegulae (15) and imbreces (5). There are no complete examples and the average weight of the fragments is 0.226kg for tegulae and 0.106kg for imbreces. Fragments of tegula occur in Fabrics 1, 2 and 4, with Fabric 1 being the predominant type. As would be expected, there are slight variations in the shape and thickness of the tiles, illustrating subtle differences in manufacturing technique, like knife-trimming, hand soothing etc. One fragment is furnished with a curved, finger tip impressed groove and it is probable that this is part of a signature mark, a common feature on fragments of tegula.

There are a small number of fragments from imbreces (5) weighing just over 0.5kg, the survival rate of this type of tile appears to be low, perhaps due to its shape and the thinness of its walls (c. 5mm). Fabrics types 1, 2 and 3 are represented.

Structural tile

Structural tile makes up 15.3% of the total assemblage and may be sub-divided into 2 types, pilae and sub-floor. There is one example of the former, which was used to create the pillars which support the floor suspended above the hypocaust. Like other examples from sites in Milton Keynes, it measures 30mm deep, the standard depth for pilae (Zeepvat 1987, 123). Finally there are some fragments of tile that measure up to c.45-50mm deep, it is probable that these are pieces of what have been termed “sub-floor” tile; they would have been used to support the floor. Fragments with similar dimensions were recovered from Bancroft Villa (Ibid, 24).

Hypocaust tile

Hypocaust tile is represented by 24 fragments of box flue in fabrics 1, 2, 3 and 4. Fabric 2 is predominant. All examples are furnished with horizontal, diagonal or curved combing, which have been executed with a 7, 9 or 11 pronged tool. Three fragments, including one which has been knife trimmed, are furnished with a combed ‘X’, a motif occurring on similar tiles from Stanton Low (Woodfield 1989, fig 50, 48-50). Two fragments have mortar adhering to the keying lines, indicating that they had been used prior to deposition. There is one small fragment which is roller stamped.

Miscellaneous

One other piece worthy of note is a small buff coloured fragment (fabric 3), which retains worn patches of a dark brown colour coat on its exterior surface, like an example Stanton Low (Woodfield 1989, fig 47, 12). There are numerous sites in the Midlands that have produced evidence for the use of coloured paints on roof tiles, including Bancroft Villa, Milton Keynes (Zeepvat 1987, 119,) and Wootton Fields villa, Northampton (Chapman *et al* 2005, 102-3). For further examples see Brodderibb 1987, 137.

8.7 Fired clay

Pat Chapman

This is a small assemblage of only 55 fragments of fired clay, weighing 629g, from ten contexts, three of these only producing one very small piece (Table 11). The material is variable, ranging from small, hard, slightly vesicular, amorphous lumps from fill (5560) of feature [5559], to large flattish soft silty orange sherds from fill (5028), feature [5026] that could be from a structure such as a kiln. The only fragment to show a possible wattle impression comes from fill (5224) of gully [5223], in a quite hard grey to black fabric. More grey friable clay, but flat with smoothed surfaces come from fill (5265), feature [5264]. The material from fill (5035) of feature [5034] and fill (5038) of feature [5037] are purple and friable, possibly as the result of being adjacent to a hearth. These fragments are the scattered debris from various activities, but betraying no particular focus.

Table 11: Quantification of fired clay

Context/feature	Sherd no	Weight (g)
5006 / 5005	1	7
5028 / 5026	5	208
5035 / 5034	7	42
5038 / 5037	4	48
5143 / 5142	3	18
5150 / 5148	1	6
5224 / 5223	14	177
5265 / 5264	9	75
5445 / 5444	1	7
5560 / 5559	10	41
Totals	55	629

8.8 Metalworking debris

Andy Chapman

Bronze working

A small quantity of bronze working debris was recovered from a single context (5133), the final fill of ditch [5132] at the north-east corner of the southern enclosure, which is dated to the 4th century AD.

There are four small fragments, weighing 21g, from one or more crucibles, comprising three body sherds and a plain rounded rim sherd. While there is not enough surviving material to define the exact form of the crucible, the sherds are broadly consistent with either the deeper Iron Age triangular crucibles or the smaller Roman crucibles, which are slightly globular cups, around 45-70mm deep (EH 2001, fig 22). The sherds are 5-7mm thick in a fine sandy fabric, light grey in colour, with dribbles of copper alloy dross on the outside of the rim sherd. They are not heavily vitrified, perhaps suggesting only minimal usage.

There is also a single small fragment from a clay investment mould, 26mm long by 23mm wide, as used in the lost-wax casting process. As these moulds were necessarily broken-up to retrieve the cast objects, it is rarely possible to recover the form of the objects. The surviving fragment is in a fine sandy fabric containing small quartz inclusions. It is largely grey, but with an outer surface oxidised to a light orange-brown. There are parts of two adjacent shallow impressions on the inner surface of the mould, which would be consistent with either a brooch or of the range of horse harness fittings, both of which were a common feature of bronze casting at this time.

The ditch containing the bronze working debris lay at the very north-eastern corner of the southern enclosure, and perhaps the working area from which the material came lay nearby. In examples of Iron Age bronze working, including settlement sites at Coton Park, Rugby (Chapman forthcoming a) and at Tattenhoe Park, Milton Keynes (Chapman 2006), the debris came from restricted areas at the periphery of the settlements, indicating that this was an activity kept away from the domestic areas and presumably within a specific workshop area. While the same cannot be so clearly stated in this example, it would appear that the bronze working was either taking place within the corner of the enclosure, and therefore relatively remote from other activity in the area, or perhaps even immediately outside the enclosure to the east.

Other metalworking

The fill (5209) of ditch [5208], contained a single lump of material, c 50mm in diameter and weighing 295g, which is of such a high density that it evidently has a high lead content. The lump has a deeply convoluted external surface that would appear to have formed during cooling from a

liquid state, and on one side there is a deep hollow, still partially filled with dark grey silt. The piece is presumably indicative of lead working on site, with this perhaps being the debris from an accidental spillage, and the consequent rapid cooling, of molten lead.

9 ANIMAL BONE

Philip L. Armitage

9.1 Introduction

A total of 2,119 hand-collected and sieved animal bone specimens (elements & fragments) were analysed following standard zooarchaeological methodological procedures and criteria (see Armitage 1999: 102-103). Of these specimens, 1,148 (54.2%) are identified to species and part of the skeleton, and 971 (45.8%) remain unidentified owing to the high degree of fragmentation/absence of surviving diagnostic features.

Of the 1,148 identified specimens, 1,134 (98.8%) are from mammalian species, 9 (0.8%) from bird species, and 5 (0.4%) from amphibian species, Table 12 (Appendix 3). No fish bones are present in the samples submitted for analysis.

The species represented are listed as follows:

Mammals:

cattle *Bos* (domestic)
sheep *Ovis* (domestic)
goat *Capra* (domestic)
pig *Sus* (domestic)
horse *Equus caballus* (domestic)
dog *Canis* (domestic)
red deer *Cervus elaphus*
brown hare *Lepus capensis*
water vole *Arvicola terrestris*
bank vole *Clethrionomys glareolus*
field vole *Microtus agrestis*
common shrew *Sorex araneus*

Birds:

domestic fowl *Gallus gallus* (domestic)
tufted duck *Aythya fuligula*
raven *Corvus corax*

Amphibians:

Common frog *Rana temporaria*

Apart from three bird bones of indeterminate species, the unidentified specimens are all believed to be mammalian, with small “scrappy” fragments from sieved samples making up by far the greatest proportion Table 13 (Appendix 3). The sieved samples however also yielded small mammal and amphibian specimens, see Table 19 (Appendix 3), whose identifications have contributed to our understanding of the site environment, as discussed below.

9.2 Results

For the purposes of analyses and reporting, the animal bones were divided into the following main periods based on the stratigraphy and ceramic dating:

Table 24: Analysis of animal bone based on stratigraphy & ceramic dating

Period	Feature types
Iron Age	Ditches
Early Roman	Ditches & Gullies
Later Roman	Ditches, Gullies & Pits
Saxon	Sunken-featured building

Condition of the bone

Overall, the preservation of the animal bone across the site is good with very few specimens exhibiting the effects of sub-aerial weathering/erosion/leaching/biological degradation – although many of the specimens from the ditches and gullies do exhibit signs of root etching. The conditions following burial of the bones however appear to have resulted in a tendency for many to become brittle, and therefore greatly susceptible to breakage/fragmentation (both *in-situ* [in antiquity] and during excavation). Such damage is especially noticeable in the horse and cattle skulls. For the purposes of quantification (establishing NISP values) pieces/fragments of bone recognized as deriving from the same bone element were counted as a single “unit”.

Apart from a group of 10 very “scrappy” calcined bone fragments from the fill (5276) of posthole [5275], and two burnt/blackened mammal bone fragments from ditch [5112] (fill 5113), there are only three other burnt bones from the site: from ditch [5132] one sheep humerus (burnt/blackened) (fill 5166) and one pig ulna (charred) (fill 5133), and from ditch 5156 (fill 5157) one cattle femur (charred).

The incidence of dog gnawed bone is however very much higher and whilst such bone may have been scavenged it seems likely that dogs were also being fed food scraps - including (apparently) dismembered portions of horses (Table 14, appendix 3). Apart from a noticeable “concentration” of dog-gnawed bone (1/6 horse & 6/28 cattle elements) in pit [5171] (fill 5172), such bone was scattered throughout the site in ditches, gullies and pit fills, with no apparent overall recognisable disposal pattern.

Body part representation

Anatomical distributions of the main domesticates are summarised in four tables: Table 15 (cattle), Table 16 (sheep), Table 17 (pig) and Table 18 (horse) (Appendix 3). All parts of the head, body and legs (cranial, axial and limb-bone elements) are represented, and for the meat-yielding species, indicate the presence in the excavated deposits of primary and secondary butchering debris as well as discarded kitchen/table tertiary butchering waste/food scraps. Two groups of articulated bone elements (both from later Roman deposits) are noteworthy as representing the products of carcass reduction (secondary butchering – see terminology of O’Connor 1993):

Ditch [1814] (fill 1815) - articulated series of neck vertebrae of an adult sheep, comprising an atlas, axis, and four cervical vertebrae, plus two associated thoracic vertebrae.

Ditch [5043] (fill 5044) – three articulated lumbar vertebrae from a sub adult ox.

In addition to the above, Iron Age ditch [5347] (fill 5348) yielded elements from part of the foreleg of an ox (see discussion, below).

Mention should also be made of an unusual assemblage of sheep bone elements from ditch [5088] (fills 5087 & 5089), which comprise the following:

Two skulls – 1 naturally polled (female?) & 1 horned male yearling
 16 mandibles – based on the criteria of Payne (1973) eight of the sheep represented by these lower jawbones were aged 6 to 12 months at time of death and one was aged 1 to 2 years.
 19 metacarpal bones and 18 metatarsal bones – with fused & unfused distal epiphysis
 17 phalanges (12 first, 4 second & a single hoof core)

Together these elements probably represent the trimming waste (removal of heads & feet/hooves) during the primary butchering process (see O'Connor 1993). The same deposit also yielded 12 cattle bones and 3 horse bones (including a mandible).

Ageing & sexing

Determinations of the ages at death of the major (domestic) species based on dental eruption and wear are summarized in Table 20 (Appendix 3). Age may also be determined in three of the adult horses (all from Later Roman deposits) from height measurements taken on their maxillary and mandibular teeth (method & criteria of Levine 1982), as follows:

Feature/Deposit	Element	Estimated age (years)
Ditch [5067] (fill 5069) Tooth identifies horse as male)	skull/maxilla	7 to 8 years (presence of a canine)
Pit [5171] (fill 5172)	mandible	11 – 12 years
Ditch [5177] (fill 5178)	maxilla	8 – 9 years

In addition to these three horses aged on their dentition, there is a young foal aged under 15-18 months (criteria of Silver 1971: 285) at time of death, represented by a radius shaft with both the proximal & distal epiphyses unfused/detached, recovered from ditch 5029/ fill (5030) – also of the Later Roman phase.

Table 21 (Appendix 3) gives a summary of the identified females, males, and castrates in the domestic livestock. There is a single female domestic fowl identified (criteria of West 1982 & 1985) from the later Roman phase – represented by an unspurred tarsometatarsus from pit [5057] (fill 5058).

Size

Measurements taken on selected mammal and bird bone elements are held on file in the site archival records. From GL measurements on long-bones estimates of the withers heights were made for horses, cattle, sheep, and pigs (Table 22, appendix 3).

9.3 Interpretation and Discussion

Assessment of the bone assemblages by period:

Iron Age

Only a very small amount of bone of Iron Age date was recovered and it would be imprudent to attempt to reconstruct the economy or diet on such limited evidence. However mention should be made of the disposal, in ditch [5347] (fill 5348) of Roundhouse 1, of the articulated elements of the foreleg of an ox, represented by a metacarpal bone, two first phalanges, two second phalanges and a single hoof core. A cattle skull was discarded in ditch [5384] (fill 5385) on the western side of the same building.

Early and later Roman

The preponderance of cattle bones from the Roman deposits indicates these animals formed the principal stock in the local farming economy (and diet) at that period. Based on the evidence of the recovered horned skulls and the measurements taken on the post-cranial bone elements, the majority of the cattle were sturdy medium-horned animals. Although interpretation of the kill-off pattern indicated by analysis of the lower jawbones (Table 20, appendix 3) is not straightforward, there does appear to be evidence of the killing of a high proportion of calves and prime young animals (aged 1 to 3 years) for their meat, as well as the slaughtering of older cattle (mostly 5 to 8 year olds – plus a few elderly beasts) representing surplus/“worn out” breeding/milking cows and plough oxen. Utilisation of the slaughtered cattle as a source of hides is evidenced by knife (skinning) cut marks across the frontal bone of a skull (adult medium-horned ox) from ditch [5194] (fill 5195).

The presence of at least one foal points to the possibility of the local breeding of horses. Although the equid bones indicate that small pony-sized animals were being kept at the farmstead, there were also apparently larger sized/taller horses, with withers heights up to 14 hands (Table 22, appendix 3), whose greater stature would have proved a considerable advantage to the farmers when riding such animals during the rounding up and movement of the cattle and sheep (see discussion on this subject by Luff (1982, 136).

In the local livestock economy sheep were second to cattle in importance. Based on the kill-off pattern established for the mandibles (Table 20, appendix 3) flocks apparently were kept primarily as meat (and milk?) producers rather than for their wool, as evidenced by the high proportion of animals slaughtered as lambs and prime young sheep. The few older sheep probably represent the killing of “worn out” breeding/milking ewes and surplus rams. At least one female goat was kept, as evidenced by an isolated horn core from ditch [5120] (fill 5121). Perhaps this animal was also being kept for its milk and only consumed at the end of a productive life.

Relatively low numbers of pigs and very few domestic fowl appear to have been kept, and there is virtually no evidence for the exploitation of wild game or wildfowl, except for the isolated hare femur and a single ulna of a tufted duck, both elements from ditch [5080] (fill 5081). There is an antler of a mature (8th – 10th head) stag from ditch [5029] (fill 5032). However this red deer antler had been shed and does not derive from a hunted animal – and therefore is not evidence of the consumption of venison. It may have been collected with the intention of utilising it as a raw material in craft working. For whatever reason this objective was never realised and the antler eventually discarded still in an intact condition.

It is worth noting that the red deer antler associated with the Saxon sunken-featured building is recognised as the waste from antler working (see below). The paucity/virtual absence of deer bones noted for the phase under review appears to be a common feature of Roman farmstead sites and is in marked contrast to Roman villa sites throughout Britain where consumption of venison (and other game species) appears to have been prevalent.

With reference to the other species represented at the site, the food refuse, which was thrown into the ditches and gullies, seems to have attracted such scavengers as ravens. This was evidenced by the part remains of a wing (represented by a radius and ulna) from gully [5556] (fill 5557) and an isolated ulna from ditch [5132] (fill 5166). The small fauna recovered from the sieved samples Table 19 (Appendix 3) provide insight into the site environments. Water voles are found in well-vegetated habitats along the banks of rivers, ponds and ditches (Stoddart 1977, 199). Field voles exhibit a preference for rough ungrazed grassland as their habitat (Evans 1977, 189), while bank voles favour the thick cover provided by scrub or deciduous woodland (Flowerdew 1977, 178).

Saxon

Although the deposits associated with the Saxon sunken-featured building yielded comparatively small quantities of animal bones, considered overall the combined Saxon assemblage indicates a preponderance of sheep over cattle – the reverse of the later Roman situation, see Table 23 (Appendix 3). This increase in the numbers of sheep at the expense of cattle appears to be a widespread trend recorded on many Anglo-Saxon sites and is “evidence of the beginnings of the medieval reversion to a sheep economy” (King 1978, 227). Pigs however apparently continued to be of minor importance in the local livestock economy and in the deposits examined there is a noticeable absence of domestic fowl.

Antler-working activity at the site is indicated by the presence of a chopped red deer antler from pit [5214] (fill 5229).

The presence of common shrew in pit [5214] (fill 5215) suggests thick grassland and/or bushy scrub (the preferred natural habitats of this species - see Corbet (1977, 50) in the immediate vicinity of the Saxon sunken-featured building.

10 THE HUMAN BONE

10.1 The inhumation burial

Teressa Hawtin

Methodology

The skeleton of the single inhumation burial [5406], from the northern enclosure, has been examined for several criteria: state of preservation, demographic attributes including age and sex, normal metric and non-metric variation, and state of health. Methodologies used will be detailed in the relevant sections.

The work conformed to the relevant sections of the Institute of Field Archaeologists' *Guidelines to the Standards for Recording Human Remains* (Brickley & McKinley 2004) and English Heritage's *Human Bones from Archaeological Sites: Guidelines for Producing Assessment Documents and Analytical Reports* (Mays, Brickley & Dodwell 2004).

Skeletal completeness and preservation

Table 25 shows the completeness and levels of fragmentation and weathering of the skeleton. In this table the skeleton is split into sections: skull, thorax, abdomen, upper limb and lower limb. 'Thorax' includes the shoulder girdle as well as the ribs and cervical and thoracic vertebrae. 'Abdomen' includes the pelvic girdle and lumbar vertebrae. 'Upper limb' and 'lower limb' both consist of the relevant long bones, wrist/ankle bones and hand/foot bones. All figures are approximations.

All bones were assessed for preservation using the weathering stages given by Brickley & McKinley (2004: 15-17), and an average grade was assigned to the skeleton. In this system Grade 0 represents no perceptible damage and Grade 5+ represents extensive erosion.

Table 25: Level of completeness and fragmentation of the skeleton

Skeleton number	Skull %	Thorax %	Abdomen %	Upper limb %	Lower limb %	Additional bones	Preservation
1	85	50	40	R: 5 L: 60	R: 0 L: 10	None	Fragmentation: moderate – high. Weathering: mostly Grade 1-2, areas of cranium Grade 3-4

The burial has been truncated by later activities and the lower legs and a large proportion of the right-hand side of the body has been lost. The bone itself, although fragmented, is in good condition, with only parts of the cranium showing extensive surface erosion. No additional bones were identified and there was no evidence of cut marks or animal gnawing on the bones.

Demographic attributes

Age

The skeleton represents an adult. A fully erupted third molar was present in the mandible and all epiphyses present were fused, including the sternal end of the clavicle, indicating an age of over 26 years (Scheuer & Black 2000).

In adults age estimation is usually based on examinations of auricular surface morphology (Lovejoy *et al.* 1985; Buckberry & Chamberlain 2002), pubic symphysis morphology (Katz & Suchey 1986), cranial suture closure (Meindl & Lovejoy 1985), sternal rib end morphology (Schwartz 1995), or tooth wear (Miles 1962; Brothwell 1981), depending on which elements are available.

The fragmentation and partial nature of this skeleton hindered accurate age estimation. One partial auricular surface was present but there were no pubic symphyses or suitable sternal rib ends. Examination of the auricular surface and ectocranial suture closure, the severe dental wear and the low degree of joint degeneration suggest that this was a mid-older adult aged over 40 years.

Sex

The skeleton was also examined for sexually dimorphic characteristics. This analysis was based on sexually dimorphic features of the skull and pelvis, such as the greater sciatic notch, mastoid process, mandible shape and overall robusticity (Schwartz 1995; Phenice 1969; Krogman & İşcan 1986; Ferembach *et al.* 1980; Loth & Henneberg 1996).

This individual is considered to be a male, with very distinctive masculine characteristics seen in both the skull and the pelvis.

Health and disease

Dental pathologies

Dental pathologies, including ante-mortem tooth loss (AMTL), caries, abscesses and periodontal disease, were recorded. Calculus and hypoplasia were recorded according to the stages illustrated by Knußmann (1988) and dental attrition (wear) was recorded after the system developed by Murphy (1959, reprinted in Smith 1984).

Several caries were identified in both maxillary and mandibular teeth and four teeth had been lost ante-mortem (during life) from the mandible, possibly as a result of caries. No periodontal disease or abscesses were identified, although damage to the maxilla and mandible may have masked these conditions.

Slight linear enamel hypoplasia was visible on the mandibular incisors and canines. This condition is associated with periods of childhood stress or illness during the period of enamel formation, but the low grade of hypoplasia recorded here do not suggest any significant levels of disruption.

The maxillary teeth display an extreme amount of wear, which slopes lingually (inwards). Many of these teeth were worn down to the roots, with very little, if any, of the crowns remaining. The right canine and second premolar are chipped on their buccal (outer) surfaces, probably as a result of the extreme wear. The mandibular teeth were less severely affected, with attrition grades of between 4 and 7, compared to the maxillary attrition grades of 6 to 8.

The extreme dental attrition suggests a gritty, unrefined diet. All of the maxillary teeth were affected, so the wear is unlikely to be activity-related. The extreme attrition is also likely to have contributed to the formation of the dental caries identified (Roberts & Manchester 2005: 66).

Bone pathologies

The human remains were examined for any pathological or abnormal changes. The fragmentation and areas of surface erosion of the skeleton are likely to have hindered the identification of some of the pathological changes that could have been present.

Cribrra orbitalia, in the form of porotic lesions in the roofs of both orbits, was identified in this individual. This condition is thought to be associated with anaemia, although Roberts and Cox (2003: 140) state that, during the Roman period, "It is unlikely that this represents low iron intake as meat played a significant part of the diet for most at this time." Parasitic infection, disease and lead ingestion may have been contributing factors to anaemia (Roberts & Manchester 2005: 228; Roberts & Cox 2003:140).

Very little joint degeneration is visible in this individual. There is some spinal joint degeneration in the form of porosity and lipping of the bodies of the lower thoracic and lumbar vertebrae, and on the rib demifacets of the thoracic vertebrae. Schmorl's nodes are present in several thoracic and lumbar vertebrae. These are thought to indicate intervertebral disk hernias and are frequently found in individuals over 45 years of age (Aufderheide & Rodríguez-Martín 2003: 97).

One thoracic vertebra exhibited an unusual articulation facet at the base of the spinous process, indicating articulation with the vertebra above. The thoracic vertebrae also displayed posterior lipping of the inferior articulation processes on the right-hand side. These factors are suggestive of trauma to the spine, although the fragmentary nature of the vertebrae inhibits any further investigation.

Normal metric and non-metric variation

Stature estimation

Due to the fragmentary nature of the skeletal remains, metric analysis and stature estimation were not possible. Bones were reconstructed wherever practicable, but no complete long bones were present. No metric analysis of the reconstructed skull was attempted because of the increased likelihood of inaccuracy.

Non-metric traits

The skeleton was assessed for thirty cranial and thirty post-cranial non-metric traits, after the work of Berry and Berry (1967) and Finnegan (1978) respectively. Most congenital conditions generally cause little or no effect to the individual during life, however many of them are considered to be genetically inherited.

All of the non-metric traits identified were relatively common, such as the presence of cranial ossicles (islands of bone within the skull sutures), accessory foramina, exostosis in the trochanteric fossa of the femur and a double atlas facet.

Conclusions

The funerary archaeology and artefacts recovered in association with the burial suggest that it dates to the late Roman period, which is when extended inhumations orientated approximately west-east became popular. The skeleton had been affected by later disturbance, in the form of truncation of the lower legs. The skeleton was highly fragmented and areas of erosion of the surface of the bone may have masked some pathological conditions that had been present.

Few late Roman inhumations have been found in the Milton Keynes area. These include sites such as Bancroft villa in Wolverton, Wavendon Gate and a cemetery at the Roman town of *Magiovinium*, near Bow Brickhill. The inhumation examined here may have been part of a larger cemetery, and the shallow grave might suggest that other, shallower burials had been lost.

The individual was a mid-old adult male, probably aged above 40 years, although accurate age estimation was hindered by the lack of several characteristic elements. Various common dental pathologies were recorded, including caries, calculus and slight linear enamel hypoplasia, but none were unusual for the period. The maxillary teeth exhibit extreme attrition, suggesting a gritty, unrefined diet.

Very little joint degeneration is visible in this individual, being restricted to the lower spine in the form of porosity, lipping and Schmorl's nodes. Spinal trauma was suggested by an unusual articulation facet at the base of the spinous process of a thoracic vertebra and lipping of the articulation processes on the right-hand side of several thoracic vertebrae. However, the low degree of joint degeneration suggests that this individual was not involved in frequent heavy manual labour.

Bilateral cribra orbitalia, in the form of porotic lesions in the roofs of both orbits, was identified in this individual. This condition is thought to be associated with anaemia, although parasitic infection, disease and lead ingestion may have been contributing factors rather than low iron intake.

The absence of complete long bones within this assemblage meant that no stature estimation could be attempted. The few non-metric traits that were observed were all relatively common, such as cranial ossicles and foramina variations.

10.2 A human mandible

Philip L. Armitage

A fragment of the right side of a lower human jawbone, broken in antiquity, was recovered from fill (5204) of gully [5203] located in the northwest corner of the excavation. The jawbone contained the first and second teeth erupted and in wear. The third molar was lost in antiquity (post-mortem), but in life would have been just breaking through the roof of its crypt.

Age

Age of the individual based on attrition in the molar teeth. The dental wear patterns (classification system of Brothwell 1972:69, Mays, de la Rua & Molleson 1995) are recorded as follows:

Lower first molar = 3

Lower second molar = 1+

Based on Brothwells classification the individual was aged about 17-25 years at time of death.

11 THE ENVIRONMENTAL EVIDENCE

Val Fryer

In total sixty-two samples were taken from the site, in a continuous sequence. Thirteen of the samples were components of a column sample derived from the watering hole feature (reported by Mike Allen, below). Two of the processed samples provided no residues. The remaining forty seven residues are reported below.

11.1 The charred plant macrofossils and other remains

Introduction and method statement

The excavations revealed a comprehensive series of ditches, pits and other discrete features of probable late Iron Age to Roman date. Samples for the retrieval of the plant macrofossil assemblages were taken from across the excavated area from a range of miscellaneous features.

The samples were bulk floated by Northamptonshire Archaeology and the flots were collected in a 500 micron mesh sieve. The dried flots were scanned under a binocular microscope at magnifications up to x 16, and the plant macrofossils and other remains noted are listed on Tables 26, 27, 28, and 29 (Appendix 4). Nomenclature within the tables follows Stace (1997). All plant remains were charred. Thirteen samples contained only rare charcoal fragments and/or other materials and these are listed separately in Table 30 (Appendix 4). Modern contaminants including fibrous roots, straw/chaff, seeds and arthropods were present throughout and formed the major component of most assemblages.

Results

Plant macrofossils

Cereal grains and/or seeds of common weeds were present at a low density in 33 of the samples studied. In only one instance (sample 56) was a high density of material present. Preservation was generally very poor, with most of the grains being severely puffed and distorted, probably as a result of combustion at very high temperatures.

Oat (*Avena* sp.), barley (*Hordeum* sp.) and wheat (*Triticum* sp.) grains were recorded. Of the wheat grains, most were of an elongated 'drop-form' shape, typical of spelt (*T. spelta*) or emmer (*T. dicoccum*). Chaff was extremely rare, but single spelt wheat glume bases were recorded from six samples and a possible emmer glume base was noted within sample 15 (fill of pit/watering hole [5171]).

Weed seeds were very rare, most occurring as single specimens within an assemblage. All were of common segetal and grassland species including stinking mayweed (*Anthemis cotula*), brome (*Bromus* sp.), medick/clover/trefoil (*Medicago/Trifolium/Lotus* sp.), grasses (Poaceae), dock (*Rumex* sp.) and vetch/vetchling (*Vicia/Lathyrus* sp.). Onion couch (*Arrhenatherum* sp.) type tuber fragments were recorded from samples 9, 22 and 25.

Charcoal/charred wood fragments were noted at varying densities throughout. Other plant macrofossils were rare, but included a fragment of possible hazel (*Corylus avellana*) nutshell, a sedge (*Carex* sp.) fruit and indeterminate culm nodes, seeds and tuber fragments.

Mollusc shells

Although specific sieving for molluscan remains was not undertaken, shells were present at varying densities within most of the assemblages studied. However, although some specimens showed signs of surface pitting due to weathering, most retained good surface colouration and detail, and it is considered most likely that these are modern contaminants within the contexts from which the samples were taken. A single burnt shell was recorded from sample 12. Shells of terrestrial species, particularly those commonly found in areas of dry, open grassland, occurred most frequently, although a small number of marsh and freshwater obligate taxa were also recorded.

Other materials

The fragments of black porous and tarry material recorded within many of the assemblages are probable residues of the combustion of organic remains (including cereal grains) at very high temperatures. Other remains were very rare, but did include fragments of bone and burnt or fired clay. Small coal fragments were also recorded, but these are almost certainly intrusive within the contexts, possibly being derived from the recent agricultural practise of steam ploughing.

Discussion

Ditch fills (Table 26, 27 and 30, Appendix 4)

Twentyfour of the samples taken are from fills within the extensive series of field and enclosure ditches recorded during excavation. As is common with ditch fills which are unrelated to any immediate domestic activity, the assemblages are particularly sparse. Cereals and seeds are present, but at a very low density and, in most instances, even charcoal fragments are infrequent. There is no evidence of any primary deposition of material, and it would appear most likely that the macrofossils recorded are present as a constituent of scattered or wind-blown detritus, some or all of which was accidentally incorporated within the feature fills.

Pit/watering hole [5171] (Table 28, Appendix 4)

Two samples (9 and 15) are from fills within this large feature at the eastern edge of the excavated area. Sample 9 in particular contains a slightly higher than average density of material, which may possibly be derived from a small deposit of refuse within the pit.

Sample 56 (Table 29, appendix 4)

Of the forty seven samples assessed, sample 56 is the only example which appears to contain a definite assemblage of cereal processing/storage waste. Cereal grains are abundant, and segetal weed seeds are also common, particularly those of a similar size to the grains (for example brome, cornflower (*Centaurea* sp.), black bindweed (*Fallopia convolvulus*) and wild radish (*Raphanus raphanistrum*). This, and the virtual absence of cereal chaff, may indicate that the assemblage is derived from either waste from the final stage of processing (i.e. the hand picking of seeds not removed by winnowing) or from a small quantity of stored grain. However, it should be noted that the remains are very heavily burnt and combustion may have destroyed many of the more delicate macrofossils (i.e. chaff and smaller weed seeds) present within the original assemblage. The abundance of stinking mayweed seeds probably indicates that some cereals were being grown on heavy clay soils. This is commonly seen within assemblages of Roman date where clay land areas were being newly cultivated as a result of the advent of heavier and more technically advanced ploughs.

Other features (Tables 28, 29 and 30, Appendix 4)

Plant macrofossils, including charcoal fragments, were rare within most of the other assemblages, and there is insufficient material for accurate interpretation. Much of the material recorded is probably derived from scattered and/or wind-blown detritus of unknown origin.

Conclusions

In summary, plant macrofossils are rare within the majority of assemblages, with most probably being derived from a low density of scattered waste. This paucity of material may indicate that the excavated features are related to pastoral rather than settlement activity. Although occasional small deposits of domestic/agricultural waste do appear to be present, it is considered most likely that these were dumped in passing, and are not indicative of activities which were occurring in the near vicinity.

Only one assemblage (sample 56) contains sufficient material for quantification. As analysis of a single sample in isolation would contribute little to the overall interpretation of the site and its component features, no further work is recommended.

11.2 Mollusca

Michael J. Allen

Soils in the Ouse valley are not renowned for their preservation of snails, but snails were preserved at, for instance, the Early Bronze Age barrow on calcareous solifluction deposits at Warren Farm, Milton Keynes (Evans 1974).

A series of thirteen bulk samples of *c* 2kg was taken through Romano-British watering hole [5171] by the excavators. Samples of 1500g were processed for land snails by standard methods (Evans 1972), with flots and residues retained on 0.5mm aperture meshes. Shells were extracted and identified; the results are presented in Table 31 where nomenclature follows Kerney (1999). The residue fractions were weighed (archive) and together with the context descriptions provided by the excavators, augmented by laboratory sediment description, provide some information on the nature of the infilling.

The aims were to attempt to: characterise the local environment, changes in land-use and assess the nature of local ground water conditions and the presence of flooding from the River Ouse, and finally to help confirm or refute the interpretation of this feature as a well or watering hole.

The snail assemblages

Shell numbers were low (Table 30), but assemblages were predominately of open country species with a few aquatic shells. Nevertheless the depauperate snail assemblages provide the potential to make comment on the general, rather than specific, character and nature of the environment of the feature and of that around the well. They also provide the potential to identify *major* changes in land-use of the Ouse valley environment during the duration of infilling. All interpretations are general and not detailed and are presented with caution in view of the small assemblages.

Table 31: Quantification of mollusca

Context	Sample	Depth	Description (from sample)	Interpretation
5292	36	0.18m	Olive brown (2.5Y 4/4) silt loam, 0.1 fine macropores, massive small moderate blocky sub angular structure – a shallow furrow cut through 5172	
5172	37	0.18-0.40m	Dark greyish brown (10YR 4/2), silt loam, 0.1% fine macropores, weak indistinct gley of yellowish brown (10YR 6/6), moderate structure Upper fill of well (4th century)	Base of soil formed in upper fill of well
	38	0.40-0.50m		
5207	39	0.50-0.60m	Very dark greyish brown (10YR 3/2) firm silt loam - Described as cassy (mid to later 3rd century)	Infill
	40	0.60-0.80m		
	41	0.80-1.0m	Dark greyish brown to greyish brown (10-YR 4/2 – 5/2) silt loam with indistinct medium brownish yellow (10YR 6/6) gley - Described as cassy (mid to later 3rd century)	
	42	1.0m-1.2m	Very dark greyish brown (10YR 3/2) firm silt loam - Described as cassy (mid to later 3rd century)	
5207/ 5216	43	1.2-1.3m	Olive brown (2.5Y 4/4) silt loam, with indistinct mottles of olive yellow (2.5Y 6/6)	Fluctuating water tables and possible cess
5216a	44	1.3-1.4m	Olive brown (2.5Y 4/4) firm silt loam, with indistinct mottles of olive yellow (2.5Y 6/6)	
	45	1.4-1.6cm		
	46	1.6-1.8m	Moist greyish brown (10YR 5/2) silty <u>clay</u> with fine distinct mottles of strong brown (7.5YR 5/6) - Bottom fill of well	
5216b	47	1.8-2.0m	Most (light) grey (10YR 6/1) clay with 50% clear strong brown (7.5YR 5/6) mottled veins	Deposits settled in water
	48	2.0m-2.18m	Moist grey (10YR 6/1) clay with 75% clear strong brown (7.5YR 5/6) mottled veins - Bottom fill of well ?weathered natural	

[Note descriptions in italics are contextual summary provided by the excavators]

Although only 69 shells were recovered from the 13 samples, no shade-loving species were present. The entire assemblage (*Pupilla muscorum*, *Vertigo pygmaea*, *Vallonia costata*, *V. excentrica* and *Trichia hispida*) is, not surprisingly, typical of open country environments, and this is the environment into which the feature was cut and subsequently infilled. With the exception of the amphibious species *Lymnaea truncatula* that occurs in two samples, there are no freshwater or aquatic species present. This does not refute the interpretation of the feature holding water, just that there were no suitable local aquatic habitats from which snails could migrate. The gleying and sorted, fine-grained sedimentary nature of the fills certainly indicate deposition and settling in water, and of fluctuating groundwater tables. The presence of water is also confirmed

by a number of ostracod valves recorded, especially in the lower fills (Appendix 1, Table 30). Thus, the snail assemblages tell more of the local environment surrounding the well than that of the microhabitats within it. The lack of any shade-loving species which might inhabit and dwell in the feature, as seen at the Bronze Age wells of Wilsford Shaft, Wiltshire (Bell 1989), and medieval well at Lewes Priory, East Sussex (Allen 1997), suggests a long and established very open landscape. Although shell numbers are low, the lack of any other aquatic or amphibious species (e.g. Planorbids) is surprising and we can tentatively indicate dry grassland rather than a floodplain prone to seasonal flooding. The presence of the amphibious species (cf. Robinson 1988) *Lymnaea truncatula* may infer that such damper habitats existed not far away.

The final comment is that the furrow through the top of the infilled well contained *Vallonia excentrica*, the more xerophile of the genus, and we may tentatively suggest largely dry open grassland or arable conditions in this later phase.

Conclusions

The well was established, and existed, in a dryish open environment, probably grassland. The area was probably not subject to regular seasonal flooding, and there was little, or no, permanent surface water. The watering hole did contain water, as indicated by the fine sorted deposits and gleying. Permanent open water was only obtained by digging into the shallow, fluctuating ground watertable that was less than 2.5m below the Romano-British ground surface.

12 ANGLO-SAXON POTTERY

Paul Blinkhorn

Three sherds of early/middle (c AD450 – 850) Anglo-Saxon hand-built pottery were noted in context 5229. They comprised a rimsherd and two bodysherds, all probably from the same vessel, with a total weight of 45g.

The vessel was originally a small jar with an upright and slightly everted rim profile. The rim diameter was around 200mm, with the surviving rimsherd representing around 5% of the complete vessel.

The fabric is brown with black surfaces, with the outer surface being lightly and evenly burnished. It is tempered with moderate calcite-cemented sandstone lumps up to 3mm, with most inclusions being 'free' quartz grains of around 1mm diameter. There are rare organic voids up to 20mm, which appear to be the remains of burnt-out fine grasses. The clay is also slightly micaceous. It is a fabric which is typical of Anglo-Saxon sites in the area, and can be paralleled at a number of them, such as Pennyland in Milton Keynes (Blinkhorn 1993, 246-7). It appears to have no chronological significance other than to date the vessels to the early/middle Saxon period.

Undecorated, hand-built Anglo-Saxon pottery is impossible to date other than to within the broad early – middle Anglo-Saxon period. Generally, the Anglo-Saxons ceased decorating pottery in the early part of the 7th century (Myres 1977), but such wares were rare even when they were used. Usually, decorated wares only comprise around 3% of the pottery from settlement sites of the 5th and 6th century, such as Mucking in Essex (Hamerow 1993). Thus a small assemblage of plain pottery cannot be dated to the 7th century or later.

Finds of small assemblages of Anglo-Saxon pottery at Romano-British sites are becoming increasingly commonplace in the region, although in most cases it is impossible to say if this represents continuity or re-occupation. For example, recent excavations at the Whitehall villa (Blinkhorn, forthcoming) produced a small quantity of undecorated Anglo-Saxon pottery,

probably representing no more than about six vessels, and a similarly small assemblage of such material has been seen by the author from the excavations at Piddington villa. One site which has produced strong evidence of continuity is the Romano-British Temple-Mausoleum complex at Bancroft in Milton Keynes. Here, an assemblage of 192 sherds of Anglo-Saxon pottery occurred, including decorated sherds which are unlikely to be much later than the mid-5th century (Blinkhorn 1994, 513), and the Anglo-Saxon occupation appears to have ended before the close of the 5th century.

Thus, it is entirely possible that the pottery from this site may represent continuity of occupation into the 5th century, but it is equally likely that it may be evidence of much later activity.

13 MEDIEVAL AND POST-MEDIEVAL FINDS

Tora Hylton and Ian Meadows

There are a small number of medieval and post-medieval finds which were either intrusive within Roman deposits or retrieved from medieval furrows/topsoil. Finds of 14th and 15th century date include; part of a cast purse frame, not dissimilar to Museum of London Type A2 (Ward-Perkins 1940, fig 50) with a terminal knob and ornamented with a double-cross motif and concentric groove motif; a cast buckle-pin with ridged grip set close to the loop (cf. Egan 1991, fig 75, 541), a two-piece tongue-shaped strap-end with side-strips and secured by a single centrally placed rivet (Ibid, 89, 634), and finally a fragment of a rowle spur (Plate 6). Finds of post-medieval date include a Charles I rose farthing, a Georgian shoe buckle, a copper alloy clock key and fragments of window and fragments of vessel glass.

14 DISCUSSION

14.1 The late Iron Age/early Roman settlement

The absence of any earlier material indicates that the origin of the Iron Age settlement lay in the Iron Age to Roman transitional period, the early decades of the 1st century AD. It appears to have begun at a low level of activity, with two possible superimposed roundhouses and a few lengths of gully and a sparse scatter of pits. However, it is evident that the northern enclosure of the subsequent Roman settlement did extend to the north of the excavated area, and the main focus of occupation in the later use of this enclosure probably lay beyond the excavated area. It is therefore possible that a similar situation held in the late Iron Age, with the excavated structures perhaps lying on the southern margin of a more extensive settlement.

It is possible that the near east-west linear boundary ditch was contemporary in origin with the late Iron Age settlement, and formed a primary land division with a settlement set immediately alongside it. The transverse ditches marked the setting out of a series of plots or fields on either side of this boundary. The substantial ditch to the west of the roundhouses may suggest that the late Iron Age settlement was enclosed, with this providing the origin for the subsequent Roman enclosure of much the same area. The related pottery spans the middle decades of the 1st century AD (Ceramic Phase 1: AD25-60). A ditch to the south of the east-west boundary turned to run parallel with the boundary ditch, 15m to the south. This might suggest that at an early stage a track or driveway was established to the immediate south of the east-west boundary ditch.

The environmental samples from the ditches of the field system contained material invariably from open country grass species, which implies that the fields were pasture for the grazing of animal stock.

Nearby contemporary settlements include the site of Stanton Low (Woodfield, & Johnson 1989), which lay 1.5km to the west, in the Great Ouse valley. A small middle Iron Age settlement, excavated in Gayhurst Quarry (Chapman forthcoming b), lay 1.5km to the north, on the southern bank of the Great Ouse, and the presence of an early Roman cremation suggested that later settlement had lain on the slopes to the south, only some 1km to the north. The settlement at Newport Pagnell can therefore be seen as one of many dispersed farmsteads that lay on the slopes overlooking the Great Ouse, with the light soils and the access to the river margins providing favourable conditions for both pastoral and arable farming. The development of similar enclosures was seen at Monkston Park, exploiting the Ouzel floodplain, suggesting the aim was to maximise productivity from the land available, for both crops and stock (Bull and Davis 2006).

14.2 The Roman settlement

The late 1st to early 2nd centuries AD

By the late 1st century AD the settlement had been substantially reorganised, to create a Romanised farmstead. A new northern enclosure was formed, perhaps initially retaining the existing western boundary, but soon enlarged by a westward relocation of the enclosure ditch, to form a square of rectangular enclosure, which extended beyond the excavated area. A series of ditches projecting from the outer boundaries divided the interior into functional areas, with further sub-divisions provided by detached lengths of gully. A sharply rectilinear gully in the centre of the enclosure may have surrounded a rectangular house for which no other traces survived, although a concentration of domestic finds in the northern part of the enclosure may suggest that the domestic focus lay beyond the excavated area.

The presence of substantial quantities of butchered cattle bone indicates that a major part of the economy of the settlement was based on the rearing and the processing for market of cattle, although smaller quantities of sheep were also present, along with some horse.

The late 2nd to 3rd centuries AD

By the late 2nd century, a second enclosure has been added to the settlement. This was of similar size to the northern enclosure and appears to have been set to the immediate south of the track or driveway. Internally the enclosure was similarly sub-divided and a timber building may have stood in the southern part of the enclosure.

The middle/late 3rd to 4th centuries AD

During the middle to late 3rd century both the enclosures were refurbished, displaying the same, if not greater level of activity, with the cattle bone assemblages still suggesting that the rearing of cattle and the processing of the animals through slaughter and skinning was still a major aspect of the settlement economy. The large animal watering hole was a new feature in the northern enclosure. The centre of domestic occupation was probably still located to the north. An inhumation burial, was also located to the northern part of the enclosure, presumably on the periphery of the occupation area.

The southern enclosure also displayed evidence of occupation and related activities. Charred cereal grains and fired clay probably from kilns or ovens came from the north-west corner of the enclosure. From the fills at the north-eastern corner of this enclosure there were fragments of both a crucible and an investment mould for the casting of bronze fittings, and a fragment of lead waste, indicating that metal working was being undertaken in this part of the site. The impressions on the inner surface of the mould would be consistent with either a brooch or of the range of horse harness fittings, both of which were a common feature of bronze casting at this time.

The late 4th century AD

In the late 4th century both the northern and southern enclosure were re-cut, but on a much reduced scale, with only a half of each enclosure being retained. The settlement economy still appears to have been based on animal rearing.

These reduced enclosures were the final stage of Roman activity, with the decline and abandonment occurring towards the end of the 4th century or possibly even into the early 5th century. Although there was no clear and specific evidence by the pottery, continuance up to this period should not be excluded as a possibility.

Landscape and environment

From the environmental evidence provided by charred seeds and snails, the local landscape seems to have been largely open grassland through the Iron Age and Roman periods. This would be suitable for stock animals and the animal bone evidence has indicated that there was intensive cattle rearing through the Roman period. Much of the bone assemblage came from calves and prime young animals slaughtered for their meat, with the cut marks indicating that primary and secondary butchering/skinning was being undertaken, while a proportion of the bone would have been discarded kitchen and table debris from tertiary butchering waste/food scraps. The number of dog-gnawed animal bones recovered, especially from the watering hole deposits, attests to the processing taking place within the settlement. The recovered knives and whetstones were probably tools of the butchery. An iron awl for leather working was also found that shows that animal hides may have been processed on site. Cattle may have also been kept for dairy products.

The remains of a number of horse bone, including foals, suggests possible local horse breeding as an additional agricultural industry for the settlement. Sheep flocks were of secondary importance, and were apparently kept primarily as meat and possibly milk producers rather than for their wool, as evidenced by the high proportion of animals slaughtered as lambs and prime young sheep.

Settlement

Whether these enclosures could be described as a farmstead or whether they were part of a larger organised centre, such as a villa estate is unclear. The refurbishments of the enclosures were restricted to the areas where they were originally sited, suggesting the land was under strict organisational control and ownership. Similar development of enclosures seen at Monkston Park (Bull and Davis 2006)

The growth and development of the site may correspond to the growth of the local urban markets such as the Roman town of *Lactodorum* (Towcester), which was a well established urban centre by the end of the 1st century AD and continued at least to the end of the 4th century (RCHM 1982). The Roman town of Towcester lay no more than 20km north, along Watling Street. Similarly, the Roman town of *Magiovinium* (Dropshort Farm), lay on Watling Street approximately 15km to the south.

There is little to characterise the nature of the buildings that may have once existed on the site, but there are a small number of iron objects which may have been used as part of a structural fittings, these include a single holdfast and 23 nails. These iron fittings and the lack of other construction material suggest, the possible buildings were timber framed, but probably of non-domestic use.

A moderate quantity of ceramic building material was recovered from the enclosures, but much of the assemblage is fragmentary and displays signs of abrasion, indicating that it had probably been lying around for sometime prior to deposition. The bulk of the material comprises small identifiable fragments which included roofing tile, hypocaust tile and structural tile, that correspond with those recorded at the nearby Stanton Low Roman Villa. The occasional window glass fragment was also retrieved.

Domestic material

The coins retrieved from the site date were mainly from the late 3rd to the 4th century AD, and relate to the later phases of enclosure development (Phase 4 & 5). The coin distribution in the northern enclosure corresponds to the concentration of finds in the northern part of the site, again indicating that the main centre of activity lay further to the north. In the southern enclosure the coins appear to be concentrated in the north-east corner. Across the site there were a few personal finds suggesting domestic activity, including two bracelets, two finger rings, one of which may be a child's. A possible mixing-palette used to mix cosmetics or medicines was recovered from the watering hole. Other domestic items worthy of note include a fragment of a spoon, a swivel and loop, which had many uses, but in general they are assumed to have been used to suspend kettles and cauldron. However, the range of pottery, with fineware present in only small numbers, and of other finds clearly indicates that this settlement was of quite a low status, and clearly a minor settlement in the local hierarchy, which includes a number of well appointed villa estates, one of which this settlement may have been directly dependent upon.

14.3 Saxon and medieval

Although only a single Saxon sunken featured building was recovered on the site close to its southern margin, it is not inconceivable that other contemporary structures might have lain to the south, beyond the excavated area and possibly destroyed during the construction works of the Rocla pipeworks. It adds to the corpus of early Saxon settlement evidence in the general Milton Keynes area, in particular to the south and west of the site at Bancroft Villa (Williams 1993), Fenny Lodge (Ford & Taylor *et al* 2001) and Wolverton Turn (TVAS 1994), where a number of possible sunken buildings have been recovered during excavation in association with other post built structures. The subsequent ridge and furrow ridge cultivation system located throughout the area of excavation probably formed part of the open field system at the edge of the town of Newport Pagnell.

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APPENDICES

APPENDIX 1. PREHISTORIC AND ROMAN POTTERY

Table 3: Summary of fabrics by period.

Description	MK fabric	NRFC	Ct.	%Ct.	Wt.(g)	%Wt	Rim EVEs	%EVEs
Late Prehistoric (Late Bronze Age to Early/Middle Iron Age)								
Flint tempered	-	-	1	100	4	100	-	-
Late Iron Age or Early Roman (1st century AD)								
Grog	46	-	183	57.4	2723	57.5	1.13	52.1
Grog with shell	45	-	1	0.3	12	0.3	0.12	5.5
Grog with quartz	46qr	-	6	1.9	56	1.2	-	-
Coarse shell	1.1	-	128	40.1	1940	41.0	0.92	42.4
Sub-total			319	-	4735		2.17	
Roman								
Misc. shell-tempered	1	-	105	5.31	2065	5.26	.89	3.32
Harrold Shell-tempered	1.2	HAR SH	756	38.12	14190	36.17	10.07	37.55
Pink grogged	2	PNK GT	313	15.78	9270	23.63	2.45	9.13
Local grey sandy	9	-	322	16.23	5222	13.31	4.17	15.53
Local grey sandy (red core)	9	-	31	1.56	533	1.35	.81	3.02
Local grey sandy (red margins)	9	-	29	1.46	544	1.39	.47	1.75
Local black sandy	3	-	58	2.92	870	2.2	.88	3.28
Lower Nene grey	12	-	1	0.05	8	0.02	0	
Upper Nene grey	14	-	56	2.82	671	1.71	.51	1.9
Dorset BB1	8	DOR BB1	2	0.10	16	0.04	0	0
'Self-coloured', burnished grey	53	-	8	0.40	144	0.37	.27	1.01
Misc. oxidised	41	-	40	2.02	391	1.0	.74	2.77
Misc. oxidised (painted)	41	-	1	0.05	20	0.05	0	
Lower Nene valley CC	6	LNV CC	74	3.73	1274	3.25	1.08	4.02
Lower Nene valley CC (orange fabric)	6	LNV CC	10	0.50	134	0.34	1.06	3.95
Lower Nene valley white/cream	18b	LNV WH	6	0.30	82	0.21	.15	0.58
Lower Nene valley white (mortaria)	4f	LNV WH	2	0.10	68	0.17	.04	0.15
Oxford whiteware	18c	OXF WH	16	0.81	542	1.38	.38	1.41
Oxford whiteware (mortaria)	4a	OXF WH	6	0.30	1124	4.37	.32	1.19
Oxfordshire red CC	24, 4b	OXF RS	113	5.70	1507	3.8	1.78	6.63
Central Gaulish black-slipped	23c	CNG BS	1	0.05	1	0.01	0	
Samian (unsourced)	20	-	3	0.15	16	0.04	.06	0.22
Samian (South Gaulish)	20	LGF SA	1	0.05	4	0.01	0	
Samian (Central Gaulish)	20	LEZ SA	4	0.20	64	0.16	.19	0.70
D5 Hadham ox	37	HAD OX	11	0.55	80	0.20	.24	0.89
Baetican amphora	22	BAT AM	1	0.05	188	0.48	0	
?Upper Nene white	17	-	3	0.15	16	0.04	0	
Oxford oxidised	35	-	1	0.05	40	0.10	.08	0.29
Oxford white-slipped	35, 4ba	OXF WS	5	0.25	121	0.31	.10	0.37
Crucible fabric	-	-	4	0.20	22	0.06	.10	0.37
Sub-total			1983		39227		26.84	
Total			2303		43966			

Newport Pagnell, Milton Keynes

Table 4: Quantification for selected pottery groups. (Grouped) fabrics, Ceramic Phase 1 and 3.

Fabric(s)	Ditch 5018 (CP1)				Waterhole 5171 (CP3)			
	Ct.	%Ct.	EVEs	%EVEs	Ct.	%Ct.	EVEs	%EVEs
46	59	45.0	.64	52.9	3	2.5	-	
1	72	55.0	.57	47.1	94	79.0	1.07	67.7
3, 9					4	3.4	.05	3.2
6					1	0.8	.06	3.8
35					1	0.8	.08	5.1
18c					9	7.6	.32	20.3
2					7	5.9	-	-
Total	131	-	1.21	-	119	-	1.58	-

Table 5: Quantification for selected pottery groups. (Grouped) fabrics, Ceramic Phase 4.

Fabric(s)	Ditch 5124				Ditch 5132				Ditch 5156				Spread 5187				Ditch 5236			
	Ct.	%Ct.	EVEs	%EVEs	Ct.	%Ct.	EVEs	%EVEs	Ct.	%Ct.	EVEs	%EVEs	Ct.	%Ct.	EVEs	%EVEs	Ct.	%Ct.	EVEs	%EVEs
1	39	43.8	.25	46.3	26	33.8	.33	28.0	35	37.6	.45	41.3	19	25	.35	36.8	211	94.6	3.1	97.2
2	10	11.2	0		11	14.3	.02	1.7	26	27.9	.32	29.4	10	13.2	.05	5.3	2	0.9		
3, 9	16	20.0	.08	14.8	24	31.2	.16	13.6	12	12.9	.16	14.7	11	14.5	.12	12.6	5	3.2	.09	2.8
12													1	1.3						
41	9	10.1											4	5.3			1	0.4		
53	2	2.2																		
37	5	5.6	.04	7.4	1	1.3	.18	15.2					2	2.6						
6, 18	2	2.2	.17	31.5	5	6.5	.20	16.9	6	6.4	.06	5.5	11	14.5	.15	15.8				
24, 4b	6	6.7			5	6.5	.25	21.2	14	15.1	.10	9.2	9	11.8	.24	25.3	4	1.8		
4f					2	2.6	.04	3.4												
4					1	1.3														
14					2	2.6							6	7.9						
20													2	2.6	.07	7.4				
22													1	1.3						
	89		0.54		77		1.18		93		1.09		76		0.98		223		3.19	

APPENDIX 2 ROMAN COINS

Table 8: Roman coin catalogue

Phase	Feature	Identification	Date	Context
Phase 3	Enclosure 3	AE Antoninianus of Gallienus (SF53)	253-68 AD	Enclosure ditch 2016
		AE3 FEL TEMP REPARATIO phoenix issue of Constantius II (SF 52)	346-50 AD	
		AE3 of Valentinian I SECURITAS REIPUBLICAE (SF 62)	367-75 AD	
		House of Constantine - kneeling captive type (SF 14)	mid 4th C	Enclosure ditch 5065
		AE3 Valentinian I GLORIA ROMANORUM (SF53)	365-7 AD	Ditch 5175
		AE3 of Tetricus I (SF 55)	270-3 AD	Gully 5428
		AE3 illegible (SF 82)	3rd/4th C	Waterhole 5172
		AE3 mis-struck flan of Valens The obverse legend is of the broken form VALEN – S which usually denotes a coin from the earlier part of this reign. Reverse is of SECURITAS REIPUBLICAE type (SF 18)	365-78 AD	
		AE4 House of Constantine based on a FEL TEMP REPARATIO prototype (SF 84)	4th C	
		AE4 barbarous copy of a VOT MVLT issue (SF 90)	4th C	
	AE4 House of Constantine – illegible (SF 22).	4th C	Enclosure ditch 5132	
	Enclosure 4	AE3 Antoninianus, probably a barbarous Gallienus coin (SF40)		253-68 AD
		AE centenionalis of Magnentius Obv: IMPCAEMAGN ENTIVSAVG Rev: Emperor holding victoriola and standard the latter bearing a chi rho. Mintmark: Trier mint (LRBC pt2 50). (SF 63)		350-51 AD
		AE2 Magnentius SALUS DD NN AUG ET CAES. Mintmark: TRS Trier. (SF 69)		351-3 AD
AE3 of Gratian obv DN GRATIANVS AVGG AVG rev GLORIA NO-VI SAECULI Emperor holding Labarum and resting left hand on shield. Mintmark: Arles (SF 49)		367-75 AD		
AE3 irregular oval flan, copy of GLORIA ROMANORUM. Rev: third quarter legend. Mintmark: illegible. (SF 50)		4th C		
AE3 coin of Valens SECURITAS REIPUBLICAE. Mintmark: Arles. (SF 47)		367-375 AD		Enclosure ditch 5210
A barbarous radiate on an irregular flan. Prototype uncertain. (SF 29)		c 275 AD.		Ditch 5432
AE3 radiate issue in very poor and illegible condition (SF 58)		3rd/4th C		
Phase 4	Enclosure 5	AE Follis Constantine I helmeted on obv. Rev: Illegible. (SF 28)	310-313 AD	Enclosure ditch 1722
		AE4 copy of a House of Constantine Falling horseman type Fel Temp Reparatio (SF 11)	350-60 ad	Enclosure ditch 5144
		Probably part of an AE3/4, illegible (SF 10)	c. 4th C	Ditch 5142
	Enclosure 6	Barbarous radiate illegible oval flan. (SF 25)	c.275 AD	Pit 5057
Carausius AE Antoninianus PROVID AVG Rev: SP in field and C in exergue. (SF 26)	287-293 AD			
Unstratified		A possible barbarous Antoninianus of Probus Both faces very pitted and corroded, bust faces left. (SF 12)	276-82 AD	Furrows
		AE3 Valens SECURITAS REIPUBLICAE.	264-78 AD	

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	Mintmark: Arles. (SF 61)		Topsoil
	AE 3 House of Constantine GLORIA EXERCITUS 2 soldiers/2 standards type (SF 46)	pre 335 AD	
	AE3 of Valens GLORIA ROMANORUM. Mintmark: Arles. (SF54)	367-78 AD	
	AE3 flan - Illegible (SF 59)	4th C	
	AE Antoninianus of Claudius II Gothicus - possibly a barbarous copy. Reverse PAX AVG, Pax standing. (SF 19)	268-270 AD	
	AE4 coin of Constantius. Reverse Victories facing holding wreaths. VICTORIAEDDAVGGQNN issue Mintmark: Trier mintmark TRS? (SF 48)	341-46 AD	
	Radiate illegible AE3 flan (SF 23)	second half 3rd C	

APPENDIX 3. ANIMAL BONE

Table 12 Summary counts of the identified bone elements/fragments (NISP) by species and period. Hand-collected bone & sieved samples combined.

Species/Phase	Iron ditches	Early Roman ditches	Later Roman ditches	Early Roman gullies	Later Roman gullies	Later Roman pits	Saxon structure	Totals
Mammals:								
cattle	11	30	564	1	26	75	34	741
sheep	1	3	187		8	22	61	282
goat			1					1
pig			25		1	1	1	28
horse			54		3	10		67
dog			3		1			4
red deer			1				1	2
hare			1					1
water vole						4		4
bank vole			1					1
field vole						2		2
Common shrew							1	1
Birds:								
domestic fowl			4			1		5
tufted duck			1					1
raven			1		2			3
Amphibian:								
common frog			4			1		5
TOTALS	12	33	847	1	41	116	98	1148

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Table 13: Summary counts of the unidentified bone fragments. Hand-collected bone & sieved samples combined.

Category/Phase	Iron Age ditches	Early Roman ditches	Later Roman ditches	Early Roman gullies	Later Roman gullies	Later Roman pits	Saxon structure	Totals
LAR long bone shaft frags.		4	110		5	34	2	155
LAR			128		1	1	3	133
SAR long bone shaft frags	1		56		8	7	28	100
SAR			2		1		0	3
Mammal bone frags			192		7	32	12	243
"Scrappy" mammal frags			122		46	91	75	334
Total mammals	1	4	610	0	68	165	120	968
unident. Bird bone frags	0	0	3	0	0	0	0	3

Key: LAR = large artiodactyl (cattle sized)

SAR = small artiodactyl (sheep/pig sized)

Table 14: Dog-gnawed bones by species and period.

Period	Species				Totals
	horse	cattle	sheep	pig	
Iron Age ditches					0
Early Roman					
Ditches		1			1
Later Roman					
Ditches	1	31	11	2	45
Gullies	1	4			5
Pits	1	12	1		14
Saxon structure		2			2
Totals	3	50	12	2	67

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Table 15: Anatomical distributions of the cattle bones by period and feature.

Element/Phase	Iron Age ditches	Early Roman ditches	Later Roman ditches	Early Roman gullies	Later Roman gullies	Later Roman pits	Saxon structure	Totals
horn core			12					12
horncore/piece skull			5					5
skull	1	4	23			3		31
premaxilla			1					1
maxilla			7			1		8
mandible		8	58		4	7		77
incisor			2					2
upper cheektooth			31			1	1	33
lower cheektooth			11					11
canine								
tooth								
hyoid								
vertebra			16		1		16	33
cervical vert.			18			5		23
thoracic vert.		1	30		3	1		35
lumbar vert.			30		2	2		34
caudal vert.			4					4
sacrum		2	3			1		6
rib		2	128		3	12	9	154
sternum							1	1
scapula		3	24		3	7		37
humerus		2	22		1	3		28
radius		1	14		1	5	2	23
ulna		1	5		1	4	1	12
metacarpus	1		18		2	6	1	28
innominate		1	23			3	1	28
femur			20			3		23
tibia		1	19			4		24
fibula								
patella								
calcaneum			4			1		5
astragalus		1	6		1	1		9
metatarsus		2	20	1	1	2		26
metapodial								
phalanx I	2	1	6		1	2	2	14
phalanx II	2		1					3
phalanx III	1		1		2			4
carpal/tarsal bones			2			1		3
sesamoid	4							4
TOTALS	11	30	564	1	26	75	34	741

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Table 16: Anatomical distributions of the sheep bones by period and feature.

Element/Phase	Iron Age ditches	Early Roman ditches	Later Roman ditches	Early Roman gullies	Later Roman gullies	Later Roman pits	Saxon structure	Totals
horn core		1	1					2
horncore/piece skull			1					1
skull			3			1		4
premaxilla			2					2
maxilla			5		1			6
mandible			37		1	2	3	43
incisor			1				1	2
upper cheektooth			6			3		9
lower cheektooth		1	12		1			14
canine								
tooth								
hyoid								
vertebra								
cervical vert.	1		9				4	14
thoracic vert.			2				9	11
lumbar vert.								
caudal vert.								
sacrum			1				1	2
rib			9			5	39	53
sternum							1	1
scapula			3			1	1	5
humerus			6					6
radius			4			1		5
ulna								
metacarpus			22			1	1	24
innominate			5		2			7
femur			2			1		3
tibia		1	11		3	3	1	19
fibula								
patella								
calcaneum								
astragalus								
metatarsus			26			1		27
metapodial								
phalanx I			12			3		15
phalanx II			4					4
phalanx III			1					1
carpal/tarsal bones			2					2
sesamoid								
TOTALS	1	3	187	0	8	22	61	282

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Table 17 Anatomical distributions of the pig bones by period and feature.

Element/Phase	Iron Age ditches	Early Roman ditches	Later Roman ditches	Early Roman gullies	Later Roman gullies	Later Roman pits	Saxon structure	Totals
skull			1					1
premaxilla								
maxilla			1					1
mandible			5		1			6
incisor			3					3
upper cheektooth								
lower cheektooth								
canine			1			1		2
tooth								
hyoid								
vertebra								
cervical vert.								
thoracic vert.								
lumbar vert.								
caudal vert.								
sacrum								
rib								
sternum								
scapula								
humerus			5				1	6
radius								
ulna			1					1
metacarpus								
innominate			2					2
femur			2					2
tibia			3					3
fibula								
patella								
calcaneum			1					1
astragalus								
metatarsus								
metapodial								
phalanx I								
phalanx II								
phalanx III								
carpal/tarsal bones								
seasamoid								
TOTALS	0	0	25	0	1	1	1	28

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Table 18: Anatomical distributions of the horse bones by period and feature.

Element/Phase	Iron Age ditches	Early Roman ditches	Later Roman ditches	Early Roman gullies	Later Roman gullies	Later Roman pits	Saxon structure	Totals
skull			2					2
premaxilla								
maxilla			2					2
mandible			3			1		4
incisor			4		1			5
upper cheektooth			6			1		7
lower cheektooth			3			3		6
canine								
tooth								
hyoid								
vertebra								
cervical vert.								
thoracic vert.								
lumbar vert.								
caudal vert.			1					1
sacrum			3					3
rib			1					1
sternum								
scapula			4					4
humerus			1					1
radius			5		1			6
ulna								
metacarpus			4			3		7
innominate			4					4
femur								
tibia			3		1			4
fibula								
patella								
calcaneum								
astragalus								
metatarsus			4			1		5
metapodial								
phalanx I			2			1		3
phalanx II			1					1
phalanx III								
carpal/tarsal bones			1					1
seasamoid								
TOTALS	0	0	54	0	3	10	0	67

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Table 19: Small mammal & amphibian bones from sieved samples.

Period	Species	Bone element(s)	Context	Sieved sample
	<i>Small mammals</i>			
Later Roman				
Ditch	bank vole	1 femur	5202	<14>
Pit	water vole	1 incisor (cf water vole)	5172	<9>
Pit	water vole	1 mandible, 1 femur & 1 tibia	5405	<53>
Pit	field vole	1 mandible & 1 humerus	5172	<9>
Saxon				
Structure	common shrew	1 mandible	5215	<26>
	<i>Amphibian:</i>			
Later Roman				
Ditch	frog	1 femur & 1 metapodial bone	5195	<13>
Ditch	frog	1 humerus	5044	<19>
Ditch	frog	1 humerus	5028	<21>
Later Roman				
Pit	frog	1 radio-ulna	5172	<9>

Table 20: Ageing of the mandibles in the main domesticates by species and period.

CATTLE (age categories referenced in Bond & O'Connor 1999:346)

Cattle	N	J	I	SA1	SA2	A1	A2	A3	E
Iron Age				no data					
Early Roman			1			1		1	
Later Roman		1	4	7	5	4	1	6	3
Saxon				no data					

Key to categories: N = neonatal, J = juvenile, I = immature, SA = sub adult, A = adult, E = elderly

SHEEP (age categories after Payne 1973)

Sheep	A	B	C	D	E	F	G	H	I
Iron Age				no data					
Early Roman							1		
Later Roman		1	13	8	4	2	3		2

Key to categories: A = 0 - 2 months, B = 2 - 6 months, C = 6 - 12 months, D = 1 - 2 years, E = 2 - 3 years, F = 3 - 4 years, G = 4 - 6 years, H = 6 - 8 years, I = 8 - 10 years

PIG (age categories referenced in Bond & O'Connor 1999:351)

Pig	N	J	I1	I2	SA1	SA2	A1	A2	A3
Iron Age				no data					
Early Roman				no data					
Later Roman	1				1		1		
Saxon				no data					

Key to categories: N = neonatal, J = juvenile, I = immature, SA = sub adult, A = adult

Table 21: Sexing skeletal elements in the main domesticates by species and period.

CATTLE	male	castrate	female	
Horn cores				
Later Roman	2	4	0	
Innominate bone				
Later Roman	1	3	4	
SHEEP				
Horn cores				
Early Roman	1	0	0	
Later Roman	1	0	1	
Innominate bone				
Later Roman	0	0	2	
GOAT				
Horn core				
Later Roman	0	0	1	
PIG				
Lower canine (tusk)				
Later Roman	1	0	0	

Methods: cattle horn cores (Armitage & Clutton-Brock 1976), cattle innominate bones (Grigson 1982), sheep horn cores and innominate bones (Armitage 1977), pig canine teeth (Mayer & Brisbin 1988).

Table 22: Withers heights (in cm) in the main domesticates. Roman contexts.

Withers heights	N	Mean	Min.		Max.	SD
HORSE						
Later Roman	6	137.1	122.4		145.0	
CATTLE						
Early Roman	1			116.6		
Later Roman	17	116.0	104.8		129.8	6.83
SHEEP						
Later Roman	5	63.8	59.5		67.0	

Notes: Withers heights calculated from length in long bones. Methods: horse (Kiesewalter 1888), cattle (Fock 1966 & Matolcsi 1970), sheep (Teichert ed).

Table 23: Percentage frequencies of the main meat-yielding species, based on NISP.

Meat-yielding species	cattle	sheep	pig
Later Roman	73%	24%	3%
Saxon	35%	64%	1%

APPENDIX 4. CHARRED PLANT MACROFOSSILS AND OTHER REMAINS

Table 26: The plant macrofossils and other remains

Sample No.	1	2	3	4	13	16	18	19	20
Context No.	5145	5162	5164	5133	5195	5213	5100	5044	5027
Feature No.					5194	5212	5099	5043	5026
Cereals									
<i>Avena</i> sp. (awn frags.)									x
<i>Hordeum</i> sp. (grains)				xcf	x	x		xcf	
<i>Triticum</i> sp. (grains)	x		x	xcf	x	x	x		
(glume bases)				x	x	x			
<i>T. spelta</i> L. (glume bases)					x				
Cereal indet. (grains)	x		x	x	x	x	x	x	x
Herbs									
<i>Anthemis cotula</i> L.					x				
<i>Bromus</i> sp.					x	x	x	x	
Chenopodiaceae indet.						x			
<i>Medicago/Trifolium/Lotus</i> sp.				xcf					
Small Poaceae indet.						x		x	
Large Poaceae indet.		x							
<i>Vicia/Lathyrus</i> sp.			xcoty						
Tree/shrub macrofossils									
<i>Corylus avellana</i> L.				xcf					
Other plant macrofossils									
Charcoal <2mm	x		x	xxx	x	xx	xx	x	x
Charcoal >2mm		x	x	xxx	x	xx	xx	x	x
Charcoal >5mm				x					
Charred root/stem			x	x			x		
Indet.seeds	x		x	x	x		x		
Mollusc shells									
Woodland/shade loving species									
<i>Punctum pygmaeum</i>					x				
Open country species									
<i>Helicella itala</i>									x
Helicidae indet.				x					
<i>Pupilla muscorum</i>	x	x		x	xx	x		x	
<i>Vallonia</i> sp.	x	xx	x	x	xx	x	x	xxx	x
<i>V. costata</i>					x			xxx	x
<i>V. excentrica</i>	x	x						x	
<i>V. pulchella</i>		x		x	x	x	x		
<i>Vertigo pygmaea</i>		xx		x					
Catholic species									
<i>Cochlicopa</i> sp.	x				xx				
<i>Trichia hispida</i> group	x	x	x	x	xx			xx	
Marsh/freshwater species									
<i>Lymnaea</i> sp.		x		x	x				x
<i>Vertigo</i> sp.	x		x	x	x	x	x		x
Other materials									
Black porous 'cokey' material	x	x	x	x					
Black tarry material				x		x	x	x	
Bone						x			
Burnt/fired clay				x					

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Sample No.	1	2	3	4	13	16	18	19	20
Context No.	5145	5162	5164	5133	5195	5213	5100	5044	5027
Feature No.					5194	5212	5099	5043	5026
Fish bone						x			
Small coal frags.	x	x		x					
Vitrified material				x					
Sample volume (litres)	20	20	20	40		20	20	20	10
Volume of flot (litres)	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
% flot sorted	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 27: The plant macrofossils and other remains

Sample No.	22	25	28	29	34	35	57	61
Context No.	5224	5233	5251	5262	5283	5302	5459	5557
Feature No.		5232						
Cereals								
<i>Hordeum</i> sp. (grains)	xcf	x				xcf		
<i>Triticum</i> sp. (grains)	xcf				x		x	
(glume bases)								x
<i>T. spelta</i> L. (glume bases)								x
Cereal indet. (grains)		x			x		x	x
Herbs								
<i>Arrhenatherum</i> sp. (tuber frags.)	x	x						
<i>Bromus</i> sp.					x			x
<i>Centaurea</i> sp.							x	
Fabaceae indet.							xcoty	
<i>Galium</i> sp.		x						
<i>Medicago/Trifolium/Lotus</i> sp.							x	
<i>Persicaria maculosa/lapathifolia</i>				xcf				
Small Poaceae indet.		x	x					
Large Poaceae indet.							x	
<i>Rumex</i> sp.		x						
Wetland plants								
<i>Carex</i> sp.								x
Other plant macrofossils								
Charcoal <2mm	x	xxx	xx	x	xx	xcf	xx	xx
Charcoal >2mm		xx	x		x		x	x
Charred root/stem	x		x		x			
Indet.seeds	x	x					x	x
Mollusc shells								
Open country species								
<i>Vallonia</i> sp.		x			x	x		
<i>V. costata</i>					x			
<i>V. pulchella</i>			x	x				
<i>Vertigo pygmaea</i>	x							
Catholic species								
<i>Cochlicopa</i> sp.							x	
<i>Trichia hispida</i> group							x	x
Marsh/freshwater species								
<i>Vertigo</i> sp.		x						
Other materials								
Black porous 'cokey' material	x	x	x				x	
Black tarry material	x	x		x		x		

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Small coal frags.				x				x
Sample volume (litres)		20	20	20	20	20	20	20
Volume of flot (litres)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
% flot sorted	100%	100%	100%	100%	100%	100%	100%	100%

Table 28: The plant macrofossils and other remains

Sample No.	9	15	10	12	17	26	27
Context No.	5172	5207	5187	5193	5218	5215	5229
Feature No.	5171	5171		5192	5217	5214	5214
Feature type	P/W	P/W	Layer	Pit	Pit	Pit	Pit
Cereals							
<i>Avena</i> sp.(grains)	x	xcf		xcf			
<i>Hordeum</i> sp. (grains)	x		x				
<i>Triticum</i> sp. (grains)	x	x	x	x			x
(glume bases)	x	x					
<i>T. spelta</i> L. (glume bases)	x	x		x			
<i>T. dicoccum</i> Schubl. (glume bases)		xcf					
Cereal indet. (grains)	x		x	x		x	x
Herbs							
<i>Anthemis cotula</i> L.	x	x			x		
<i>Arrhenatherum</i> sp. (tuber frags.)	x						
<i>Bromus</i> sp.	xcf						
<i>Medicago/Trifolium/Lotus</i> sp.	x			x			
Small Poaceae indet.	x	x	x				
Large Poaceae indet.			x	x			
<i>Rumex</i> sp.				xx			
<i>Vicia/Lathyrus</i> sp.	xcoty						
Other plant macrofossils							
Charcoal <2mm	xxx	x	x		x	xxx	xxx
Charcoal >2mm	x			x		xx	xxx
Charred root/stem	x			x			
Indet.culm node	x						
Indet.seeds	x		x	x			
Indet.tuber frags.			x				
Mollusc shells							
Woodland/shade loving species							
<i>Carychium</i> sp.						x	
Open country species							
<i>Pupilla muscorum</i>		x	x				
<i>Vallonia</i> sp.	x	x	xx	x	x	x	x
<i>V. costata</i>		x					
<i>V. excentrica</i>							x
<i>V. pulchella</i>			x				
<i>Vertigo pygmaea</i>						x	
Catholic species							
<i>Cochlicopa</i> sp.		x					x
<i>Trichia hispida</i> group	x	x	xxx	x	x	x	xx
Marsh/freshwater species							
<i>Anisus leucostoma</i>			xxx	x			
<i>Lymnaea</i> sp.			x	xb			x
<i>Vertigo</i> sp.			x	x			x
Other materials							

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Sample No.	9	15	10	12	17	26	27
Context No.	5172	5207	5187	5193	5218	5215	5229
Feature No.	5171	5171		5192	5217	5214	5214
Feature type	P/W	P/W	Layer	Pit	Pit	Pit	Pit
Black porous 'cokey' material			x			x	x
Black tarry material			x	x		x	
Bone							x
Small coal frags.		x				x	
Small mammal/amphibian bone	xpmc						
Sample volume (litres)		30			20	20	20
Volume of flot (litres)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
% flot sorted	100%	100%	100%	100%	100%	100%	100%

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Table 29: The plant macrofossils and other remains

Sample No.	31	33	49	51	53	55	56	59	60	62
Context No.	5265	5281	5336	5381	5405	5407	5445	5520	5197	5575
Feature type		P.pit			Pit	Grave		Pit	Pit	
Cereals										
<i>Avena</i> sp.(grains)							x			
<i>Hordeum</i> sp. (grains)		xx					xx		x	
<i>Triticum</i> sp. (grains)		x	x				xx	x	x	
(glume bases)							x		x	
(spikelet bases)									x	
<i>T. spelta</i> L. (glume bases)									x	
Cereal indet. (grains)		xx		x	x	x	xxxx	x	x	x
Herbs										
<i>Anthemis cotula</i> L.							xx		x	
Apiaceae indet.							x			
<i>Beta vulgaris</i> type (capsule frag.)							xcfcapfg			
<i>Bromus</i> sp.		x					x		x	x
<i>Centaurea</i> sp.							x		xcf	
<i>Chenopodium album</i> L.							xx	x		
Chenopodiaceae indet.							x			
Fabaceae indet.	x						xcotyfg			
<i>Fallopia convolvulus</i> (L.)A.Love							xx			
<i>Fumaria officinalis</i> L.							x			
Medicago/Trifolium/Lotus sp.		xcf					x	x		
Small Poaceae indet.							xx	x		
Large Poaceae indet.		x								
Polygonaceae indet.							x			
<i>Ranunculus</i> sp.										x
<i>Raphanus raphanistrum</i> L. (siliqua)							x			
<i>Rumex</i> sp.							x		x	
<i>Vicia/Lathyrus</i> sp.	x									
Other plant macrofossils										

Newport Pagnell, Milton Keynes

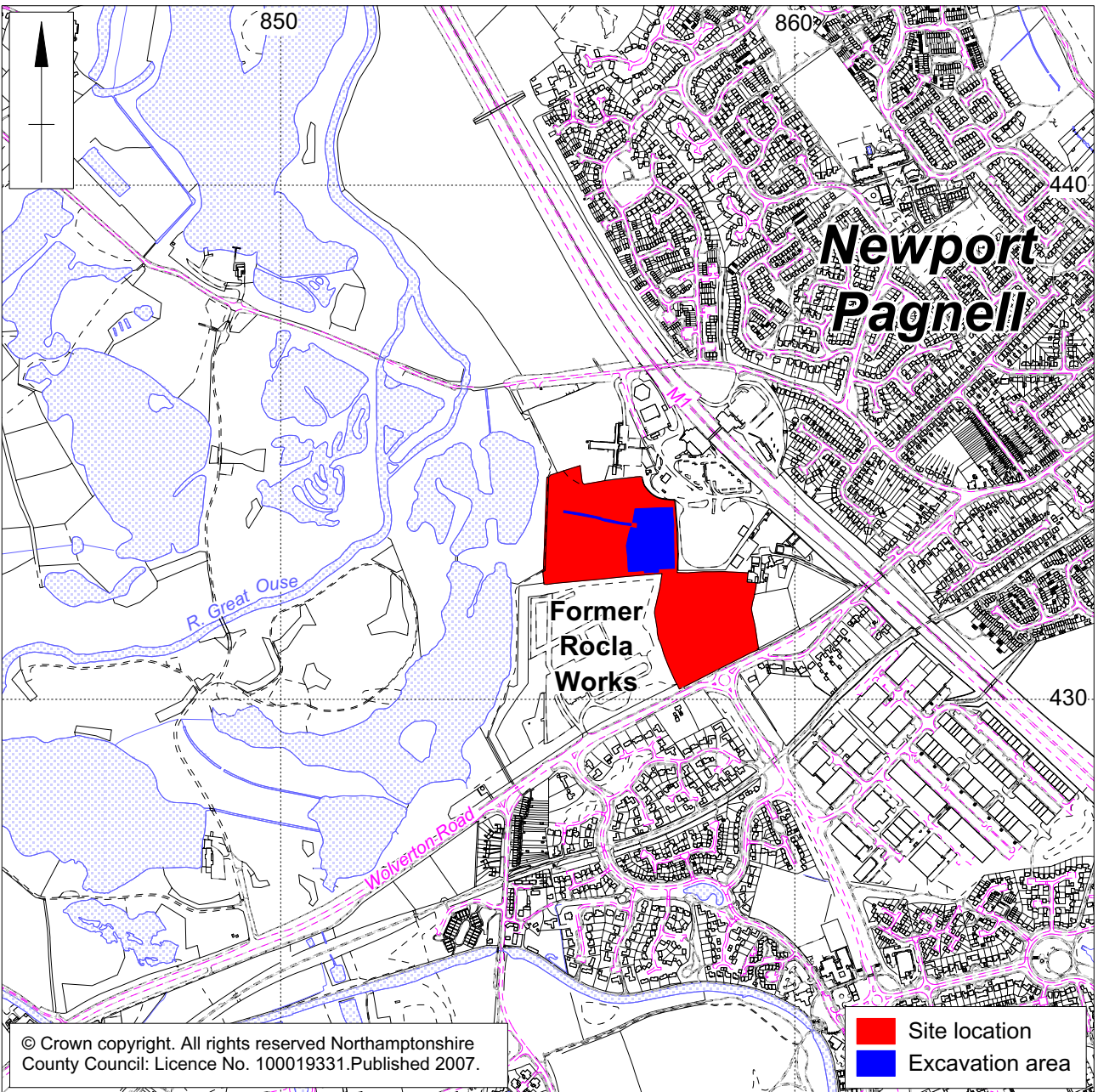
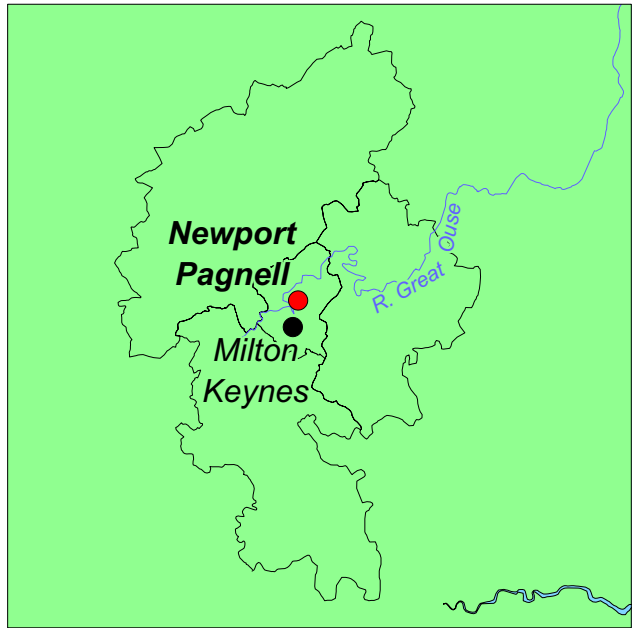
Sample No.	31	33	49	51	53	55	56	59	60	62
Context No.	5265	5281	5336	5381	5405	5407	5445	5520	5197	5575
Feature type		P.pit			Pit	Grave		Pit	Pit	
Charcoal <2mm	xx	xx	x	xx	xx	x	x	xx	xx	xx
Charcoal >2mm	x	xx		x	x		x	x	xx	xx
Charred root/stem							x	x		x
Indet.seeds	x	x					x	x		
Indet.tuber frags.	x									
Mollusc shells										
Woodland/shade loving species										
<i>Carychium</i> sp.									x	
<i>Oxychilus</i> sp.		x								
Open country species										
<i>Helicella itala</i>						x				
<i>Vallonia</i> sp.		x	x	x	x		x		x	x
<i>V. costata</i>									x	
<i>V. pulchella</i>			x							
<i>Vertigo pygmaea</i>				x			x		x	
Catholic species										
<i>Cochlicopa</i> sp.									x	
<i>Trichia hispida</i> group		x	x	x		x		x	x	x
Marsh/freshwater species										
<i>Anisus leucostoma</i>								x	x	
<i>Lymnaea</i> sp.		x	x						x	
<i>Vertigo</i> sp.		x	x				x	x	x	x
Other materials										
Black porous 'cokey' material		xx					xxx	x		
Black tarry material	x						x	x	x	
Bone						x				
Burnt/fired clay							x			
Small coal frags.					x	x				x
Small mammal/amphibian bone							xpmc			

Newport Pagnell, Milton Keynes

Sample No.	31	33	49	51	53	55	56	59	60	62
Context No.	5265	5281	5336	5381	5405	5407	5445	5520	5197	5575
Feature type		P.pit			Pit	Grave		Pit	Pit	
Sample volume (litres)	20	20			20	10		20	20	
Volume of flot (litres)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1
% flot sorted	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

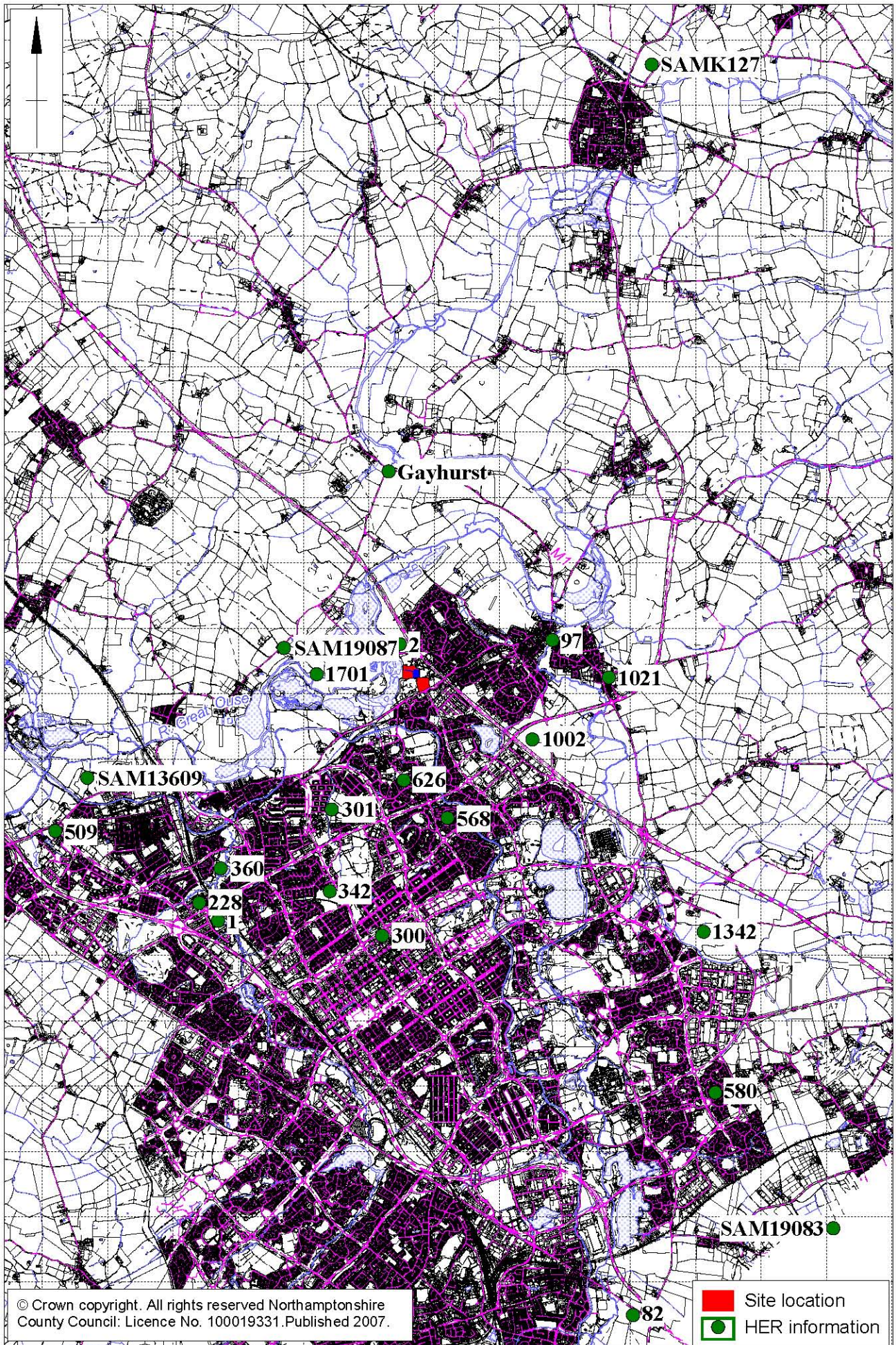
Table 30: Rare charcoal fragments and/or other materials

Sample No.	Context No.	Feature type	Contents
5	5166	DITCH	CH;MOLL
6	5165	DITCH	CH;MOLL
7	5176		BPC;MOLL
8	5178		CH;BPC;BTM;MOLL
11	5189	DITCH	CH;BPC;MOLL
14	5202	DITCH	CH;BTM;MOLL
21	5028	DITCH	CH;CR/ST;MOLL
23	5032	DITCH	CH;CR/ST;MOLL
24	5086	DITCH	CH;BTM;MOLL
30	5263	PIT	CH;MOLL
50	5350		CH;BPC;MOLL
52	5391		CH;BTM;MOLL
58	5477	PIT	CH;BPC;MOLL



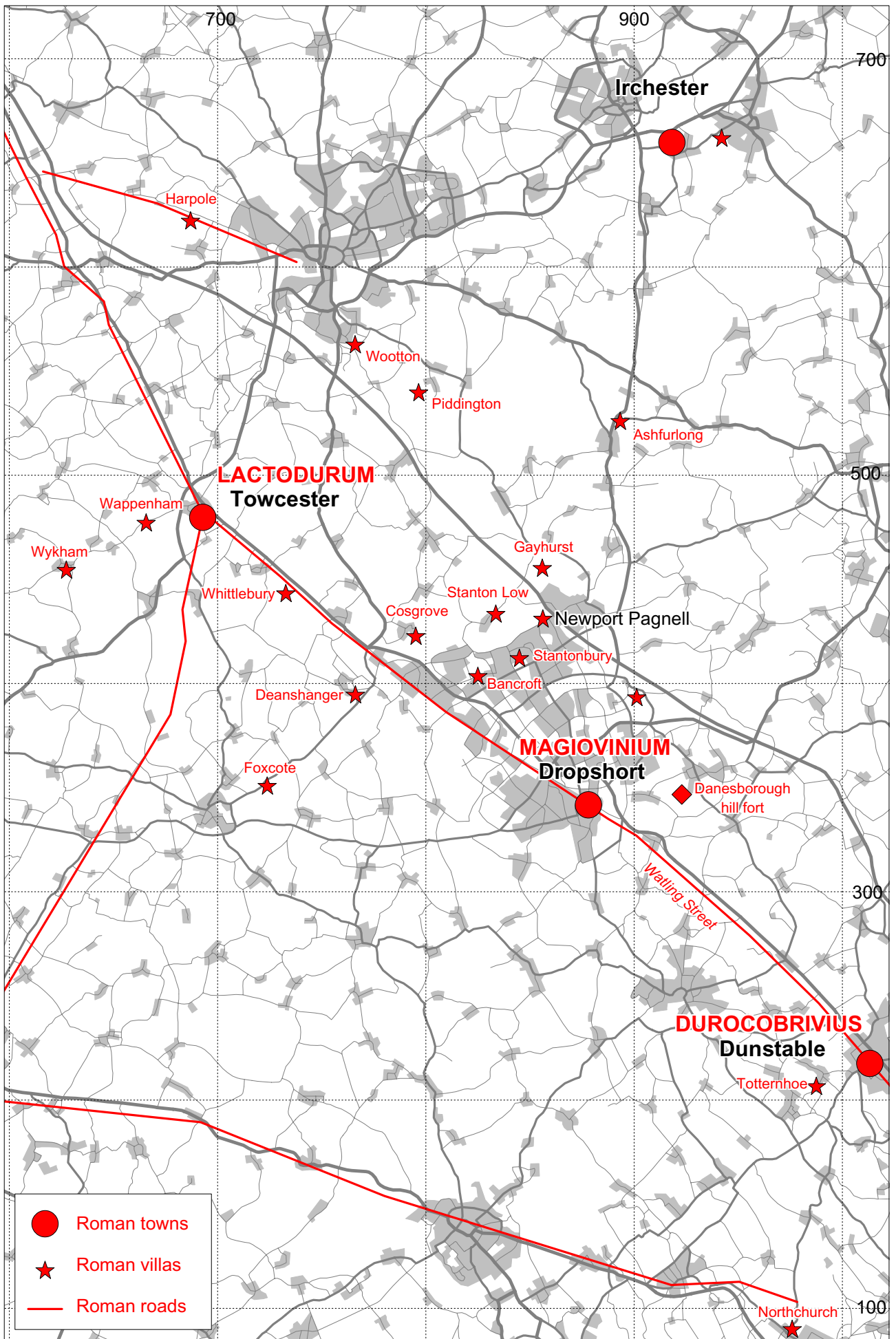
Scale 1:12,500

Site location Fig 1

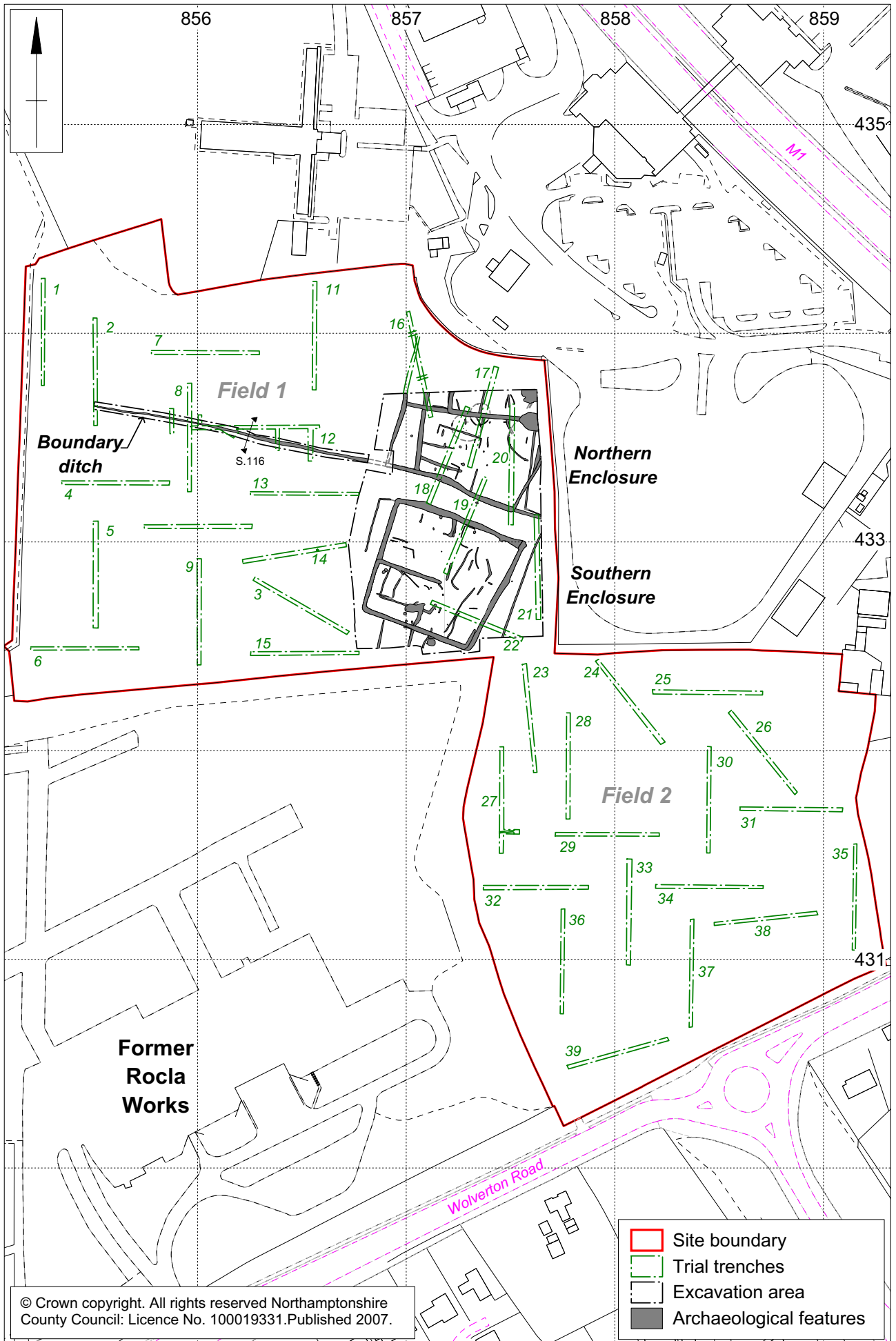


Scale 1:80,000

The Roman settlement and its local environs Fig 2

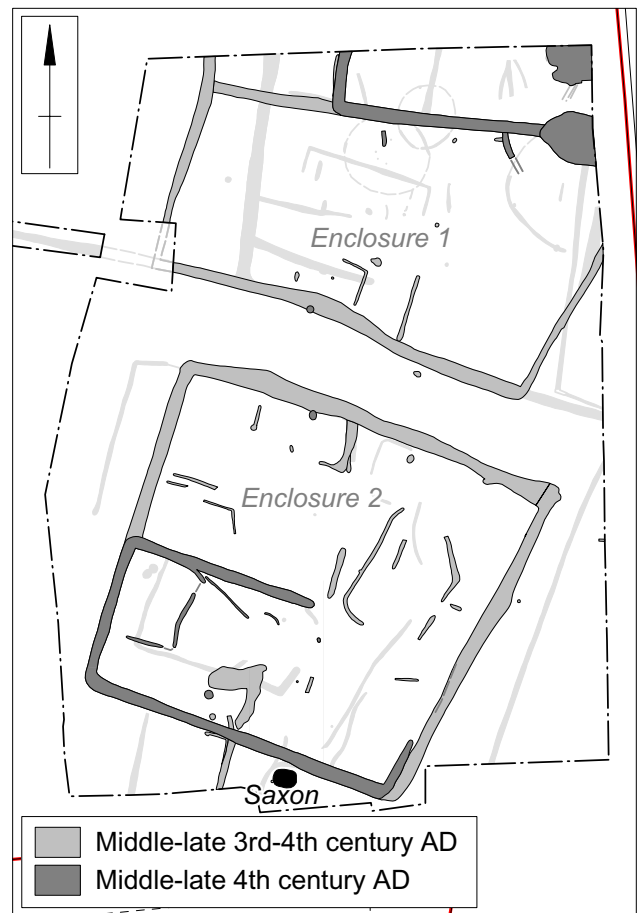
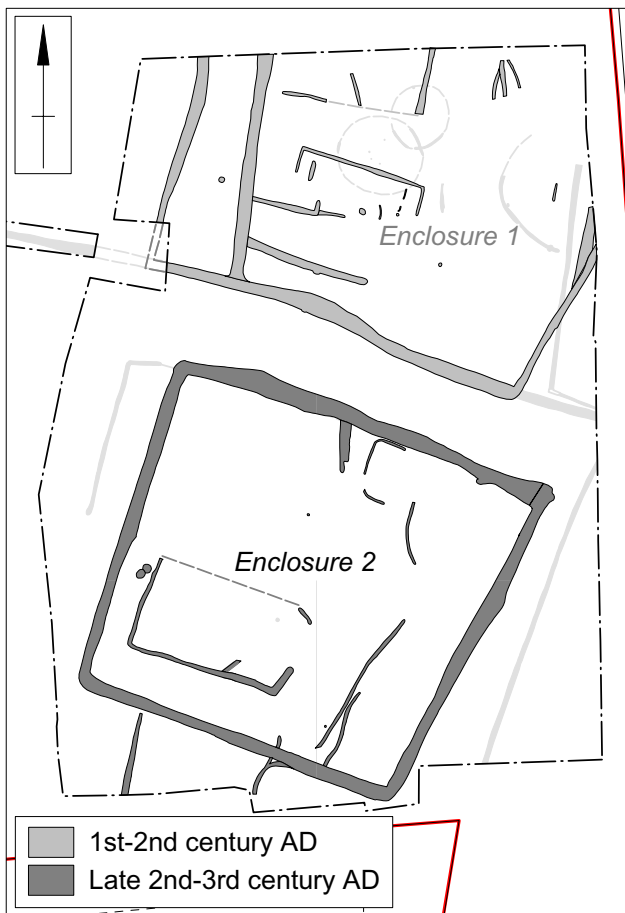
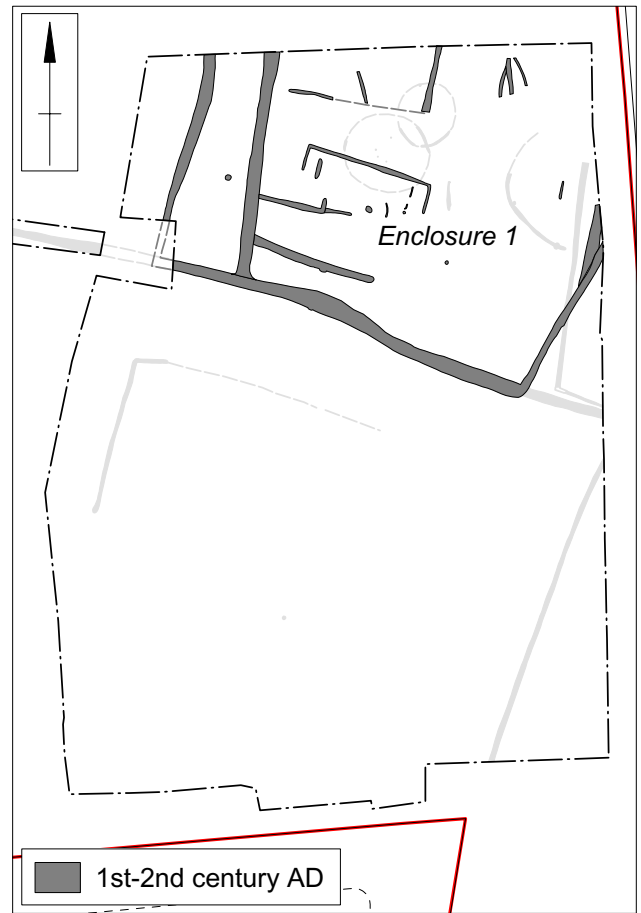
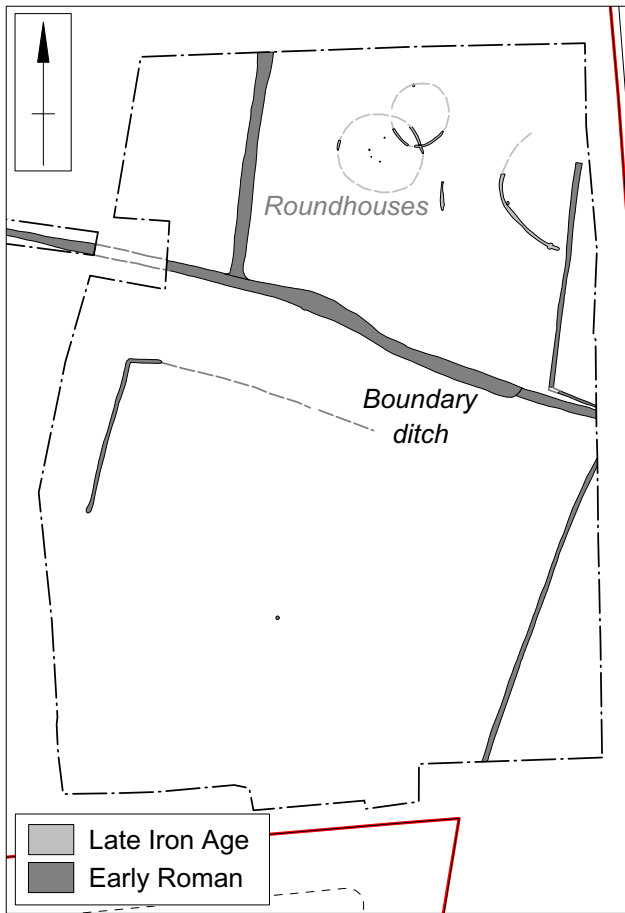


The regional setting of the Roman settlement, showing sites referenced in text Fig 3



Scale 1:2500

General plan of trial trenches and excavated area Fig 4

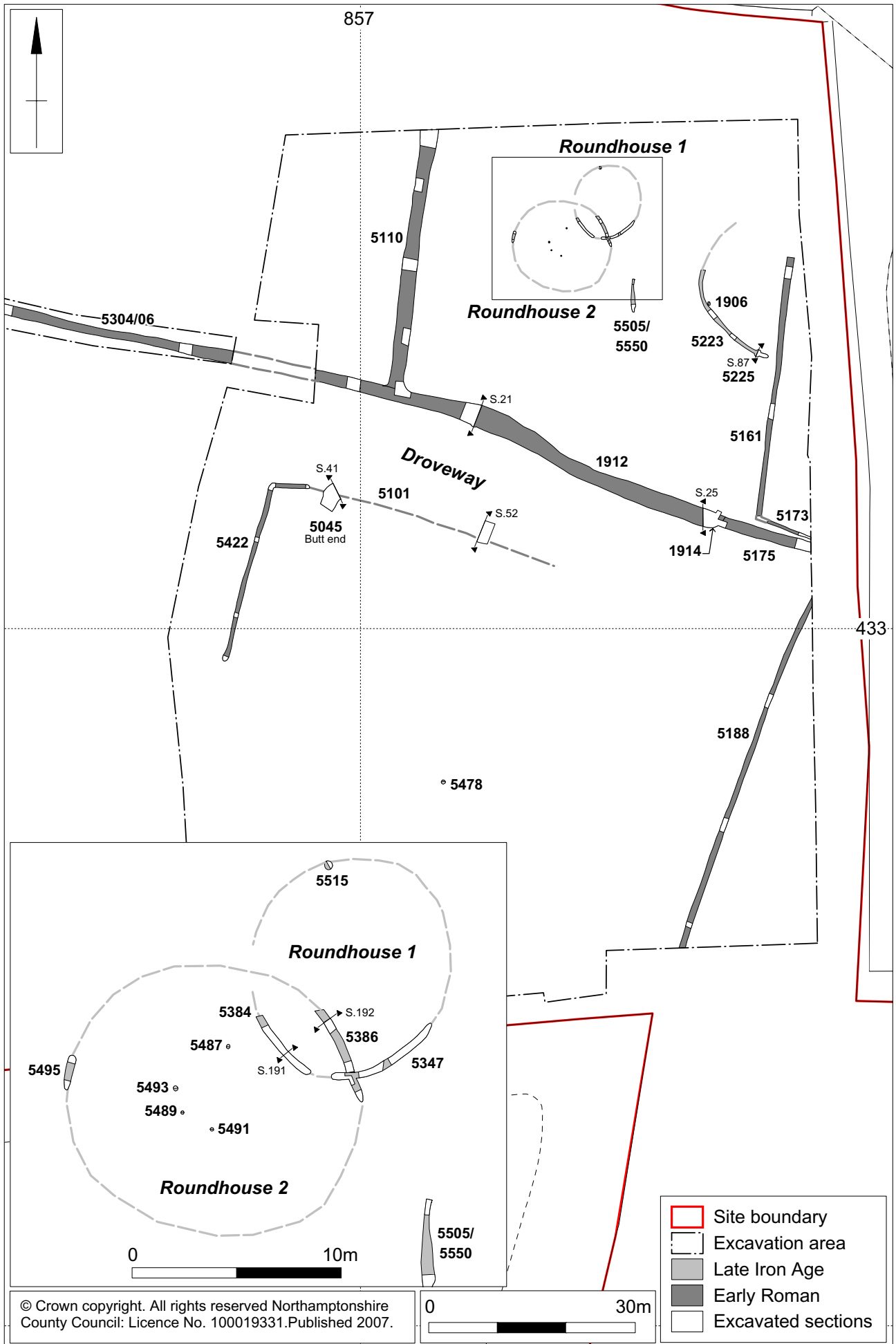


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Scale 1:1250

The development of the enclosure system Fig 5



Scale 1:750

The late Iron Age/early Roman settlement Fig 6

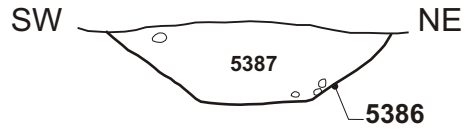
Section 191 - Iron Age Roundhouse 1

67.59mOD



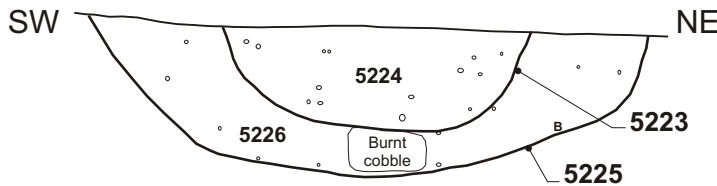
Section 192 - Iron Age Roundhouse 2

67.63mOD



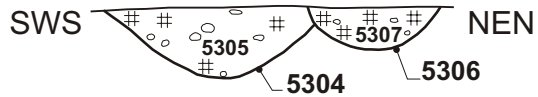
Section 87 - Iron Age curvilinear ditch

67.66mOD



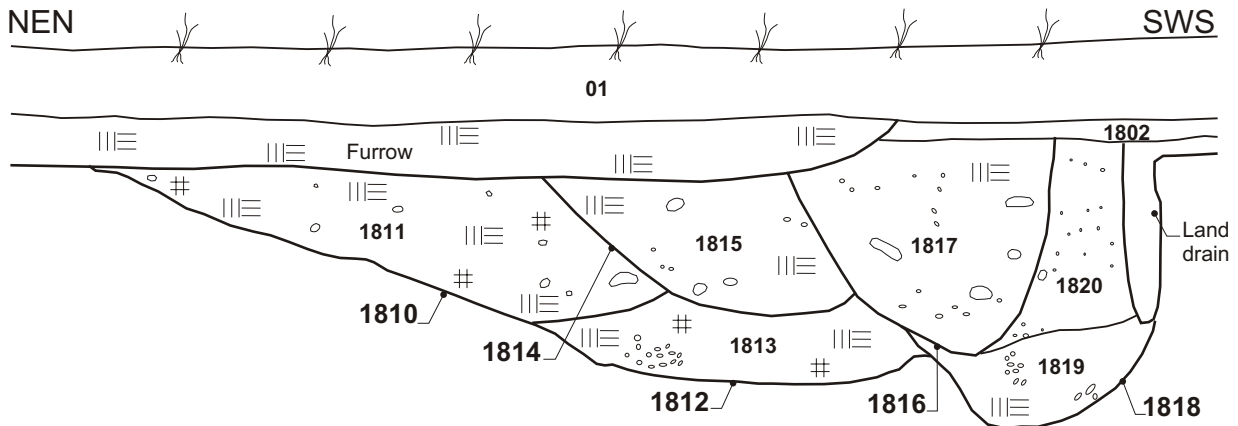
Section 116 - The linear boundary ditch

64.04mOD



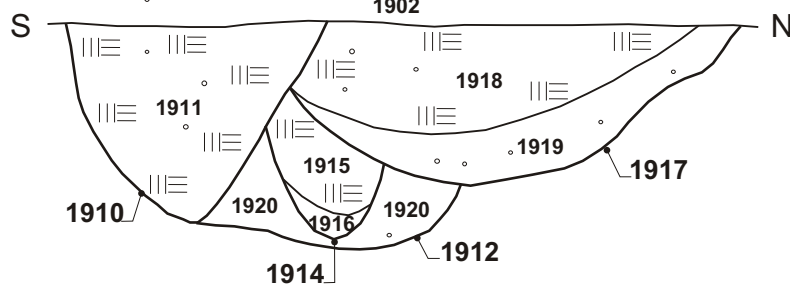
Section 21 - The linear boundary ditch and enclosure ditches

68.81mOD



Section 25 - The linear boundary ditch and enclosure ditches

68.61mOD



- Clay
- Charcoal
- Burnt patches
- Pottery
- Flint
- Bone



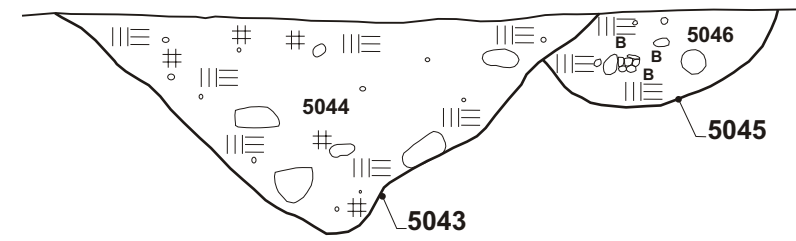
Sections of Iron Age roundhouse ditches, the linear boundary ditch and enclosure ditches Fig 7

Section 41 - Field system and enclosure ditches

66.89mOD

NW

SE

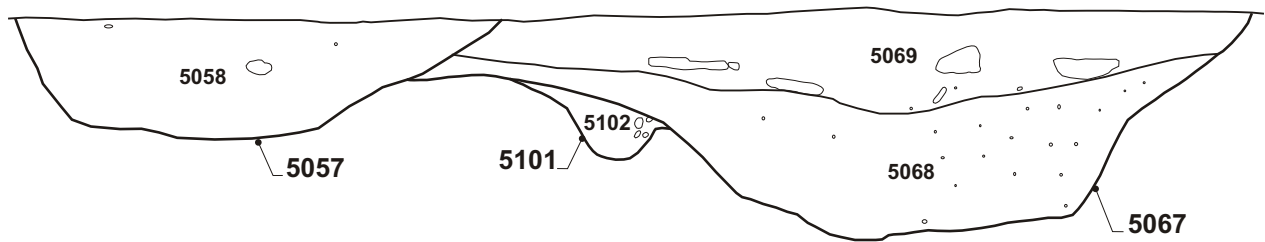


Section 52 - Field system and enclosure ditches and pit

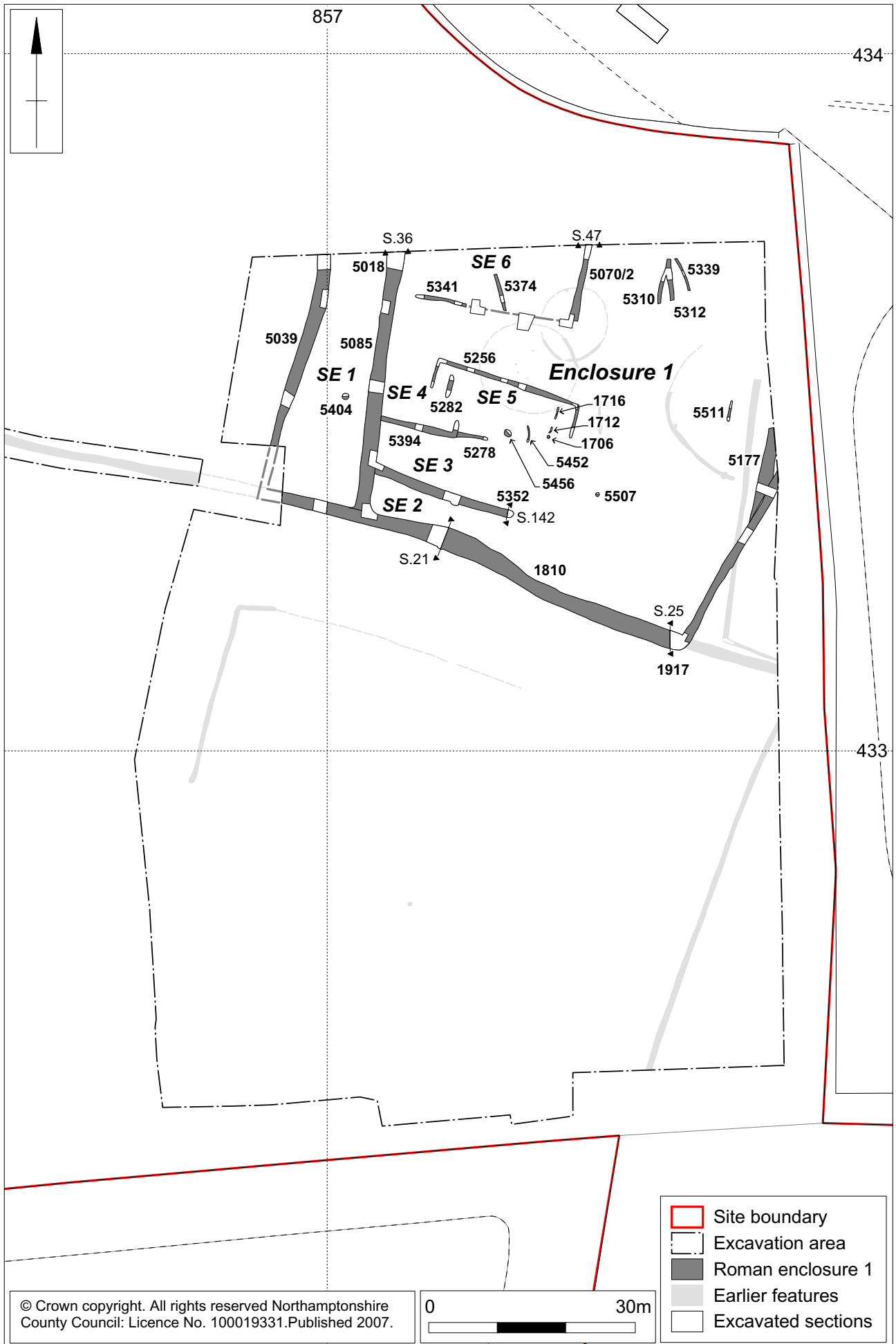
SW

68.68mOD

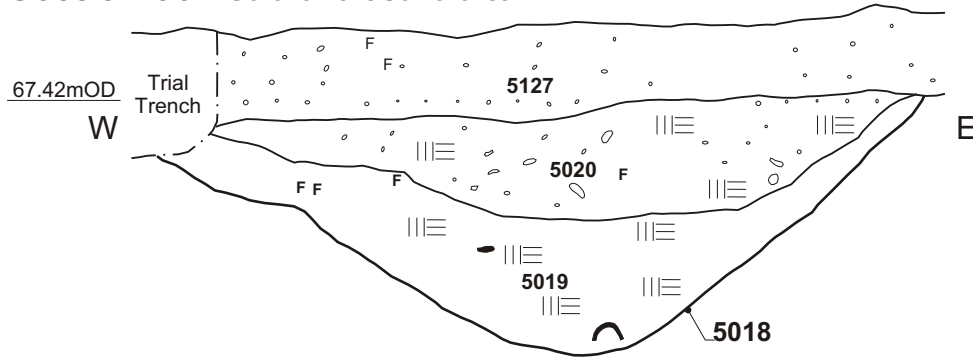
NE



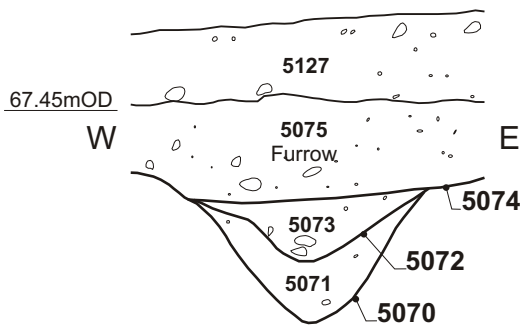
Sections of field system and enclosure ditches Fig 8



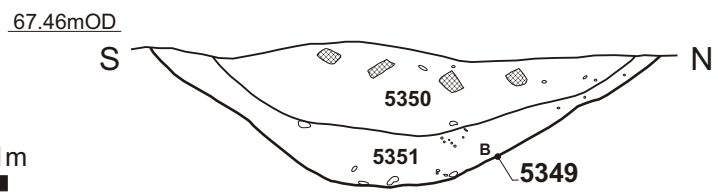
Section 36 - Sub-enclosure ditch



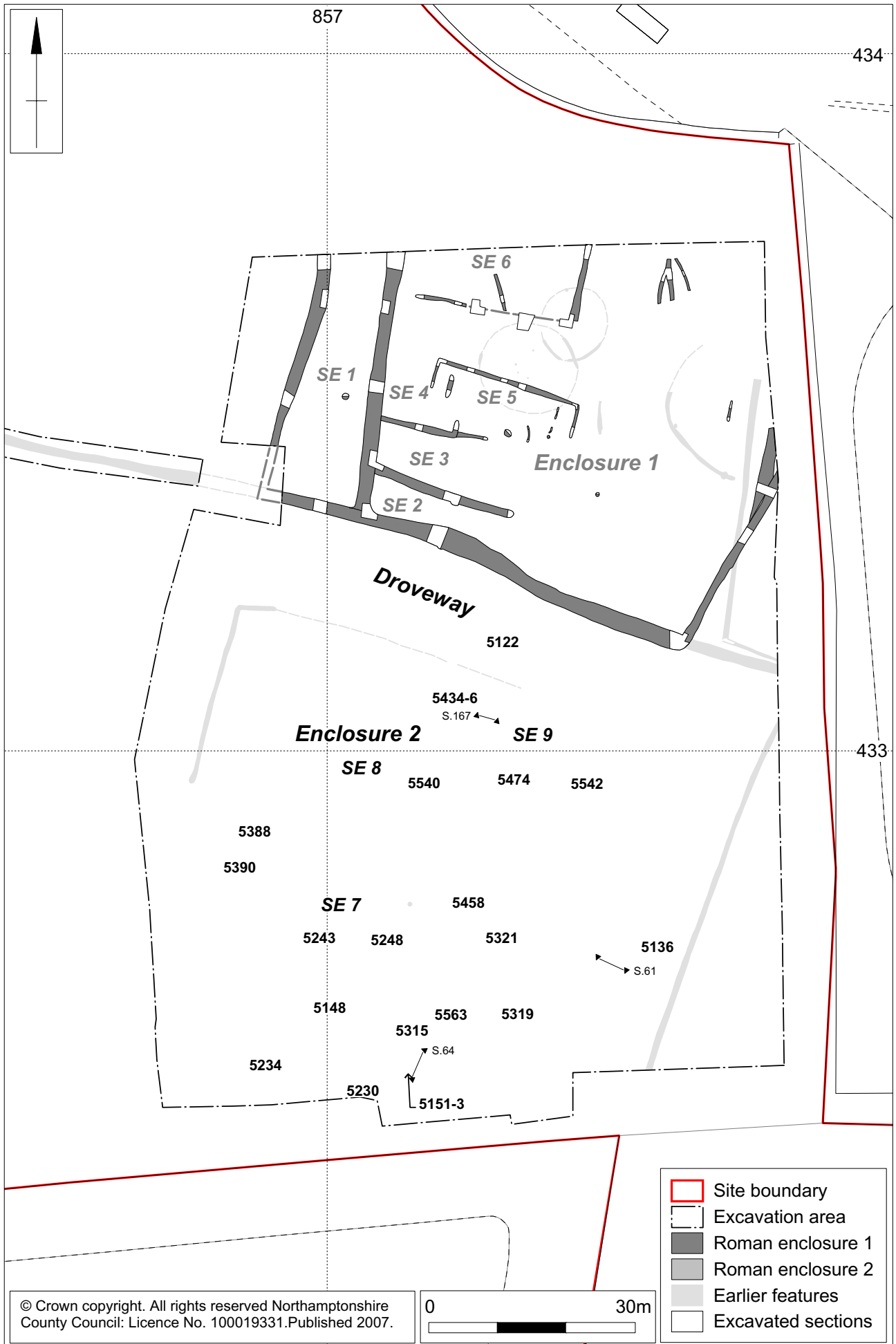
Section 47 - Sub-enclosure ditch



Section 142 - Sub-enclosure ditch



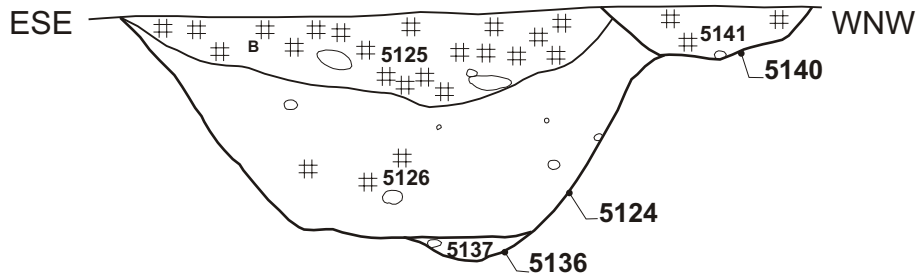
Sections of the sub-enclosure ditches Fig 10



Scale 1:750 The addition of the southern enclosure (late 2nd-3rd century AD) Fig 11

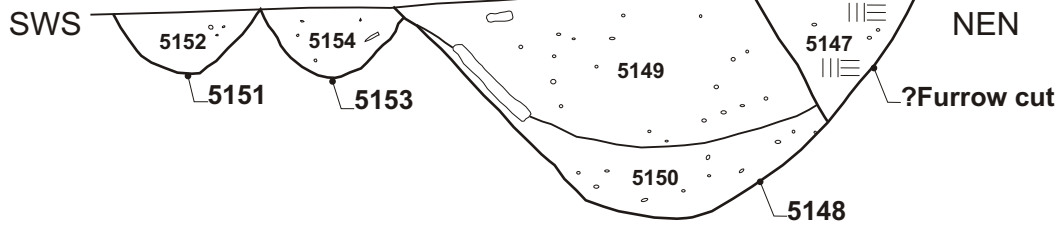
Section 61 - Late 2nd-3rd century Roman ditch

37.32mOD



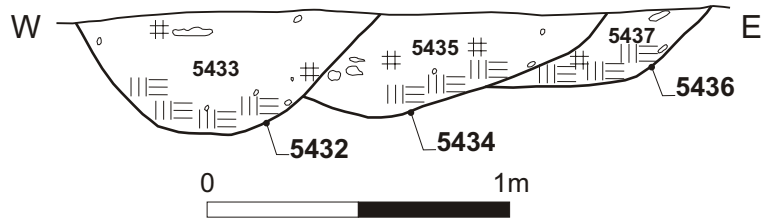
Section 64 - Late 2nd-3rd century Roman ditch

66.99mOD



Section 167 - Late 2nd-3rd century Roman ditch

67.26mOD

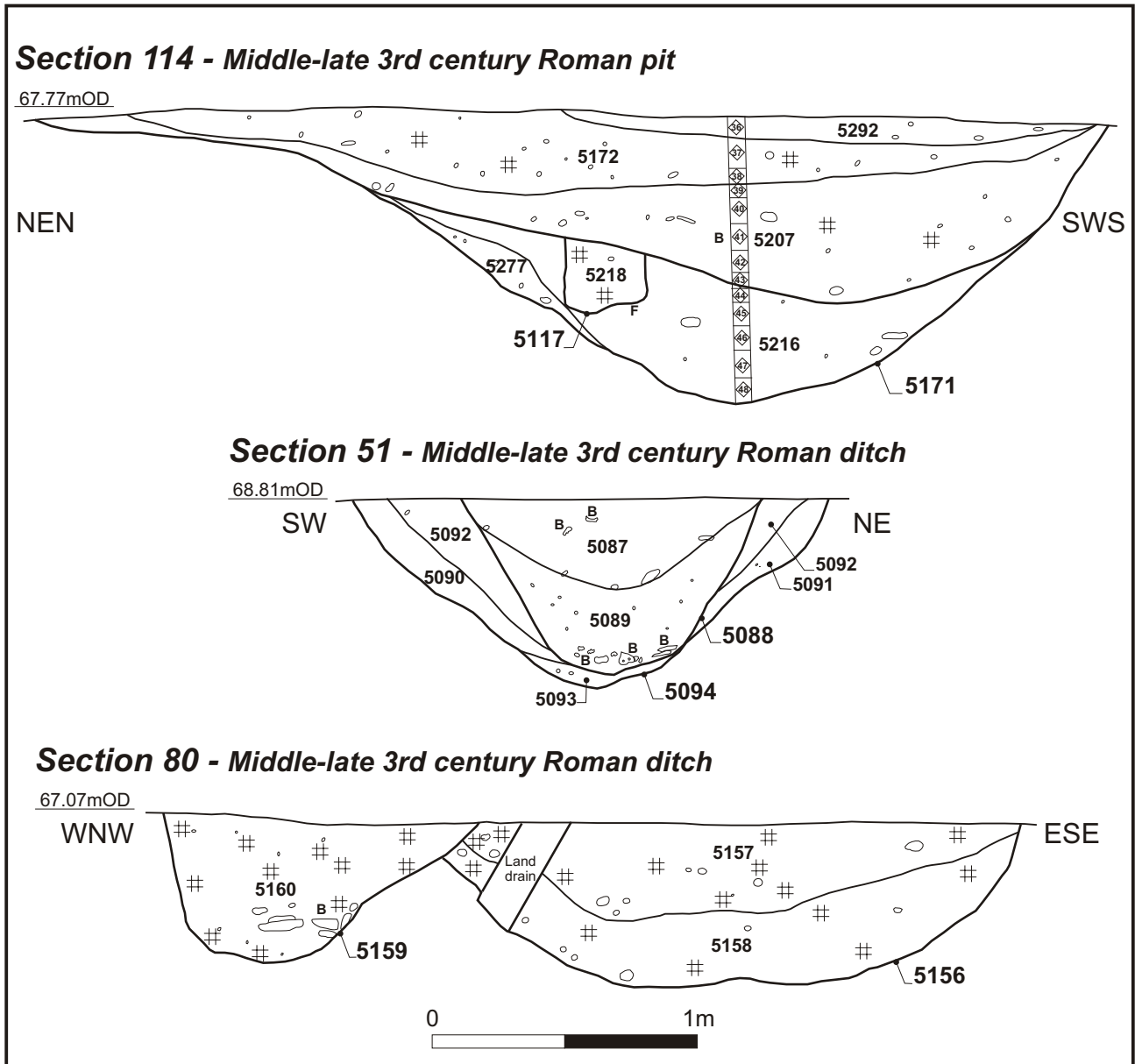


Sections of the enclosure and sub-enclosure ditches Fig 12

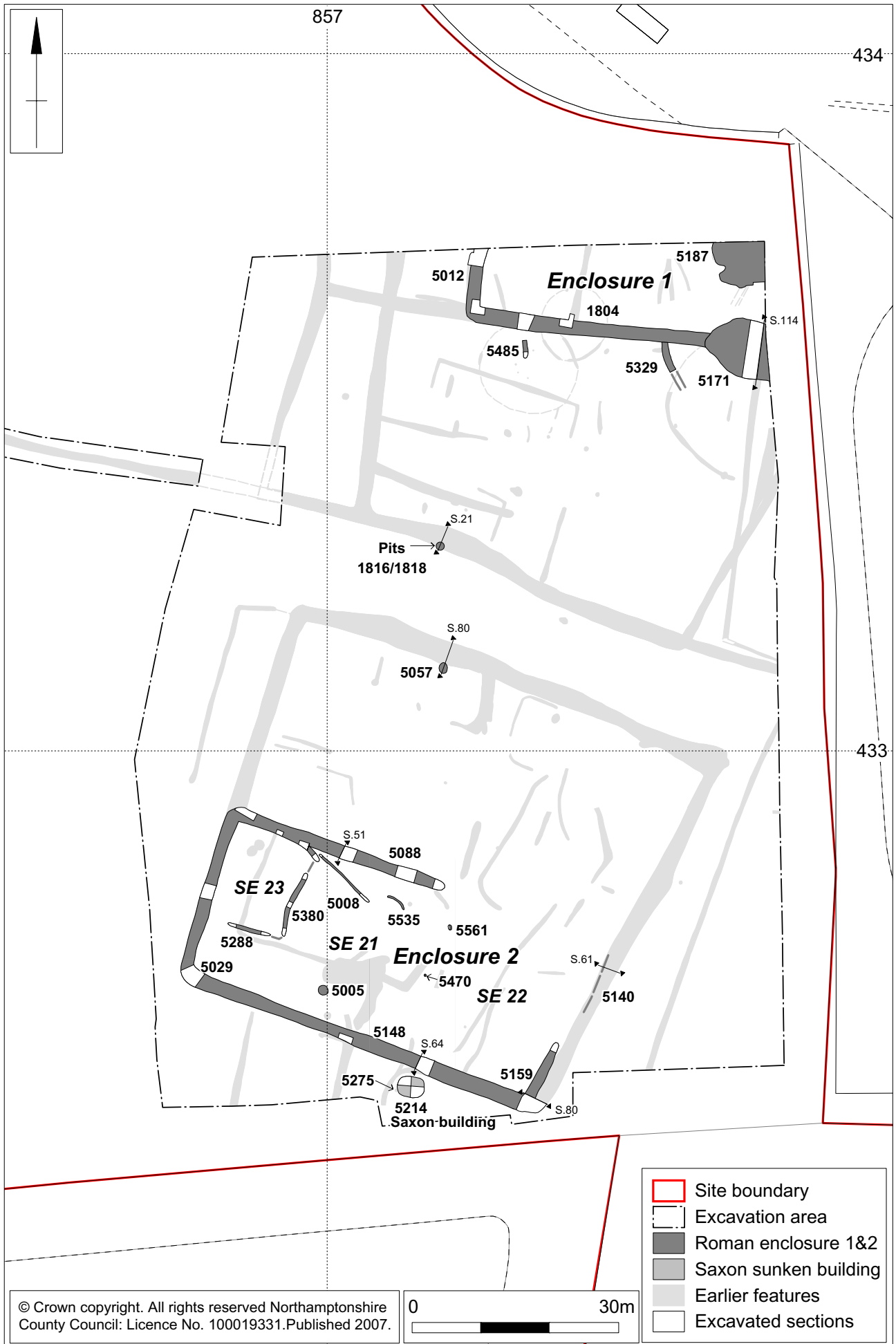


Scale 1:750

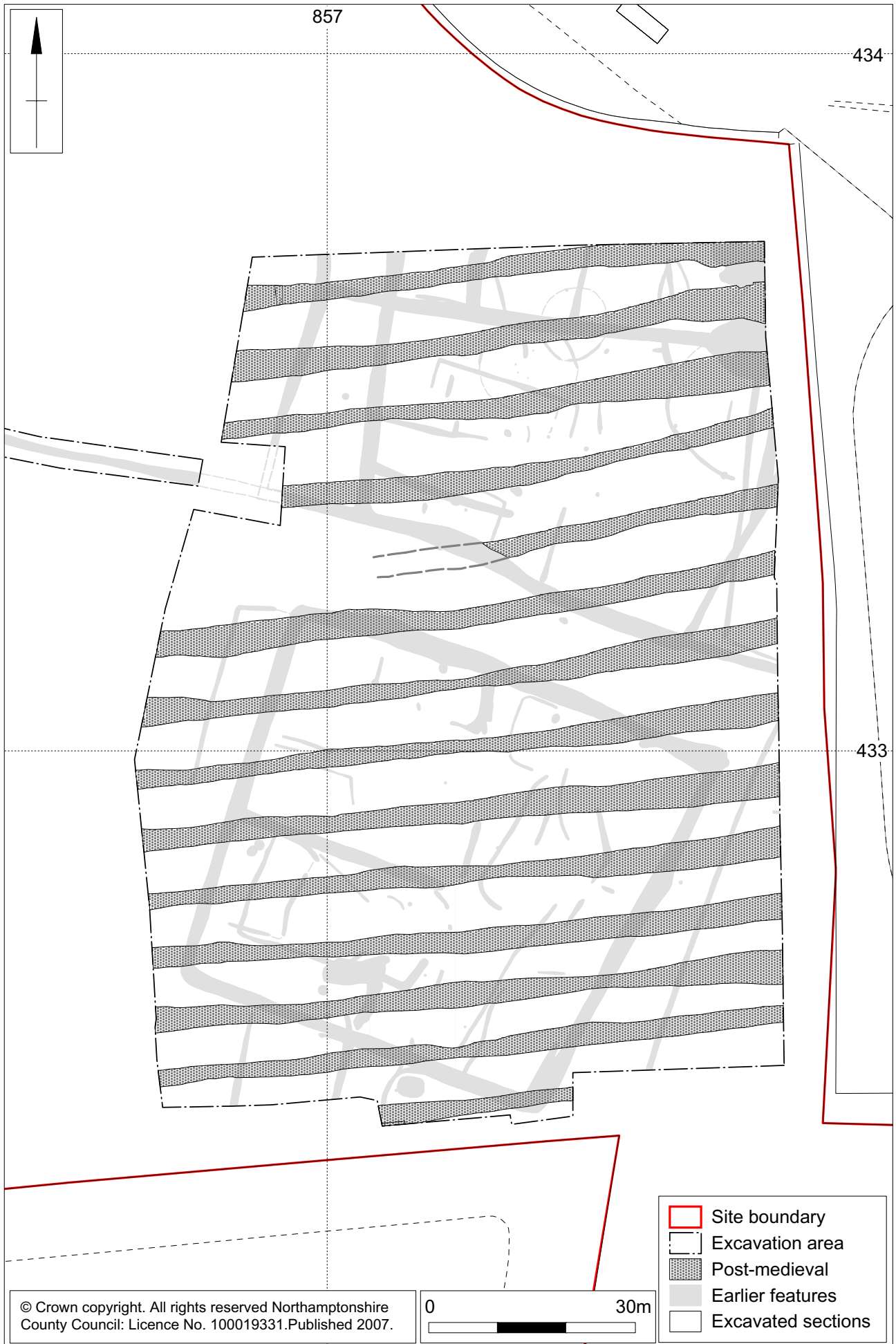
Refurbishment of the enclosure (mid/late 3rd-4th century AD) Fig 13



Sections of the watering hole, the enclosure and sub-enclosure ditches Fig 14

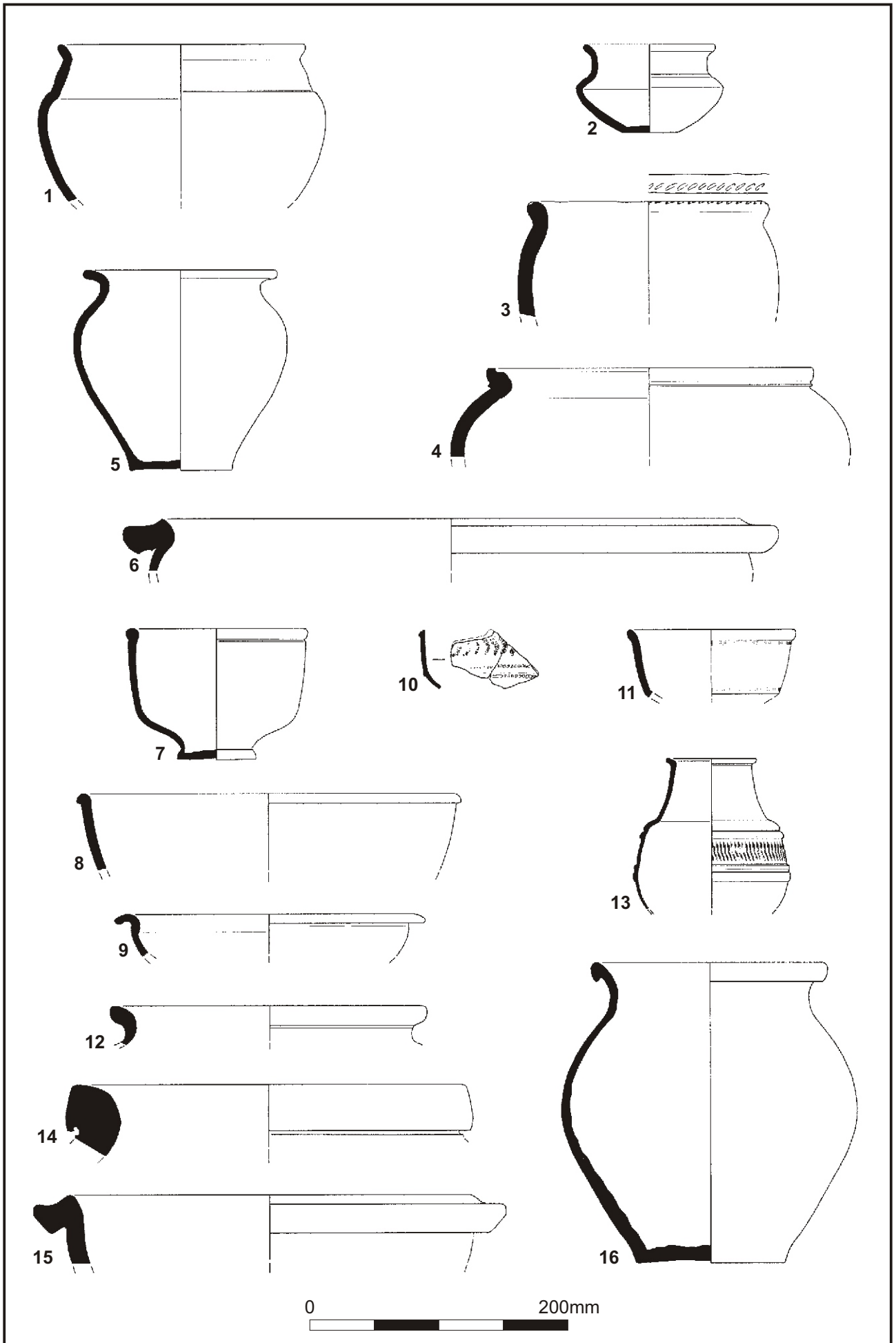


The decline of the Roman settlement (late 4th century) Fig 15



Scale 1:750

Furrows of the medieval field system Fig 16



Late Iron Age to early Roman (1-3) and Roman pottery (4-16) Fig 17



Plate 1: Southern Enclosure (4), east side ditch 5124. Facing south



Plate 2: Southern Enclosure (4 and 6), south-west corner, ditches 5156 and 5159, Facing north



Plate 3: Southern enclosure (2) NW corner. Ditches 5029 & 5148, facing north east.

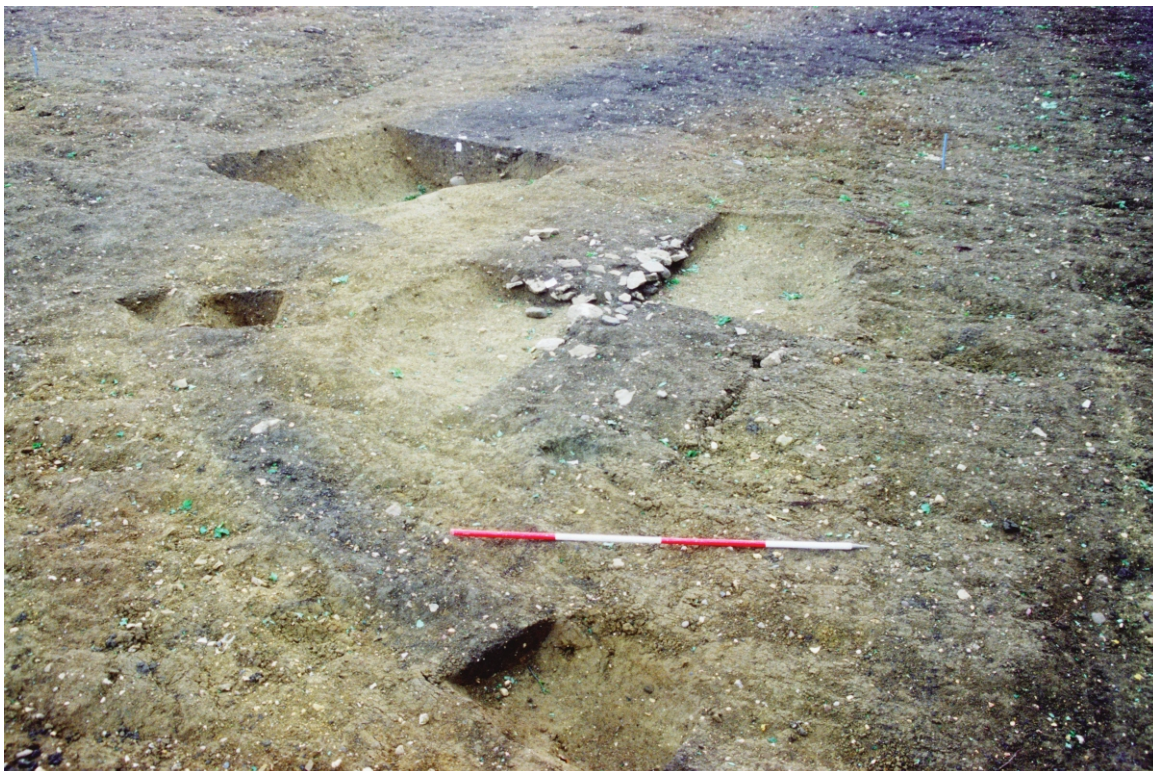


Plate 4: Saxon sunken-featured building, 15214, facing south east.



Plate 5: Roman copper alloy finds: zoomorphic bracelet, spoon fragment and decorative strip.



Plate 6: Iron objects: two Roman knives, a Roman ring and a medieval spur.