

Roman Industrial Activity at Norman Way Industrial Estate Over, Cambridgeshire



**Post-Excavation Assessment
And Updated Project Design**



September 2015

Client: Universal Property Ltd

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**Roman Industrial Activity at Norman Way Industrial Estate, Over,
Cambridgeshire.**

Post-excavation Assessment and Updated Project Design

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Summary

During November and December 2014, Oxford Archaeology East (OA East) carried out an archaeological excavation on 0.3ha of land at Norman Way Industrial Estate, Over, Cambridgeshire (TL 3790 6930). Relatively dense archaeological activity was recorded in the north area of the site, where a large amount of sub-circular pits, a possible tank relating to brewing, a number of boundary ditches and two watering holes were excavated, all of Roman date.

Early Roman activity consisted of a number of boundary ditches and pits, related to agricultural activity close to a nearby settlement. This was quickly followed by a phase of industrial activity to the south-west of the ditches, represented by a cluster of pits, and a possible windbreak. These pits contained dark in-situ charcoal and slag-rich fills, indicating metalworking in the vicinity, although no furnaces were identified.

The most intensive activity occurred in the later Roman period, when another watering hole, a number of large intercutting sub-circular pits and a possible tank related to brewing, were cut. The features relating to this phase all had extensive amounts of crop processing waste in their backfills. These backfills comprised dark organic material, with large quantities of charred grain and chaff recovered from environmental samples. The fact that a significant number of the pits were intercutting and often shared the same backfill suggests intense activity over a short period of time, where features were dug and backfilled in quick succession.

Along with this activity, a large sub-rectangular watering hole was dug to the south, truncating a number of earlier features. Fills from this watering hole suggest metalworking was still undertaken in the area, with slag being recovered from the slump fills. Similarly, a group of pits in this phase contained large quantities of hammerscale.

No significant post-Roman archaeology was found. Medieval or post-medieval furrows on a north north-east to south south-west alignment were recorded across site, along with post-medieval plough scarring.

A moderate finds assemblage was recovered from the site, including pottery dating from mid 1st century through to the 4th and a number of quern fragments. Other finds include two Roman coins, two pins (one bone, the other copper), a moderate amount of slag and a small assemblage of animal bone.

Environmental remains are excellent, with a large quantity of charred chaff and spelt grain being recovered from the flots. A lot of the charred grain shows evidence of germination – indicative of malting the grain for brewing. It is possible malting was taking place on site or in the near vicinity, and any waste from this process was being used a fuel source for other industrial activities nearby. Environmental evidence of this quality and scale is rarely seen in the archaeological record, and may be nationally significant evidence of a settlement focused on the cultivation and malting of spelt wheat on an industrial scale, the waste of which was used as fuel for metalworking.

Overall, this site offers a tantalising, and important, glimpse into intensive industrial activity related to a small, possibly specialised, agricultural settlement, the evidence from which can make a valuable contribution to regional and local research aims.

1 INTRODUCTION

1.1 Project Background

- 1.1.1 Between the 5th November and 5th December 2014, an excavation on 0.3ha of land at Norman Way Industrial Estate, Over (TL 3790 6930, Fig. 1) was undertaken by Oxford Archaeology East (OA East). This was prior to expansion of the industrial estate, where further units were to be built with associated parking and access.
- 1.1.2 OA East carried out an evaluation in 2009 (House 2009), in which a relatively dense amount of archaeology was recorded in the northern half of the site. Therefore excavation was deemed necessary by Cambridgeshire County Council Historic Environment Team (CCC HET) to mitigate any damage that would be caused to the archaeology by the development (Planning Application Ref. S/1431/13/FL).
- 1.1.3 This assessment has been conducted in accordance with the principles identified in English Heritage's guidance documents *Management of Research Projects in the Historic Environment*, specifically *The MoRPHE Project Manager's Guide* (2006) and *PPN3 Archaeological Excavation* (2008).

1.2 Geology and Topography

- 1.2.1 The subject site lies approximately 1km south-east of the fen edge. Much of the western half of Over comprises fen land lying at about 3mOD. The eastern half of the parish is on higher ground largely comprising Ampthill Clay overlain by Pleistocene Till (BGS: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>, accessed 05/01/15).
- 1.2.2 The highest point in the parish of Over lies near Hill Farm at about 18m AOD. The subject site is located in the eastern half of the parish on the higher ground at approximately 11mOD. The River Great Ouse is located 3km to the north of the site and the Swavesey Drain, a meandering waterway that follows the parish boundary between Over and Swavesey, flows approximately 2km to the south of the site.
- 1.2.3 The site consisted of scrub land prior to excavation, with little plant coverage and a large amount of waste building material deposited across the area. It was noted that the land appeared to have been partially stripped previously, mainly in the northern-most half of site. This probably took place during the original construction of the industrial estate in the late 20th century. The water table was very high, at around 0.4m below the machine level.

1.3 Archaeological and Historical Background

Prehistoric (2500 BC-AD 43)

- 1.3.1 Evidence of prehistoric remains near the site is limited. The majority of prehistoric sites and findspots are located to the north of the parish, closer to the River Great Ouse and over 1km from the site. Just over 1km to the north-west, a Bronze Age arrowhead was recovered when metal detecting the site of a possible Roman villa at Church End (MCB 16669). A single Iron Age coin was found in the late 19th century 1km to the north-west of site (CHER 03725) and a small amount of Iron Age archaeology was found 100m to the south-east during excavation of the guided busway route (MCB19358). The finds from this site suggested a date for occupation from the Middle Iron Age to just after the Roman conquest.
- 1.3.2 Further afield, prehistoric sites are well known within the area. Approximately 2.6km to the north of the site, is located the Ouse Fen Bronze Age barrow group, some of which have been investigated (Evans & Knight 1997, CHER 11943). Further investigations

took place in the same area, uncovering clusters of Late Neolithic pits and parts of a Middle Bronze Age field system (*ibid.*, CB15277). Similarly, excavations at Striplands Farm, West Longstanton recorded a later Bronze Age settlement, from which one of the region's largest later Bronze Age ceramic assemblages was recovered (Evans & Patten 2011).

- 1.3.3 Iron Age settlements are known throughout the landscape, with pre-conquest remains being located to the north of the subject site, at The Camp Ground in Colne Fen (Evans 2013). A total of three enclosures were excavated along with a “scatter” of roundhouses outside of these enclosures. This was the only site excavated in the area where direct continuity of settlement was seen from the Iron Age through to the Roman period. Multiple other sites with Iron Age remains were excavated nearby (Sites 1 to 5 and Rhee Lakeside; Evans 2013, chapter 5). All these sites indicated relatively dense fen-edge settlement from the Middle through to the Late Iron Age.
- 1.3.4 Similarly, evaluations and excavations approximately 2.5km to the south-east of the site have recorded Iron Age settlements and occupation at Longstanton. Evaluation in 1996 (Evans *et al.* 2007) uncovered numerous Iron Age settlements, including a Middle to Later Iron Age “keyhole-shaped” enclosure (*ibid.*).
- 1.3.5 Other fieldwork in the area of Longstanton by Birmingham Archaeology recorded Iron Age remains with excavations prior to construction of Longstanton Bypass revealing a Middle Iron Age enclosure ditch with a number of pits and gullies within (Paul & Cuttler 2008).
- 1.3.6 Roman (AD 43-410)**
- 1.3.7 The majority of sites and findspots within the area are of Roman date. The subject site is located near the south-western edge of the Roman fen (Hall 1996, 158 fig.88). This area was densely settled during the Roman period and Hall (1996, 159) remarks that “there were villas and the whole landscape was infilled with small rural settlements”. In the immediate vicinity of the subject site, finds of Roman date have been found including pottery and a fragment of tile (CHER 07724). These finds may be associated with a double rectangular enclosure which can be seen as a cropmark (CHER 11133 & Hall 1996, 151 fig.84) directly to the east of the site. It is thought that the northern part of Over industrial estate has been built on part of this settlement. There are a number of other Roman settlement sites known in the vicinity (*e.g.* MCB9332, 13733, 13073). During the Roman period, the site would have been located on the upland, approximately 1km from the fen edge.
- 1.3.8 Hall mentions that other Roman sites are located immediately to the south of the cropmarks mentioned above. During fieldwalking for the Fenland project, sites found included an area where large quantities of pottery sherds including samian, colour-coated and “Cold Harbour Ware” type were recovered, along with other shelly fabric pottery. Box tile with plaster still attached was also found, indicating a building of some quality was once located there (Hall 1996, 151; TL 38316 68965). Similarly, to the east of site, at Cold Harbour Farm, pottery kilns have been discovered; a large depression and two pits were backfilled with ashy soil containing fragments of fire-bars, kiln wall and pottery (Hall 1969, 151 fig. 84 and Phillips, 1970, 189; TL 39335 69732).
- 1.3.9 Other cropmarks, located directly to the west of the site, were found on satellite images during post-excavation work by the author, although no CHER number can be found attributed to them. A large palaeochannel running north-west to south-east towards the site can be observed, with large rectangular pits (approximately 10m long by 3m wide) and linear marks either side of the channel (TL 37414 69640). These features are

undated, but a Roman date for them can be presumed due to the close proximity to other Roman sites and findspots.

- 1.3.10 Other findspots nearby include a hoard of 50 copper coins, a single silver coin depicting Vespasian and a brooch (CHER 11683), 600m to the north-east of the site.
- 1.3.11 Further afield, Roman findspots and sites are common within the parish. Just over 1.2km to the south-east of site, cropmarks of a possible shrine are recorded (CHER 07718). Roman pottery has been recovered from the area, so the shrine is thought to be of this period. Approximately 1.2km to the north-east of site, a hoard of Roman coins was uncovered in the late 19th century (CHER 00277). The hoard mostly consisted of coins depicting Constantine. At Church Farm House, roughly 1.5km north of site, Roman pottery and a single inhumation were excavated during construction work in the late 1980s (CHER 09836A).
- 1.3.12 Within the wider landscape, the study site is situated within an area rich in Roman settlement, industry and economic activity. Approximately 8km directly to the north of site is Colne Fen – an area investigated during the early 20th century by the likes of Tebbutt (1929) and more recently during excavations prior to mineral extraction (Evans 2013; MCB16969). Within this area numerous Roman settlements have been excavated such as Langdale Hale and 'The Camp Ground' (Evans 2013). These investigations indicated major Roman activity from the 2nd century through to the 4th.
- 1.3.13 Analysis by the Cambridge Archaeology Unit (CAU) indicated that Langdale Hale was a cereal-rich farmstead with significant agricultural production and processing. The nearby Camp Ground evolved to become a mercantile centre with a vibrant economic community and extensive trade links (Evans 2013).
- 1.3.14 Other important features in the landscape relating to the Roman period include Car Dyke Roman Canal; approximately 3km to the east of the study site (CHER05405) and the Roman Small Towns of Duroliponte (Cambridge), 13km to the south-east, Durovigutum (Godmanchester), 13km to the west, Stonea Grange, 19km to the north-east and Durobrivae (Water Newton), 40km to the north-west.
- 1.3.15 The fens and fen-edges during the Roman period were an important and affluent economic area. Theories abound as to the economic and political structure of the area during the period, with some archaeologists and historians theorising that the fens were an Imperial owned territory, with the Car Dyke acting as a territorial boundary between these Imperial lands and the mixed ownership of the fen-edge uplands (Malim 2005). The administrative centre for this possible Imperial estate is thought to be at Stonea Grange, 19km from the subject site, although there is still little evidence to support this assertion.

Saxon to Modern (AD 410-Present)

- 1.3.16 No Saxon remains are recorded nearby. Evidence of medieval and later remains within vicinity of site is sparse. The majority of remains are located within the historic core of the village itself, which is over 1km from the site. Approximately 150m to the north-east, however, a small assemblage of medieval pottery (CHER 07724a) was recovered during fieldwalking within the vicinity of the Roman settlement mentioned in Section 1.3.7 above (CHER 07724).
- 1.3.17 Post-medieval remains have been found to the south-east of site, where a cluster of quarry pits was excavated and recorded during the excavation of the guided busway route (MCB18478).

- 1.3.18 Nearby listed buildings include Over windmill (CHER 03447) and Over Microwave Tower (MCB16574), both approximately 500m to the south-east of site.

1.3.19 Evaluation

- 1.3.20 During July 2009, OA East carried out an evaluation on the land at Norman Way Industrial Estate (House 2009, MCB18588). A total of three trenches were excavated and archaeological features and deposits dating to the Roman period were located across the proposed development area. The majority of activity was concentrated in the northernmost trench where at least two phases of activity were recorded. Charred seeds and other plant remains were abundant in the environmental samples and a small quantity of pottery was recovered from the evaluation.

1.4 Acknowledgements

- 1.4.1 The author would like to thank the developer, Universal Property Ltd., who commissioned and funded the work. The site was visited and monitored by Kasia Gdaniec of the Cambridgeshire County Council Historic Environment Team (CCC HET). The site was managed by Stephen Macaulay. Fieldwork was directed by the author and excavation was undertaken by Emily Abrehart, Alex Cameron, Zoe Clarke, Andy Greef, Toby Knight, Malgorzata Kwiatkowska, Ted Levermore, Chris Swain and Daria Tsybaeva. Site survey was undertaken by the author and David Brown. Initial post-excavation digitising and illustrations were completed by Charlotte Davies and Robin Webb.

2 PROJECT SCOPE

- 2.1.1 This assessment deals with the excavation at Norman Way Industrial Estate only. Results from the 2009 evaluation by OA East will be combined and referred to in the final report.

3 INTERFACES, COMMUNICATIONS AND PROJECT REVIEW

- 3.1.1 The Post-Excavation Assessment has been undertaken principally by Pat Moan (PM) and edited and Quality Assured in-house by Project Manager Stephen Macaulay (SPM) and Post-Excavation editor Rachel Clarke (RC). It will be distributed to the client Universal Property Ltd and Kasia Gdaniec (KG) from CCC HET for comment and approval.
- 3.1.2 Following approval of the Post-Excavation Assessment discussions between PM, SM, EP and KG will take place to organise post-excavation analysis and publication. As a result of this, a Publication Synopsis will be prepared.
- 3.1.3 In addition, following approval of the Post-Excavation Assessment, specialist meetings will be arranged to discuss and timetable the analysis stage of the work. Following these meetings, a post-excavation analysis and publication timetable will be produced.
- 3.1.4 During the post-excavation analysis regular progress reports will be given to KG by SPM or PM.

4 ORIGINAL RESEARCH AIMS AND OBJECTIVES

4.1.1 Original research aims and objectives were outlined in the WSI written by Stephen Macaulay prior to excavation (Macaulay 2014). These are replicated below.

4.2 National Research Objectives (English Heritage 1997)

4.2.1 **RO1:** *Briton into Roman (c.300 BC-AD 200):* Understanding continuity in settlement and land use and social and economic organisation between the Late Iron Age and Romano-British periods: regional variations, complexity and ethnicity.

4.3 Regional Research Objectives

4.3.1 The following aims have been identified in the Regional research Agendas (Going at al 2000) and revised in 2008 (Research & Archaeology Revisited: a revised framework for the East of England EAA Occ. Paper No.24, 2011). In general terms the site will contribute to the over-arching research themes of chronologies & process of change and Landscape & environment.

4.3.2 **RO2:** *Rural settlements and landscape.*

4.3.3 **RO3:** *Process of economic and social change and the development during the late Iron Age and the Iron Age/Roman transition.*

4.3.4 **RO4:** *Investigation of the adoption of an agrarian economy and changing patterns in agricultural production and consumption through full quantification and standardised reporting of environmental remains.*

4.3.5 **RO5:** *Settlement types*

4.3.6 **RO6:** *The agrarian economy*

4.4 Local Research Objectives

4.4.1 The 2009 evaluation identified Roman activity and the investigation and understanding of these remains constitute the research aims of the overall project.

4.4.2 **RO7:** *The characterisation of the form and development history of the settlement:* Evidence of possible structures was revealed during the evaluation. If remains of any occupational evidence or domestic buildings survive, their form and associated artefacts will help to define their function, date, use and any subsequent modifications in form and usage. If evidence of crop or food processing survives (e.g. burnt grain, butchered animal bone) conclusions can be drawn on the type(s) of agricultural regimes that may have been in operation (both domestic and wild).

4.4.3 **RO8:** *The characterisation of the form, date of establishment, subsequent development of the field systems, and their relationship to the settlement:* Field systems (and enclosures) of the Roman period have been revealed by the evaluation.

4.4.4 **RO9:** *The determination of the relationship of the agricultural regime and any associated settlement with the local and regional economy:* Analysis of artefactual and ecofactual material may determine whether the area was a largely self-sufficient farming community or whether it was producing a surplus of either crops or meat for local population centres. Evidence of large-scale crop processing will be sought (suggested from the evaluation), as will evidence of importation of luxury or specialised items such as fine pottery (if present).

- 4.4.5 **R10:** *The creation of a model of land-use and organisation over time:* The evidence from this project will be set within the framework of existing knowledge of the archaeology of the area and will make a valuable contribution to ongoing local research.

5 SUMMARY OF RESULTS

5.1.1 The excavation at Over Industrial Estate has uncovered evidence of settlement and industrial activity dating to the Roman period (Fig. 2). Significant amounts of crop processing waste were recorded in a large number of the later pits on site, and numerous features are interpreted as relating to industrial activity.

5.1.2 Site conditions during excavation were very poor, with the winter water table encountered within 0.4m of the machined level. This made excavation extremely challenging, particularly of the watering holes. These watering holes were eventually augered to provide the depths and profiles.

5.2 Provisional Site Phasing

5.2.1 A total of four periods have been identified: Iron Age, Romano-British, medieval/post-medieval and modern, which are discussed below. The Romano-British period is divided into two sub periods of Early Roman (mid 1st to mid 2nd century) and Later Roman (mid 2nd to 4th century). Spot dates from pottery have been used to date this initial phasing of the site.

5.2.2 The topsoil was a mid greyish brown clayey silt, varying in thickness from 0.1m to the north, to 0.2m to the south. Subsoil was also of a variable thickness across site, from 0.05m to the north and 0.22m to the south.

5.3 Period 1: Iron Age (800BC – AD 43)

5.3.1 A pair of parallel intercutting ditches have tentatively been dated to the Iron Age period (**270** and **272**), along with pits **277**, **287** and **289**. The ditches were aligned north to south, and the pits were located at the northern-most end of the ditches. These features were clearly truncated by the Early Roman features. A single sherd of Iron Age pottery was recovered from one of the ditches.

5.4 Period 2: Romano-British (AD 43 – 410)

5.4.1 The majority of features date to this period, and where possible have been split into early or later Roman sub-periods.

Sub-Period 2.1: Early Roman (Mid 1st century AD – Mid 2nd century AD)

5.4.2 Finds and environmental results suggest activity on site during this period mainly being related to metalworking, with the majority of slag and hammerscale from the site coming from features relating to this period (see Appendix B.4).

5.4.3 At the northern-most end of site were two spreads of hillwash containing Early Roman pottery (308 and 405). One of these layers (308) was truncated by pit cluster **207**.

Boundary Features

5.4.4 A number of boundary ditches were cut, probably forming an enclosure, although not enough of the features were uncovered to interpret their function. Ditch **158 (198, 233 and 386)**, aligned north-north-east to south-south-west, on the westernmost edge of site had a large amount of redeposited fired clay and charcoal within its fill, probably deposited into the top of the ditch following its disuse in the later Roman period. Samples taken from these fills contained large amounts of germinated and non-germinated spelt grains. Ditches **32 (246)**, **36** and **256** were aligned west-north-west to

east-south-east and may have formed the original boundary for the settlement to the north-east. These ditches were truncated by later pit groups **267** and **321**.

- 5.4.5 Five heavily truncated and re-cut parallel gullies were located in the central to southern half of site (**235: 237, 241, 243, 248, 279, 281, 283, 306, 309, 311, 313, 315, 317, and 319**), and would have formed part of a continuously re-cut boundary sub-dividing the existing enclosure and also aiding drainage from the high ground to the east down to the low ground at the west. The gullies were curved, following a north-east to south-west to an east to west alignment. Though terminating at certain points, these gullies all clearly formed part of the same boundary. These gullies would probably still have been visible and used as a boundary during the later Roman period. A single spelt grain and moderate amounts of charcoal were recovered from samples taken from the gullies.

Pits

- 5.4.6 At the northern end of site, one of the hillwash layers (308) was truncated by pit group **207 (208, 212, 214, 225, 228 and 230)**. This pit group consisted of at least seven intercutting extraction pits. Early Roman pottery, two nails and a single abraded coin dated to the late 3rd century were recovered from the fills of these pits.
- 5.4.7 A large group of five intercutting pits (**267: 109, 113, 258, 264, 267, 291 and 292**) was located on the northern limit of the possible enclosure, and truncated a significant length of ditch (**36**). This group of possible extraction pits is clearly truncated by a later group of pits (**321**; Phase 2.2), and the uppermost fill consisted of dark clayey crop processing waste backfill, indicating a slight hollow still survived during the later Roman period when crop processing was taking place.
- 5.4.8 Similarly, adjacent to the western arm of the enclosure ditch (**158**), was a small group of pits (**148, 153, 160 and 190**, Plate 1, Fig. 3: Section 29). These features all had characteristics that would indicate an industrial function; perhaps some form of tank. These features were backfilled with small amounts of crop processing waste material and redeposited natural clays. This group was truncated by a large pit (**138**) to the east.
- 5.4.9 On the southern boundary of site directly east of ditches **270** and **272** was pit **392**. This elongated pit has an unclear function and contained a small assemblage of 2nd century pottery.

Industrial Features

- 5.4.10 A group of pits and postholes to the south of gullies **235** generally appear to have an industrial use, although no clear *in-situ* burning was seen (Pit group **431**: Fig. 2). The nature of the backfill of the pits and presence of slag indicate that they clearly had some form of industrial function (*e.g.* pits **96** and **132**). Environmental samples taken from this group recovered moderate amounts of spelt chaff with a component of bromes. The smaller assemblages may be indicative of accumulations around posts, suggesting there may have been a structure enclosing these features, although no clear plan can be discerned from the few postholes found.
- 5.4.11 This pit group was partially enclosed to the north by a possible windbreak (**408 416 418**), which was represented by a curvilinear gully with a flat bottomed V-shape profile (Plate 2). This feature presumably formed protection from the wind during activity in the area. Similarly, a number of postholes (**121, 126, 128 and 423**) were in close proximity to the features and may relate to a structure. A moderate assemblage of germinated barley and spelt grains were recovered from these features.
- 5.4.12 A quantity of slag and hammerscale was recovered from this group of pits and the windbreak, suggesting nearby metalworking (see Appendix B.4).

5.4.13 *Sub-Period 2.2: Later Roman (Mid 2nd century AD to 4th century AD)*

- 5.4.14 The most intensive activity related to possible malting and other industrial activity within the vicinity. A number of large pits and waterholes were dug and backfilled in quick succession. The backfills of these pits often consisted of dark organic layers of crop processing waste (CPW), which was often sealed by layers of redeposited natural. The CPW rich fills contained large amounts of chaff, spelt and weed seeds, with many of the seeds having evidence of germination. These fills were regularly deposited into more than one pit cut (e.g. see Plates 3 & 4) indicating the features were open and backfilled at the same time.
- 5.4.15 Metalworking was possibly still being undertaken during this phase, particularly near pit group **430**, where large amounts of hammerscale were recovered from samples. It is possible the CPW was being used as fuel for smithing activity (see Appendix D.3).

Pits

- 5.4.16 Truncating the corner of the Early Roman enclosure ditches was a large group of intercutting pits and watering holes (Pit group **321**) This group consisted of watering hole **321** and pits **137 138 174 325 346** and **362** (Figs 3 & 4, sections 31 & 58). The cluster of features appear to have been cut in very quick succession, with certain pits still being partially open when others were cut. All of the pits were then backfilled at the same point in time – probably with nearby midden material related to the industrial activity. The fills of all these pits were extremely organic, with laminations of crop processing waste and deposits of natural clays and some of the CPW backfills being up to 0.6m thick (Figs 3 & 4, Plates 3 & 4). The deepest watering hole was augered to a maximum depth of 2.2m. Pottery from these features varied in date between the mid to late 2nd century to the 4th century. The environmental results from these pits indicated that they all held water during the period they were open, with seeds of plants such as duckweed being found regularly.
- 5.4.17 Crop processing spread 357 (404) was an area of dark organic material located on the north-eastern side of pit group **321**. This layer was augered down to 1.5m and clearly formed part of the nearby pit group. This area was sampled in a grid pattern to allow for spatial analysis of the charred plant remains. The results of the environmental samples were unfortunately not of high enough quality to give much data for spatial analysis, with most samples being generally similar in size and quality.
- 5.4.18 Another large watering hole (**118**, same as **394**) was located 7m to the south of pit cluster **321**. This sub-rectangular feature was 2.2m in depth and measured 15m long and 5.5m wide. The fills were not as organic as the other pits in the area, but fired clay and amounts of charcoal in the slump fills indicate industrial activity was taking place within the area when the waterhole was in use. A Sestertius of Faustina the younger, broadly dated to AD 161-175, was recovered from this feature along with a large variety of pottery ranging in date from the middle of the 1st century through to the 4th. Environmental remains including waterlogged seeds of plants expected to be growing on scrub-land or in hedgerows, such as burdock and bramble. Hemlock and fen sedge were also recovered, indicating the ground around the feature would have been very wet. This watering hole clearly post-dated the nearby windbreak and other industrial features directly to the south.

Industrial Features

- 5.4.19 Feature **368** (Plate 5, Fig. 4 section 62) was cut through the top of pit **362** (part of pit group **321**), and consisted of a sub-rectangular pit, with a base sloping down from west to east. The shape of this small feature would suggest an oven with flue, although

again no *in-situ* burning was seen. The feature had been backfilled with redeposited natural clays, mixed with numerous flecks of baked clay. A dump of pottery was found on the western edge of the feature (pottery dump 58), possibly within the remnants of a flue. This pottery dates to the 2nd century, although this does not fit with the stratigraphic sequence as the pit cuts through features with well-stratified 4th century pottery. Further analysis will be required to understand how this may have occurred.

- 5.4.20 A large group of intercutting pits (**67**: Plates 6 & 7, Fig. 5 sections 13, 15 and 16) was located 2m to the south-east of pit group **321**, within the northern part of the enclosure. This pit group has an unclear function, though an industrial use can be inferred from the shape of the cuts and character of the backfills. The lower fills consisted of puddling clays along with deposits of crop processing waste, and the entire group of features was sealed with a redeposited natural clay measuring 0.42m thick. A large assemblage of fired clay was recovered from this deposit – many fragments having grain impressions on them. The environmental samples from this group also noted a large amount of duckweed, indicating the feature held water whilst open, which may be indicative of its function – possibly as a form of tank.
- 5.4.21 Possible postholes (**6** and **61**) were located on the north-west and south-east corners of pit group **67**, though they clearly cut the upper clay capping of the pit group and so are unlikely to have been contemporary.
- 5.4.22 A group of features 8m to the south of pit group **321** appear to be more industrial related features (Pit Group **430**; Fig. 2). Pit **29** was abutted by two pits or postholes (**26** and **31**), and the shape in plan would be indicative of a small corn drier, though again, no *in-situ* burning was found. Directly to the east of this possible corn drier were four more pits (**20**, **38**, **40** & **54**). These features were also backfilled with organic material, and a hearth bottom was recovered from pit **54**. Hammerscale was recovered from all pits within the group, suggesting nearby metalworking. Due to the metalworking in the earlier Roman phase however, it is possible that these residues have been reworked into later deposits. The numerous spelt grains recovered from samples taken from these features may represent the burnt remains retained in the corn drier after the final firing.
- 5.4.23 Approximately 5m to the west of pit group **430** was two pits and two postholes (**13**, **17**, **19** and **429**). These pits probably also formed some kind of corn drier, with postholes either end that formed a superstructure above the pits. Environmental remains from these features support this idea (Appendix D.3), with abundant spelt glumes being recovered. Similarly a moderate amount of hammerscale was recovered from the samples.
- 5.4.24 Of note is an open area between pit group **67** and the industrial features to the south (pit group **430**). This area measured approximately 8m long and 7.5m wide. It is room enough for a work area or structure, possibly for metalworking, of which no trace has survived within the archaeological record.

5.5 Period 3: Medieval to Post-Medieval (AD 1066 – 1700)

- 5.5.1 A total of five truncated furrows were recorded on site, on a north-north-east to south-south-west alignment. No finds were recovered from the features, but they are presumed to be medieval or post-medieval in date. These furrows were extremely truncated. Where they did survive, they had a maximum depth of 0.08m.
- 5.5.2 An area of what appeared to be plough scarring was also recorded on the same alignment as the furrows and covered the central area of the site. A single coin (SF6) was recovered from this truncation, dating to 1732.

5.6 Period 4: Modern (AD 1700 to present)

- 5.6.1 A total of two modern drain pipe cuts on a north-west to south-east alignment were recorded on site, truncating features from all other periods. A small amount of modern disturbance was also recorded at the northern end of site – possibly related to the partial stripping of the site during the construction of the adjacent industrial estate.

6 FACTUAL DATA AND ASSESSMENT OF ARCHAEOLOGICAL POTENTIAL

6.1 Stratigraphic and Structural Data

The Excavation Record

- 6.1.1 All hand written records have been collated and checked for internal consistency, and the site records have been transcribed onto an MS Access Database. Contexts will be assigned to a phase based on their stratigraphic and spatial relationships with dating provided where possible by the artefactual evidence. The site plans and all relevant sections have been digitised in QGIS and Adobe Illustrator. The quantification list of excavation records have been recorded in Table 1.

Type	Quantity
Context Registers	15
Context Numbers	429
Plans	48
Section Registers	2
Sections	71
Environmental Registers	20
Black and White prints	36
Digital Photographs	348

Table 1: Quantification of site records

Finds and Environmental Quantification

- 6.1.2 All finds have been washed, quantified, and bagged or boxed. Total quantities of the main finds categories by period are listed in Table 2. The totals refer to the quantity of a given material in all features assigned to a specific period, including residual and intrusive material.

Period	Pottery (kg)	Animal Bone (kg)	Metalwork Debris (kg)	Fired Clay (kg)	Worked Stone (kg)
Iron Age	0.029	0.004	-	-	-
Romano-British	16.283	5.9	1.924	17.703	23.837
Medieval to Post-medieval	-	0.112	-	-	-

Table 2: Finds Quantification

- 6.1.3 Environmental bulk samples were taken from features across the site to aid the retrieval of plant remains and provide information on the palaeoenvironment. Attention was given to all deposits where preservation of ecofacts was apparent. Grid sampling was undertaken over approximately 10 square metres of the crop processing waste deposit, and column samples were taken through two sections of the watering holes, with samples being separated by fill, to give spatial data that can be analysed during post-excavation.

Sample type	Ditch	Pit	Watering Hole	Posthole	Total
Bulk	7	51	5	2	65
Grid	-	9	-	-	9
Column (by Spit)	-	11	14	-	21

Table 3: Environmental Samples

Range and Variety

- 6.1.4 Features consisted of ditches, pits, watering holes and postholes. No definite structures have been identified, with all activity relating to edge of settlement industrial activity. The ditches represent Early Roman field boundaries, possibly forming an enclosure. The pits were of varied function with a number of watering holes and other features interpreted as having an industrial use. Deposits within Early Roman features were generally secondary silting clays, with Late Roman features often containing large quantities of crop processing waste.

Condition

- 6.1.5 The northern half of the site was truncated, presumably during construction of the industrial estate. Very little topsoil or subsoil cover was observed in the area, indicating truncation of features was likely. The southern half of the site had a good cover of topsoil and subsoil, with minimal truncation. The waterlogging of features helped with preservation of some plant remains, particularly in the watering holes, though made excavation extremely challenging. Because of this high water table, deeper features could not be hand excavated to their full depth and had to be augered.

6.2 Documentary Research

- 6.2.1 The available documentary and cartographic evidence will be consulted where appropriate, to place the site into its context within the landscape.

6.3 Artefact Summaries

Pottery

Summary

- 6.3.1 A total of 691 fragments of pottery were recovered, weighing 16283g. The majority of pottery was recovered from the pit clusters, with lesser amounts coming from the other features. The assemblage is primarily of local origin with dates ranging from the mid 1st to early/mid 2nd century AD and continuing into the later Roman period (3rd and 4th centuries). It is largely a utilitarian assemblage, although some imported finewares and traded specialist wares are also present. The assemblage can be stated to be typical of the type of pottery waste generated by a Romano-British fenland farmstead

Statement of Potential

- 6.3.2 Further detailed analysis of the fabrics and forms of the pottery recovered from the watering holes and placing them within the context of their archaeological data will enable this assemblage to contribute to the interpretation of the site within its local and regional context.

Metalwork

Summary

- 6.3.3 A single copper strip (SF50) was recovered from context 50 and has been identified as probably being a brooch pin.
- 6.3.4 Eight fragments of iron were also recovered, with six of these being nails along with a single fragment of an iron blade (SF17). The final metal object was an amorphous, unidentifiable lump of iron.

Statement of Potential

- 6.3.5 The metal artefacts are deemed to have little potential for contributing to further analysis of the site, though with a small amount of further work, identifying the nails use, e.g. structures associated with the work taking place on site may be possible..

Coins

Summary

- 6.3.6 Three coins were recovered of which two are Roman in date and the third is a halfpenny of George II from 1732. The earlier Roman coin (SF12) is a Sestertius of Faustina the younger, broadly dated to AD 161-175. The second Roman coin (SF8) is only identifiable as a radiate of the later 3rd century.

Statement of Potential

- 6.3.7 These coins have little to no potential for contributing to analysis of the site.

Metalworking Debris

Summary

- 6.3.8 A small assemblage of 36 pieces of metalworking debris (MWD), weighing 2282g was recovered. The majority of the assemblage comprises pieces of smithing slag including a possible hearth bottom along with pieces of vitrified hearth lining. A moderate amount of hammerscale was also recovered from the environmental samples taken on site.

Statement of Potential

- 6.3.9 It is likely that the debris represents metalworking in the Roman period, although as this assemblage is small and widely dispersed through features across site it has little research potential.

Bone Artefact

Summary

- 6.3.10 A single fragment of a worked bone pin was recovered. The bone is in good condition, although no diagnostic fragments survive, as only the central part of the shaft was present.

Statement of Potential

- 6.3.11 This single fragment of pin has limited potential for further research.

Worked Stone

Summary

- 6.3.12 A total of 48 pieces of worked stone were recovered, comprising fragments of quern or millstone and a stone roof tile. A total of 43 fragments of lava quern were recovered: all were highly abraded with no diagnostic features. The remaining fragments are of millstone grit, with one piece having a trace of hopper or spindle hole surviving. A single large fragment of millstone was recovered which has an unknown function, possibly being a door jamb.

Statement of Potential

- 6.3.13 This small and fragmented assemblage has limited potential for further research.

Ceramic Building Material

Summary

- 6.3.14 A total of 28 pieces of ceramic building material weighing 4.4kg were recovered from 11 contexts. The Roman assemblage includes six fragments of imbrex and two pieces of flanged tegulae. This assemblage indicates a high status structure with a tiled roof was located somewhere nearby.

Statement of Potential

- 6.3.15 This redeposited assemblage is not in its primary context of deposition nor directly associated with structures, therefore has little research potential.

Baked Clay

Summary

- 6.3.16 A total of 661 pieces of clay weighing 17703g was recovered from 37 contexts. The assemblage comprises daub and lining relating to superstructures for ovens or corn driers. The majority of the assemblage is consistent with debris from the demolition of these structures.

Statement of Potential

- 6.3.17 The lack of association with structures means the assemblage has little research potential.

6.4 Environmental Summaries

Faunal Remains

Summary

- 6.4.1 A total of 6.1kg of faunal remains were recovered from site. Cattle is the dominant species recovered, with smaller numbers of sheep/goat remains and scarce horse and dog remains. Single fragments of pig, bird, fish and frog were also recovered.

Statement of Potential

- 6.4.2 This is a small assemblage with limited potential for further work, though the cattle assemblage can provide body part distribution and ageing data.

Mollusca

Summary

- 6.4.3 A total of 0.227kg of marine shell was recovered. Oyster shell predominated the assemblage, with only a single cockle being recovered.

Statement of Potential

- 6.4.4 This is a small assemblage that has limited potential for further work.

Charred Plant Remains

Summary

- 6.4.5 Environmental samples taken from features on the site contained large amounts of spelt grain and chaff, with many of the grains having signs of germinating. This abundance of crop-processing waste is suggestive of industrial-scale agricultural activity nearby. The germinated grains would indicate spelt malting taking place, which is likely to have been common in the Roman period, although finding evidence for it in the archaeological record is usually tentative, though evidence has been found at Elms Farm, Heybridge, Essex that can be used as a comparative data set (Monckton 2015).

Statement of Potential

- 6.4.6 This assemblage has excellent potential for further study. The remains from the site are of considerable regional and even national importance if the malting of spelt wheat on an industrial scale can be confirmed.

7 UPDATED RESEARCH AIMS AND OBJECTIVES

7.1.1 The original Research aims can be read in Section 4, above. After excavation, some objectives are no longer viable, and reasons why are discussed below. Any aims identified in *Research and Archaeology: A Framework for the Eastern Counties* (EAA Occ. Paper no. 8 and no. 24) are italicised below.

7.2 National Research Objectives

7.2.1 **RO1:** *Briton into Roman (c.300 BC-AD 200):* Understanding continuity in settlement and land use and social and economic organisation between the Late Iron Age and Romano-British periods: regional variations, complexity and ethnicity.

7.2.2 The site at Over has little to contribute to the above objective, as no major continuity between the Late Iron Age and Romano-British period has been identified on site.

7.3 Regional Research Objectives

7.3.1 **RO2:** *Rural settlements and landscape:* Although no settlement evidence was recorded on site, the archaeology found evidently relates to industrial activity on the edge of a settlement. It may also be possible, with further research, to understand how the industrial activity and settlement fit within the fen edge landscape.

7.3.2 **RO3:** *Process of economic and social change and the development during the late Iron Age and the Iron Age/Roman transition:* As no archaeology relating to the Late Iron Age/Romano-British transition was found on site, this research objective cannot be further investigated.

7.3.3 **RO4:** *Investigation of the adoption of an agrarian economy and changing patterns in agricultural production and consumption through full quantification and standardised reporting of environmental remains:* The environmental results from site are outstanding, and further analysis of the remains, and their comparison to other sites will help further understanding of changing patterns in Roman agricultural production and consumption.

7.3.4 **RO5:** *Settlement Types:* Very little evidence of the actual settlement was found on site, although the industrial activity found will possibly help identify the type of settlement located nearby.

7.3.5 **RO6:** *The Agrarian economy:* The evidence of industrial activity on site and the excellent survival of crop processing waste will help further current knowledge of the agrarian economy in the region.

7.4 Local Research Objectives

7.4.1 **RO7:** *The characterisation of the form and development history of the settlement:* As no definite structural remains were found, little more can be said of the development and chronology of the occupation-related areas of the site. Further analysis of the different periods of activity will, however, help characterise the form of the industrial activity and associated features.

7.4.2 **RO8:** *The characterisation of the form, date of establishment, subsequent development of the field systems, and their relationship to the settlement:* The ditches related to enclosure and industry rather than agriculture, thus no further analysis can be undertaken.

- 7.4.3 **RO9:** *The determination of the relationship of the agricultural regime and any associated settlement with the local and regional economy:* The evidence of spelt malting on site is of importance, and further analysis will make it possible to see how the settlement may have related to the regional economy.
- 7.4.4 **R10:** *The creation of a model of land-use and organisation over time:* Further work on phasing and analysis of the extent and longevity of industrial activity on site will be set within the framework of existing knowledge of the archaeology of the area and will make a valuable contribution to ongoing local research.

7.5 New Research Objectives

Regional Research Objectives

- 7.5.1 **RO11:** *Characterisation of activities associated with crop cleaning, malting and storage. The scale and type of these activities provides a direct indication of the type of production (on a subsistence or market economy level):* The site at Over can contribute to this objective, as the evidence of malting is of high quality, and the amount recovered would suggest production for export. Further analysis and comparison to other sites is required (e.g. Tunbridge Lane, Bottisham; Newton 2014, Elms Farm, Heybridge; Monckton 2015).
- 7.5.2 **RO12:** *In the later Roman period, major grain exports from Roman Britain to the Rhineland are referred to in primary sources. Did a disproportionate share of the export burden fall on the East Anglian civitates?:* Though difficult to answer, can analysis of the environmental evidence and comparisons to nearby sites suggest whether the crop processing on site was being undertaken for export by order of the Roman Empire? Or is the processed grain from site being used in the locality? DNA analysis of the grain may help if comparative data can be found from the Rhineland.

8 METHODS STATEMENTS

8.1 Stratigraphic Analysis

- 8.1.1 Contexts, finds and environmental data will be analysed using an MS Access database. The specialist information will be integrated to aid dating and complete more detailed phasing of the site.

8.2 Illustration

- 8.2.1 Report and publication figures will be created in QGIS and Adobe Illustrator. Finds recommended for illustration will be hand drawn, or photographed as appropriate.

8.3 Documentary Research

- 8.3.1 Relevant documentary research will be undertaken where appropriate. Aerial photographs, relevant comparable sites (both local and national) & grey literature along with published and unpublished sources will be consulted.

8.4 Artefactual Analysis

Roman Pottery

- 8.4.1 A detailed analysis of the assemblages from 'crop processing period' on site is required along with a selection for illustration. An archive report suitable for incorporation into any future publication will also need to be produced.

Metalwork

- 8.4.2 This assemblage has been fully recorded though further analysis could identify the use of certain artefacts. A short note would be required for publication briefly describing the assemblage in its regional context. The artefacts are well packaged and no further conservation is required.

Coins

- 8.4.3 This assemblage has been fully recorded and no further work is needed. The coins are well packaged and no further conservation is required.

Metalwork Debris

- 8.4.4 This assemblage has been fully recorded and no further analysis is needed. A short note would be required for publication briefly describing the assemblage in its regional context.

Worked Bone

- 8.4.5 A short note written by a small finds specialist describing the pin would be needed for the final grey literature report.

Worked Stone

- 8.4.6 These artefacts have been fully recorded, though further analysis of the querns and their origin would be advantageous, possibly helping identify trade routes. A short note would be required for publication briefly describing the assemblage in its regional context.

Fired Clay and Ceramic Building Material

- 8.4.7 Further analysis of the grain impressions by an archaeobotanist would help with the interpretation of the features the baked clay came from. A selection of the baked clay should be chosen for illustration.
- 8.4.8 Comparison to CBM found at nearby Roman settlements around Earith would be instructive.
- 8.4.9 A short note for these artefacts would be required for publication briefly describing the assemblage in its regional context and a discussion of the structures the assemblage may have been part of, such as corn driers or malting ovens.

8.5 Ecofactual Analysis

Faunal Remains

- 8.5.1 No further work is required. A short note is required for publication briefly describing the assemblage in its regional context.

Mollusca

- 8.5.2 This assemblage has been fully recorded and no further work is required.

Charred Plant Remains

- 8.5.3 Further investigation is required to characterise the individual assemblage and calculate the grain:chaff:weed seed ratios. Calculating the percentage of germinated grain and coleoptiles and comparing the data to modern reference materials to determine if there is uniformity between assemblages is also needed. Detailed comparison with other sites where there is evidence of large-scale crop-processing waste production and/or evidence of malting would be advantageous and help address research objectives 6, 9, 11 and 12.
- 8.5.4 Similarly, DNA analysis would be advantageous, with the data possibly helping identify strains of grain, though costings will have to be addressed. Similarly, isotope analysis may be advantageous though large datasets would be required from other sites for comparison. Further investigation into both will be done during post-excavation analysis.

9 REPORT WRITING, ARCHIVING AND PUBLICATION

9.1 Report Writing

A final grey literature report will be produced alongside any published article that will be deposited with the Cambridge Historic Environment Record. Tasks associated with the report writing are identified in Table 5.

9.2 Storage and Curation

9.2.1 Excavated material and records will be deposited with, and curated by Cambridgeshire County Council in appropriate county stores under the Site Code OVEINE14 and the county HER code ECB4283. A digital archive will be deposited with OA Library. CCC requires transfer of ownership prior to deposition (see Section 11). During analysis and report preparation, OA East will hold all material and reserves the right to send material for specialist analysis.

9.2.2 The archive will be prepared in accordance with current OA East guidelines, which are based on current national guidelines

9.3 Publication

9.3.1 It is proposed that the results of the project should be published in *Environmental Archaeology: The Journal of Human Palaeoecology*, under the title 'Roman Spelt Malting on an Industrial Scale at Over, Cambridgeshire', by Rachel Fosberry and Pat Moan. A publication proposal will be submitted to the journal in due course.

9.3.2 The publication will concentrate on the analysis of the charred plant assemblage with relation to the research objectives identified in Section 7.

10 RESOURCES AND PROGRAMMING

10.1 Project Team Structure

Name	Initials	Project Role	Organisation
Stephen Macaulay	SPM	Project Manager	OA East
Elizabeth Popescu	EP	Publications Manager	OA East
Rachel Clarke	RC	Editor	OA East
Pat Moan	PM	Project Officer	OA East
Charlotte Davies	CD	Illustrator	OA East
Alice Lyons	AL	Pottery Specialist	OA East
Sarah Percival	SP	CBM, Stone & Slag Specialist	OA East
Rachel Fosberry	RF	Environmental Specialist	OA East
Paul Booth	PB	Metalwork (Coins) Specialist	OA South
Chris Howard-Davis	CHD	Small Finds Specialist	OA North
Lena Strudd	LS	Faunal remains Specialist	OA South
James Fairbairn	JF	Finds Photographer	OA East
Katherine Hamilton	KH	Archives Supervisor	OA East
Terry Brown	TB	DNA Analyst	Manchester Uni.

Table 4: Project Team

10.2 Stages, Products and Tasks

Task No.	Task	Product No.*	Staff	No. Days
Project Management				
1	Project management		SPM	3
2	Team meetings		SPM/PM	1
3	Liaison with relevant staff and specialists, distribution of relevant information and materials		PM	1
Stage 1: Stratigraphic analysis				
4	Integrate ceramic/artefact dating with site matrix	1	PM	1
5	Update database and digital plans/sections to reflect any changes	1	PM	1
6	Finalise site phasing	1	PM	1
7	Add final phasing to database	1	PM	1
Illustration				
8	Prepare draft phase plans, sections and other report figures	1	CD	1
9	Select photographs for inclusion in the full report	1	PM	1
10	Illustration or photography of finds	1	CD/JF	1
Documentary research				
11	Background research	1	PM	5
Artefact studies and specialist reports				
12	Analysis of Pottery, selection for illustration and writing of short note	1	AL	3
13	Analysis of baked clay and selection for illustration	1	RF/SP	2
14	Distribution analysis of Hammerscale	1	RF	2
15	Short notes on finds for full report	1	SP, RF & CHD	2
Environmental Remains				
16	Processing remaining bulk samples & integration into dataset	1	RF	4
17	Writing of final faunal report	1	LS	0.5
18	Processing and analysis of Charred Plant Remains and selection for photography	1	RF	17
19	Photography of charred grains	1	OAS	1
20	DNA analysis of charred grain	1	TB	2
21	Writing of full charred plant remains specialist text and integration of DNA results	1	RF	6

Task No.	Task	Product No.*	Staff	No. Days
Stage 2: Grey Literature Report Writing				
22	Compile group and phase text	1	PM	3
23	Compile overall stratigraphic text and site narrative to form the basis of the full/archive report	1	PM	2
24	Review, collate and standardise results of all final specialist reports and integrate with stratigraphic text and project results	1	PM	2
25	Integrate documentary research	1	PM	1
26	Write historical and archaeological background text	1	PM	1
27	Edit phase and group text	1	PM	3
28	Compile list of illustrations/liaise with illustrators	1	PM	1
29	Write discussion and conclusions	1	PM	3
30	Prepare report figures	1	CD	1
31	Collate/edit captions, bibliography, appendices etc.	1	PM	1
32	Produce draft report	1	PM	1
33	Internal edit	1	EP	2
Stage 3: Publication Writing				
34	Writing of Publication Proposal	1	RF/PM	2
35	Writing of Publication text	1	RF/PM	5
36	Prepare Publication Figures	1	CD	2
37	Internal editing	1	RC/EP	0.5
38	Incorporate internal edits	1	PM	2
39	Final edit	1	EP	1
40	Send to publisher for refereeing	1	EP	0.5
41	Post-refereeing revisions	1	PM/EP	2
42	Copy edit queries	1	PM/EP	1
43	Proof-reading	1	EP	0.5
44	Publication printing costs (£50 pp.) Full costs TBC	1	-	-
Stage 4: Archiving				
45	Compile paper archive		PM/KH	0.5
46	Archive/delete digital photographs		PM/KH	0.5
47	Compile/check material archive		KH	1.5
48	Boxes to be archived: 21		KH	-
49	Transferral of Ownership		SPM	0.5

Table 5: Task List

* See Appendix E for product details and Appendix F for the project risk log.

11 OWNERSHIP

- 11.1.1 All artefactual material recovered will be held in storage by OA East and ownership of all such archaeological finds will be given over to the relevant authority to facilitate future study and ensure proper preservation of all artefacts. In the unlikely event that artefacts of significant monetary value are discovered, and if they are not subject to Treasure Act legislation separate ownership arrangements may be negotiated. It is Oxford Archaeology Ltd's policy, in line with accepted practice, to keep site archives (paper and artefactual) together wherever possible

APPENDIX A. CONTEXT SUMMARY WITH PROVISIONAL PHASING

Context	Cut	Category	Feature Type	Findings	Spot Date	Phase
1		layer	natural		-	-
2		layer	subsoil	Pottery, CBM, animal bone	-	-
3		layer	topsoil		-	-
4	5	fill	pit	Pottery, MWD	MC1-C2	2.1
5		cut	pit		MC1-C2	2.1
6		cut	pit		C2	2.1
7	6	fill	pit		-	2.1
8	6	fill	pit	Pottery	C2	2.1
9		cut	pit		-	2.1
10	9	fill	pit		-	2.1
11	13	fill	pit		-	2.1
12	13	fill	pit	Baked clay	-	2.1
13		cut	pit		-	2.1
14	429	fill	pit		-	2.1
15	17	fill	pit		-	2.1
16	17	fill	pit		-	2.1
17		cut	pit		-	2.1
18	19	fill	pit		-	2.1
19		cut	pit		-	2.1
20		cut	pit		E/MC3	2.2
21	20	fill	pit		-	2.2
22	20	fill	pit	Pottery, baked clay, animal bone, bone pin	E/MC3	2.2
23		cut	pit		MC1-MC2	2.1
24	23	fill	pit	Pottery, MWD	MC1-MC2	2.1
25	26	fill	post hole	Quern (SF1)	-	2.2
26		cut	post hole		-	2.2
27	29	fill	pit	Pottery, baked clay, animal bone, iron nails (SF14 & 15)	E/MC2	2.2
28	29	fill	pit		-	2.2
29		cut	pit		MC1-E/MC2	2.2
30	31	fill	post hole		-	2.2
31		cut	post hole		-	2.2
32		cut	ditch		C1	2.1

33	32	fill	ditch	Pottery	C1	2.1
34	36	fill	ditch	Pottery, baked clay, animal bone	E/MC2	2.1
35	36	fill	ditch	Pottery, MWD, animal bone	E/MC2	2.1
36		cut	ditch		E/MC2	2.1
37	38	fill	pit	Baked clay		2.2
38		cut	pit			2.2
39	40	fill	pit	Quern (SF2)		2.2
40		cut	pit			2.2
41	45	fill	pit	Baked clay		2.2
42	45	fill	pit			2.2
43	45	fill	pit			2.2
44	45	fill	pit			2.2
45		cut	pit		C2	2.2
46		VOID	VOID			-
47		VOID	VOID			-
48		VOID	VOID			-
49		VOID	VOID			-
50	45	fill	pit	Pottery, copper pin (SF3)	C2	2.2
51		VOID	VOID			-
52	54	fill	pit	Baked clay, MWD		2.2
53	54	fill	pit			2.2
54		cut	pit			2.2
55	54	fill	pit			2.2
56	57	fill	pit			2.2
57		cut	pit			2.2
58	368	fill	pottery dump	Pottery, CBM	E/MC2	2.2
59	292	fill	pit	Pottery, baked clay, MWD	C2-C3	2.1
60	61	fill	ditch	Pottery	LC1-E/MC2	2.1
61		cut	ditch		LC1-E/MC2	2.1
62	253	fill	pit			2.1
63		Master Number	Pit cluster		C2-C3	2.2
64		cut	pit		C2-C3	2.2
65	64	fill	pit	Pottery, baked clay	C2-C3	2.2
66	64	fill	pit			2.2
67		cut	pit		C2-C3	2.2
68	67	fill	pit			2.2
69	67	fill	pit	Baked clay		2.2

70	67	fill	pit	Pottery, baked clay	C2-C3	2.2
71	67	fill	pit			2.2
72	67	fill	pit	Pottery, baked clay, iron blade (SF17), iron nail (SF20)	C2-C3	2.2
73		cut	pit			2.2
74	73	fill	pit			2.2
75		cut	pit			2.2
76	75	fill	pit			2.2
77		cut	pit			2.2
78	77	fill	pit			2.2
79		cut	pit		C2	2.2
80	79	fill	pit	Pottery	C2	2.2
81		cut	pit			2.2
82	81	fill	pit			2.2
83		cut	ditch			2.2
84	83	fill	ditch			2.2
85	64	fill	pit			2.2
86	64	fill	pit			2.2
87		VOID	VOID			
88	77	fill	pit			2.2
89	77	fill	pit			2.2
90	67	fill	pit	Baked clay		2.2
91	67	fill	pit			2.2
92		cut	pit		C2-C3	2.1
93	92	fill	pit	Pottery, baked clay	C2-C3	2.1
94		cut	pit			2.1
95	94	fill	pit	Baked clay		2.1
96		cut	pit			2.1
97	96	fill	pit	Baked clay, MWD, iron nail		2.1
98	99	fill	pit			2.1
99		cut	pit			2.1
100	101	fill	ditch			2.1
101		cut	ditch			2.1
102	106	fill	ditch	Pottery	E/MC2	2.1
103	106	fill	ditch			2.1
104	106	fill	ditch			2.1
105	106	fill	ditch			2.1
106		cut	ditch		E/MC2	2.1

107	291	fill	pit	Stone roof tile, animal bone		2.1
108	109	fill	pit	Pottery, CBM, animal bone	E/MC2	2.1
109		cut	pit		E/MC2	2.1
110	111	fill	ditch	Pottery	M/LC1- E/MC2	2.1
111		cut	ditch		M/LC1 – E/MC2	2.1
112	113	fill	pit			2.1
113		cut	pit			2.1
114	118	fill	watering hole	Pottery, lava quern (SF16), baked clay	MC1-C2	2.2
115	118	fill	watering hole			2.2
116	118	fill	watering hole	Pottery, baked clay, CBM, animal bone	MC3-C4	2.2
117	118	fill	watering hole	Pottery, baked clay, animal bone	LC2-EC4	2.2
118		cut	watering hole		C3	2.2
119	121	fill	pit			2.1
120	121	fill	pit			2.1
121		cut	pit			2.1
122	124	fill	pit			2.1
123	124	fill	pit			2.1
124		cut	pit			2.1
125	126	fill	post hole	animal bone		2.1
126		cut	post hole			2.1
127	128	fill	post hole	Baked clay		2.1
128		cut	post hole			2.1
129	130	fill	post hole			2.1
130		cut	post hole			2.1
131	132	fill	oven?	Pottery, baked clay, MWD	MC1-E/MC2	2.1
132		cut	oven?		MC1-E/MC2	2.1
133	134	fill	pit	MWD		2.1
134		cut	pit			2.1
135	136	fill	post-hole			2.1
136		cut	post hole			2.1
137		cut	pit		MC2-C4	2.2
138		cut	pit		E/MC2	2.2
139	140	fill	pit	Baked clay		2.1
140		cut	pit			2.1
141	197	fill	oven?	Pottery, baked clay	LC1-C4	2.1

142	143	fill	post hole	Baked clay		2.1
143		cut	oven?			2.1
144	138	fill	pit			2.2
145	138	fill	pit			2.2
146	138	fill	pit	Pottery, animal bone	E/MC2	2.2
147	138	fill	pit			2.2
148		cut	pit		MC1-C3	2.1
149	148	fill	pit	Pottery	MC1-C3	2.1
150	148	fill	pit			2.1
151	148	fill	pit			2.1
152	148	fill	pit	Pottery, baked clay	C2-C3	2.1
153		cut	pit		M/LC1- E/MC2	2.1
154	153	fill	pit			2.1
155	153	fill	pit			2.1
156	153	fill	pit			2.1
157	153	fill	pit	Baked clay	M/LC2 – E/MC2	2.1
158		cut	ditch		LC1-C2	2.1
159	158	fill	ditch	Pottery, Lava quem	LC1-C2	2.1
160		cut	pit			2.1
161	160	fill	pit			2.1
162	160	fill	pit	MWD		2.1
163	137	fill	pit	Pottery, animal bone	MC2-C3	2.2
164	137	fill	pit	Pottery, animal bone	C2-C3	2.2
165	137	fill	pit			2.2
166	137	fill	pit	Pottery, baked clay, animal bone	LC1-C4	2.2
167	137	fill	pit			2.2
168	137	fill	pit			2.2
169		cut	pit			2.2
170	169	fill	pit			2.2
171	169	fill	pit			2.2
172	169	fill	pit			2.2
173	169	fill	pit	Baked clay		2.2
174		cut	pit		MC2	2.2
175	174	fill	pit	Pottery, baked clay, CBM	MC2	2.2
176	174	fill	pit			2.2
177	174	fill	pit	CBM		2.2
178	174	fill	pit			2.2

179	174	fill	pit	Baked clay		2.2
180	174	fill	pit	Pottery, baked clay, MWD, CBM, animal bone	MC2	2.2
181	174	fill	pit			2.2
182		cut	pit			2.2
183	182	fill	pit			2.2
184	182	fill	pit			2.2
185		cut	pit		E/MC2	2.2
186	185	fill	pit	Pottery	E/MC2	2.2
187	185	fill	pit			2.2
188	185	fill	pit	Pottery, animal bone	E/MC2	2.2
189	137	fill	pit			2.2
190		cut	pit		MC1-E/MC2	2.1
191	190	fill	pit			2.1
192	190	fill	pit			2.1
193	190	fill	pit	Pottery, baked clay	MC1-E/MC2	2.1
194	190	fill	pit			2.1
195	196	fill	oven/ kiln	Pottery, baked clay	C1-C2	2.1
196		cut	oven / kiln		C1-C2	2.1
197		cut	oven/ kiln		LC1-C4	2.1
198		cut	ditch		C1-C2	2.1
199	198	fill	ditch			2.1
200	198	fill	ditch	Pottery, bake clay	C1-C2	2.1
201	198	fill	ditch	Baked clay		2.1
202	198	fill	ditch			2.1
203	204	fill	pit			2.1
204		cut	pit			2.1
205	206	fill	post hole			2.1
206		cut	post hole			2.1
207		master	pit cluster	Pottery	LC1-E/MC2	2.1
208		cut	pit		LC1-E/MC2	2.1
209	208	fill	pit			2.1
210	208	fill	pit			2.1
211	208	fill	pit	Pottery	LC1-E/MC2	2.1
212		cut	pit		MC1-E/MC2	2.1
213	212	fill	pit	Pottery	MC1-E/MC2	2.1
214		cut	pit		C1-E/MC2	2.1
215	214	fill	pit			2.1
216	214	fill	pit			2.1

217	214	fill	pit	Pottery	C1-E/MC2	2.1
218	214	fill	pit			2.1
219	214	fill	pit			2.1
220		cut	pit			2.1
221	220	fill	pit			2.1
222		cut	pit		M/LC1-E/MC2	2.1
223	222	fill	pit			2.1
224	222	fill	pit	Pottery, iron nail (SF7 & 9), coin (SF8)	M/LC1-E/MC2	2.1
225		cut	pit			2.1
226	225	fill	pit			2.1
227	225	fill	pit			2.1
228		cut	pit			2.1
229	228	fill	pit			2.1
230		cut	pit		MC2	2.1
231	230	fill	pit	Pottery	MC2	2.1
232	233	fill	ditch			2.1
233		cut	ditch		MC1-C4	2.1
234	235	fill	ditch terminus			2.1
235		cut	ditch terminus			2.1
236	237	fill	ditch terminus			2.1
237		cut	ditch terminus			2.1
238		cut	ditch			2.1
239	238	fill	ditch			2.1
240	238	fill	ditch	Iron nail (SF21)		2.1
241		cut	ditch			2.1
242	241	fill	ditch			2.1
243		cut	ditch terminus			2.1
244	243	fill	ditch terminus			2.1
245	246	fill	ditch terminus			2.1
246		cut	ditch			2.1
247	248	fill	ditch terminus	Pottery	C1-C2	2.1
248		cut	ditch terminus		C1-C2	2.1
249	250	fill	ditch terminus	Pottery	LC1-C4	2.1
250		cut	ditch terminus		LC1-C4	2.1
251	252	fill	ditch terminus			2.1
252		cut	ditch terminus			2.1
253		cut	pit			2.1

254	256	fill	ditch terminus			2.1
255	256	fill	ditch			2.1
256		cut	ditch terminus			2.1
257	258	fill	pit			2.1
258		cut	pit			2.1
259		layer				2.1
260	262	fill	pit			2.1
261	262	fill	pit			2.1
262		cut	pit			2.1
263	264	fill	gully terminus			2.1
264		cut	gully terminus			2.1
265	267	fill	pit			2.1
266	267	fill	pit			2.1
267		cut	pit			2.1
268		cut	pit		C2	2.1
269	270	fill	ditch			1
270		cut	ditch			1
271	272	fill	ditch			1
272		cut	ditch			1
273	274	fill	pit	Pottery	C1-EC2	2.1
274		cut	pit		C1-EC2	2.1
275	276	fill	post hole			2.1
276		cut	post hole			2.1
277		cut	pit			1
278	277	fill	pit	animal bone		1
279		cut	ditch		C2-C4	2.1
280	279	fill	ditch	Pottery, baked clay, animal bone	C2-C4	2.1
281		cut	gully			2.1
282	281	fill	gully			2.1
283		cut	gully			2.1
284	283	fill	gully			2.1
285		cut	ditch		C2BC/MC1	1
286	285	fill	ditch	Pottery	C2BC/MC1	1
287		cut	pit			1
288	287	fill	pit			1
289		cut	pit/ post-hole			1
290	289	fill	pit/ post-hole	animal bone, worked stone		1
291		cut	pit			2.1

292		cut	pit		C2-C3	2.1
293	268	fill	pit			2.1
294	268	fill	pit	Pottery, baked clay	C2	2.1
295		cut	pit			2.1
296	295	fill	pit			2.1
297	295	fill	pit			2.1
298		cut	pit			2.1
299	298	fill	pit			2.1
300	298	fill	pit			2.1
301		cut	pit			2.1
302	301	fill	pit			2.1
303	301	fill	pit			2.1
304		cut	ditch/ gully			2.1
305	304	fill	ditch/ gully			2.1
306		cut	ditch			2.1
307	306	fill	ditch			2.1
308		layer	colluvial	Pottery	MC1-EC2	2.1
309		cut	ditch			2.1
310	309	fill	ditch	MWD		2.1
311		cut	ditch			2.1
312	311	fill	ditch	MWD		2.1
313		cut	gully		C2-C3	2.1
314	313	fill	gully	Pottery	C2-C3	2.1
315		cut	ditch		MC1-C4	2.1
316	315	fill	ditch	Pottery	MC1-C4	2.1
317		cut	gully		MC2-MC3	2.1
318	317	fill	gully	Pottery	MC2-MC3	2.1
319		cut	ditch			2.1
320	319	fill	ditch			2.1
321		cut	pit/ water hole		LC2-C4	2.2
322	324	fill	pit			0
323	324	fill	pit			0
324		cut	pit			0
325		cut	pit		E/MC2	2.2
326	325	fill	pit			2.2
327	325	fill	pit			2.2
328	325	fill	pit			2.2
329	325	fill	pit	Pottery, baked clay, animal bone	E/MC2	2.2

330	325	fill	pit			2.2
331	325	fill	pit			2.2
332		cut	oven?			2.2
333	332	fill	oven?			2.2
334	335	fill	ditch			2.1
335		cut	ditch			2.1
336	338	fill	pit			0
337	338	fill	pit	Baked clay		0
338		cut	pit			0
339	321	fill	pit			2.2
340	321	fill	pit			2.2
341	321	fill	pit	animal bone		2.2
342	321	fill	pit			2.2
343	321	fill	pit	Baked clay		2.2
344	321	fill	pit	Baked clay		2.2
345	321	fill	pit			2.2
346		cut	pit			2.2
347	346	fill	pit			2.2
348	346	fill	pit			2.2
349	321	fill	pit	Pottery, baked clay	C2-C3	2.2
350	321	fill	pit			2.2
351	321	fill	pit			2.2
352	321	fill	pit	Pottery, CBM, animal bone	LC2-C3	2.2
353	321	fill	pit	Pottery, animal bone	C3-C4	2.2
354	321	fill	pit	Pottery, quern, CBM, animal bone	C3-C4	2.2
355	356	fill	gully			4
356		cut	gully			4
357		layer	crop processing waste	baked clay		2.2
358		cut	ditch			1
359	358	fill	ditch			1
360		cut	ditch			1
361	360	fill	ditch			1
362		cut	pit		LC1-C4	2.2
363	362	fill	pit	Pottery, CBM, animal bone	C2	2.2
364	362	fill	pit			2.2
365	362	fill	pit	Pottery, baked clay, CBM, animal bone	LC1-C2	2.2
366	362	fill	pit			2.2

367	362	fill	pit	Pottery, stamped samian (SF18), animal bone	E/MC2	2.2
368		cut	oven?		E/MC2	2.2
369	368	fill	oven?			2.2
370	362	fill	pit	Pottery, baked clay, CBM, animal bone	C4	2.2
371		cut	pit			2.2
372	371	fill	pit			2.2
373	371	fill	pit			2.2
374	371	fill	pit			2.2
375		cut	post hole		LC1-C4	2.2
376	375	fill	post hole	Pottery, baked clay, MWD	LC1-C4	2.2
377		cut	pit		E/MC2	2.1
378	377	fill	pit			2.1
379	377	fill	pit	Pottery, MWD	E/MC2	2.1
380		cut	pit			2.1
381	380	fill	pit			2.1
382	380	fill	pit			2.1
383		cut	pit			2.1
384	383	fill	pit			2.1
385	383	fill	pit			2.1
386		cut	ditch		MC1-C2	2.1
387	386	fill	ditch			2.1
388	386	fill	ditch	Pottery, MWD	MC1-C2	2.1
389	386	fill	ditch			2.1
390	233	fill	ditch	Pottery	MC1-C4	2.1
391	233	fill	ditch			2.1
392		cut	ditch terminus		C2	2.1
393	392	fill	ditch terminus	Pottery, baked clay	C2	2.1
394		cut	watering hole		C3	2.2
395	394	fill	watering hole	Animal bone		2.2
396	394	fill	watering hole	Animal bone		2.2
397	394	fill	watering hole			2.2
398	394	fill	watering hole			2.2
399	394	fill	watering hole	Pottery, animal bone	C3	2.2
400	394	fill	watering hole	Pottery, animal bone	E/MC2	2.2
401	394	fill	watering hole	Pottery, animal bone, coin	MC3	2.2
402	394	fill	watering hole			2.2
403	394	fill	watering hole			2.2

404		layer	crop processing waste			2.2
405		cut	test pit			-
406	405	layer	colluvial			2.1
407	405	layer	colluvial	Pottery	MC1-E/MC2	2.1
408		cut	beam slot		MC1-E/MC2	2.1
409	408	fill	beam slot	Pottery, baked clay	MC1-E/MC2	2.1
410		cut	post hole			2.1
411	410	fill	post hole			2.1
412		cut	ditch terminus			2.1
413	412	fill	ditch terminus	Animal bone		2.1
414		cut	ditch			0
415	414	fill	ditch			0
416		cut	windbreak gully			2.1
417	416	fill	windbreak gully			2.1
418		cut	post-pipe			2.1
419	418	fill	post pipe	Pottery, baked clay, MWD	MC1-C4	2.1
420		layer	trample	Pottery	MC3-C4	2.2
421	421	cut	post pipe			2.1
422	421	fill	post pipe			2.1
423		cut	post hole			2.1
424	423	fill	post hole			2.1
425		cut	post hole			2.1
426	425	fill	post hole			2.1
427		cut	post hole			2.1
428	427	fill	post hole			2.1
429		cut	pit			2.1

APPENDIX B. FINDS REPORTS

B.1 Pottery

By Alice Lyons

Introduction and methodology

- B.1.1 An assemblage of Romano-British pottery comprising 691 fragments, weighing 16283g, was recovered. The pottery is in a good but fragmentary condition, with an average sherd weight of 23.6g, and represents a minimum of 195 vessels.
- B.1.2 The majority of the pottery was recovered from a series of pits (42% by weight), also a relatively large dump of pottery (36%), although lesser amounts were also found in other features (Table 6).

Feature	Sherd count	Weight (g)	Weight (%)
Pit	336	6876	42.23
Pottery dump	140	5832	35.82
Watering hole	97	2154	13.23
Ditch	74	680	4.18
Colluvial layer	22	314	1.93
Subsoil	5	159	0.98
Trample	4	115	0.71
Oven or corn drier	6	77	0.47
Post hole	4	32	0.20
Gully	2	23	0.13
Beam slot	1	21	0.12
Grand Total	691	16283	100.00

Table 6: The Roman pottery quantified by feature type

- B.1.3 The pottery was analysed following the guidelines of the Study Group for Roman Pottery (Darling 2004). Both local (Monteil 2013) and national (Tomber and Dore 1998; Tyers 1996) publications were used for referencing the fabrics and forms.
- B.1.4 The total assemblage was studied and a catalogue was prepared (Appendix C). The sherds were examined using a hand lens (x10 magnification) and were divided into broad fabric groups defined on the basis of inclusion types present. Vessel forms (jar, bowl) were also recorded. The sherds were counted and weighed to the nearest whole gram and recorded by context. Decoration, residues and abrasion were also noted.

The Pottery

B.1.5 A total of fourteen broad fabric families were identified during the evaluation of this assemblage (Table 7).

Fabric	Abbreviation	Vessel form	Sherd Count	Weight (g)	Weight (%)
Horningsea coarseware	HORN GW	Storage jar	178	8151	50.06
Sandy grey ware	SGW	Bowl, dish, jar, storage jar	192	3098	19.03
Grey ware	GW	Wide mouthed jar, storage jar	178	1735	10.66
Shell tempered ware	STW	Jar, storage jar	61	1584	9.73
Nene Valley oxidised ware	NVOW	Mortaria	6	568	3.49
Nene Valley colour coat	NVCC	Beaker (including hunt cups and folded types), jar, dish	21	329	2.02
Nene Valley grey ware	NVGW	Dish, jar	7	286	1.76
Central Gaulish samian	SAM CG	Bowl, dish, cup, mortaria	13	175	1.07
Sandy oxidised ware	SOW	Flagon, jar, beaker, dish	14	123	0.75
Sandy coarse ware	SCW	Storage jar	6	116	0.71
Sandy red ware	SREDW	Flagon, jar, bowl, dish, storage jar	11	58	0.36
Grey ware with grog inclusions	GW(GROG)	Storage jar	1	23	0.14
Hadham grey ware	HADGW	Jar/bowl	1	21	0.13
Hadham red ware	HADRW	Jar	1	12	0.07
Grand Total			691	16283	100.00

Table 7: The pottery, listed in descending order of percentage of weight.

Coursewares

B.1.6 The earliest pottery within this assemblage comprises handmade GW(GROG) and SCW storage jar fragments, also various wheelmade GW wide mouthed jar/bowl forms. This style of pottery was introduced to south-east Britain before the Roman conquest (AD43) and is considered transitional between the Iron Age and Roman periods (Thompson 1982). These locally made Romanising vessels were produced in a poorly mixed fabric with common sand inclusions, also sparse flint and small amounts of grog. Moreover the firing process was not consistent with the result that many vessels have a 'sandwiched' appearance (a red core with a grey to off-white surface). The jars were styled with cordons on their necks and with burnished surfaces. Similar vessels have been recorded nearby at Earith (Monteil 2013, 'Romanizing wares', 93).

B.1.7 As the Roman period progressed, by the mid 2nd century, the production of SGW pottery fabric became more standardised and vessels were produced in a hard fired blue-grey fabric with few inclusions or temper other than sand. The SGW fabric was mainly used to produce a limited range of utilitarian jars and storage jars, although a small number of beakers, bowls and dishes were also found. The exact source of this material is not known but a local production centre is thought likely (Monteil 2013, 'Coarse Sandy Wares', 91).

- B.1.8 Also found in a similar fabric, but fired in an oxidising atmosphere, are a small number of SOW and SREDW vessel fragments. Some of this material may have been produced in the Lower Nene valley (Tomber and Dore 1998, 119), others more locally.
- B.1.9 Less common than SGW vessels, although still well represented, are jars and storage jars manufactured from clay containing fossilised shell fragments (STW). The Lower Nene Valley was known to have been a production centre for shell-tempered storage jars (Perrin 1996, 119–20) between the Late Iron Age and 3rd century AD and may have been the source of this material. It is worthy of note, however, that the jars are consistent with local production possibly at Earith on the eastern Fen-edge (Anderson 2013, 311) or another unknown local source (Monteil 2013, 93).
- B.1.10 In the 3rd and 4th centuries AD small amounts of distinctive grey ware vessels were in use, originating in both the Lower Nene Valley (Tyers 1996, 173-175) and Hadham industries (Tyers 1996, 168-169).

Finewares

- B.1.11 Imported finewares comprise fine red slipped table wares, referred to as samian, from Gaul which found their way to this site in small numbers between the late 1st and 2nd centuries (Webster 2005). The assemblage includes a range of cups (Dr33 & 35), bowls (Dr 27, 37 & 38) and a fragment of mortaria (Dr 43 or 45). Only one partial makers' stamps was found.
- B.1.12 Other fine wares found include a small assemblage of Lower Nene Valley vessel fragments (Tyers 1996, 173-175; Tomber and Dore 1998, 118). Beakers of funnel necked type, including hunt cup and folded examples produced around the mid to late 2nd century were found, also some later jar fragments made between the 3rd and 4th centuries AD. A single fragment from a Late Roman Hadham red ware jar was also found (Tyers 1996, 168-169). No Oxfordshire red wares were identified (Tyers 1996, 175-178).

Specialist Wares

- B.1.13 Although no imported amphora (Tyers 1996, 87-89) were found within the assemblage, a relatively large number of locally produced Horningsea storage jars were found. Production of large storage jars took place at Horningsea, only 16km to the south-east of Over, from the late 1st centuries AD (Evans and Macaulay in prep; Monteil 2013, 91). These vessels may have been used to store local produce such as the corn that was possibly dried on site.
- B.1.14 Mortaria, gritted mixing bowls (Tyers 1996 116-135), were also found but only in very small numbers. With the exception of the samian example (see above) all were consistent with production in the Lower Nene Valley: made in a white fabric with reeded rims and iron slag trituration grits (Tyers 1996, 127-129).

Statement of Potential

- B.1.15 This assemblage is primarily of local origin with ceramic vessels in use from the early Roman period (mid 1st to early to mid 2nd century AD) and continuing into later Roman times (3rd and 4th centuries). It is largely a utilitarian pottery assemblage dominated by the presence of jars and storage jars, although some imported finewares and traded specialist wares are also present. All the pottery is fragmentary and none was recovered from deliberately placed deposits (such as burial), rather the pottery has found its way into pits or was dumped as part of the rubbish/manuring disposal process.

B.1.16 The presence of a relatively large amount of ceramic detritus supports the cropmark evidence of a significant rural settlement being located in the immediate vicinity with access to both local and small amounts of traded wares. As this pottery is similar to material previously recorded nearby, it can be confidently stated that it is typical of the type of pottery waste generated by a Romano-British fenland farmstead (Monteil 2013, 95-98).

Recommendations for Further Work

B.1.17 Further detailed analysis of the fabrics and forms of the pottery from the waterholes, and placing the assemblages firmly within the context of their archaeological data, will maximise the possible extraction of useful data. A limited amount of additional work will enable this ceramic assemblage to contribute to the interpretation of the site within its local and regional context.

Task	Detail	Number of days
1	Detailed analysis of the pottery fabrics and forms of waterhole assemblage	1
2	Choose pottery for illustration (8-12 sherds) and write a catalogue	0.50
3	Write an archive report suitable for incorporation into any future publication.	2.00
Total		4.00

B.2 Metalwork

By Chris Howard-Davis

Introduction and Methodology

B.2.1 Every fragment was examined, assigned a preliminary identification and, where possible, date range. An outline database was created, using Microsoft Access 2000 format, and the data recorded (context, small finds number, material, category, type, quantity, condition, completeness, maximum dimensions, outline identification, brief description, and broad date) serve as the basis for the comments below. The state of preservation (condition) was assessed on a broad four point system (namely poor, fair, good, excellent).

Copper Alloy

- B.2.2 There was a single, well-preserved, fragment of copper alloy (Sf 3) from fill 50 of pit **45**. Although this object retains no chronologically distinctive features, it seems most likely to be the pin from a sprung bow brooch, for which the most-likely dating would be Romano-British, although this cannot be stated with complete confidence.
- B.2.3 **Conservation:** the object is in good condition and well-packed. There is no requirement for conservation.
- B.2.4 **Potential:** the object has little or no potential to contribute towards the further analysis of the site.
- B.2.5 **Further work:** no further work is required.

Ironwork

- B.2.6 In all, eight fragments of ironwork were recovered. All are in poor to fair condition, with surfaces obscured by corrosion products, although preliminary identification was possible without x-ray.
- B.2.7 The majority of the iron objects can be identified as hand-forged nails, with single examples coming from fill 27 of pit **29** (Sf 15, Sf 40), fill 72 of pit **67**(Sf 20), fill 97 of pit **96** (Sf 4) and fill 224 of pit **222** (Sf 7, Sf 9). These are effectively undateable. Complete examples are all between 50-60mm in length, and it is quite likely that the complete nail from context 97 was extracted from wood before deposition, perhaps suggesting demolition and the recycling of wood, although it must be stressed that the evidence is scant.
- B.2.8 A triangular fragment from fill 72 of pit **67** (Sf 17) is probably from a fairly substantial blade. Its upward-curving back suggests a Late Iron Age or Roman date, one obvious identification being a cleaver of Manning's type 1b (Manning 1985), thought to have developed from an Iron Age antecedent. A final fragment, Sf 21 from context 240, is now an amorphous lump and is unlikely ever to be identified.
- B.2.9 **Conservation:** the objects are in good condition and well-packed. There is no requirement for conservation, but x-radiography may be required (no more than 2 plates).
- B.2.10 **Potential:** the objects have little or no potential to contribute towards the further analysis of the site.

B.2.11 **Further work:** Further work to analyse the nails and their possible use (structural or for box fittings) would be of use.

B.3 Coins

By Paul Booth

- B.3.1 There are three coins from the site, two of Roman date from secured contexts and a halfpenny of George II dating to 1732 from post-medieval plough scarring.
- B.3.2 The earlier Roman coin (SF7, fill 224 of pit **222**) is a Sestertius of Faustina the younger, struck under Marcus Aurelius, dated broadly AD 161-175. This coin is quite heavily worn (which precludes distinction between two closely-related RIC types) and could easily have been in circulation in the 3rd century AD.
- B.3.3 The second Roman coin is a radiate of the later 3rd century (SF12, fill 401 of watering hole **394**). It is in poor condition with no extant legends. Consequently a date range of *c* AD 260-296 has been assigned. In view of its condition it is not possible to determine if the coin was an irregular issue, though this is quite possible. In this case a narrower date range of *c* AD 275-296 is likely.
- B.3.4 The coins are deemed at having little potential for contributing to the understanding of the site and no further work is required.

B.4 Metalwork Debris

Slag

By Sarah Percival

Introduction and Methodology

- B.4.1 A small assemblage of 36 pieces of metalworking debris (MWD) weighing 2,282g was recovered. The majority of the assemblage comprises pieces of smithing slag including a possible hearth bottom and pieces of vitrified hearth lining.
- B.4.2 The complete assemblage was recorded by type and context. The MWD was scanned with a magnet to establish the presence of iron and was counted and weighed to the nearest whole gramme.

Feature	Context	Feature type	Type	Description	Quantity	Weight (g)
5	4	Pit	Miscellaneous	Vitrified surface	1	7
23	24	Pit	Lining	Vitrified surface	1	3
36	35	Ditch	Smithing slag	Iron	8	174
54	52	Pit	Smithing slag	Iron	1	486
96	97	Pit	Miscellaneous	Iron	2	75
132	131	Oven/ corn drier	Smithing slag	Iron	1	139
134	133	Post hole	Miscellaneous	Vitrified surface	2	2
160	162	Pit	Smithing slag	Hearth bottom	1	435
174	180	Pit	Smithing slag	Iron	1	7
292	59	Pit	Lining	Vitrified surface	2	33
309	310	Ditch	Smithing slag	Iron	5	370
311	312	Ditch	Miscellaneous	Vitrified surface	1	3
375	376	Post hole	Smithing slag	Iron	3	384
377	379	Pit	Miscellaneous	Iron	1	15
386	388	Ditch	Smithing slag	Iron	5	82
418	419	Post pipe	Lining	Vitrified surface	1	67
Total					36	2282

Table 8: Quantity and weight of metalworking debris by features

Assemblage Description

- B.4.3 The assemblage comprises 36 pieces of iron smithing debris including 25 pieces of smithing slag weighing 2,077g and characterised by vacuous rusty conglomerated lumps sometimes with pebbles or other debris adhering. These include one large curved fragment from the fill of pit **160**, which is from a smithing hearth bottom.
- B.4.4 Four pieces weighing 103g are formed of sandy highly baked clay with vitrified surfaces derived from the smithing hearth or its lining.
- B.4.5 The remaining seven fragments are of miscellaneous ferrous slag.

Discussion

- B.4.6 No tapping slag indicative of iron smelting was found with only debris characteristic of smithing being present. This suggests that iron working rather than iron production was taking place at the site, probably producing or repairing iron implements required for agricultural work.
- B.4.7 **Potential:** The assemblage is small and widely dispersed through pits and ditches across the site. It is likely that the debris represents metalworking in the Roman period but no structural evidence of smithing was found.
- B.4.8 **Further Work:** A short note is required for publication briefly describing the assemblage in its regional context.

Hammerscale

By Rachel Fosberry

Methodology and Results

- B.4.9 Each of the bulk sample residues were scanned with a magnet for the retrieval of hammerscale. Both flake hammerscale and magnetic spheroids were retrieved from several of the Period 2.1 and 2.2 samples. By plotting the distribution of the hammerscale onto the site plan it becomes apparent that there is an area of intense smithing activity within the Period 2.2 pit group 430 features. There is also a significant amount of hammerscale in Period 2.1 ditch **36** and also in ditch **238**. Hammerscale is notably absent in pit group **431** in the south-west corner of the site, from which slag was recovered.
- B.4.10 Hammerscale in the form of flakes and spheroids of iron oxide is produced during the repeated heating and hammering processes of iron smithing and is likely to become incorporated into the fills of features in the near vicinity of the blacksmithing anvil. Lumps of slag are more likely to be removed from the immediate area but are unlikely to travel far as they are usually heavy. Metalworking processes require huge quantities of fuel and crop processing waste would have been ideal for this purpose.
- B.4.11 **Potential:** It is likely that the debris represents metal working in the Roman period, though has little research potential beyond the distribution study across the site.
- B.4.12 **Further Work:** Analysis of the distribution of hammerscale across site and integration of hammerscale recovered from further processed samples will need to be integrated into the dataset.

Cut No.	Context No.	Sample No.	Phase	Date Range	Feature Type	Flake hammerscale	Spheroidal hammerscale
338	337	47	0		Pit	+	+
238	240	44	2.1		Ditch	+++++	+
36	34	5	2.1	E/MC2	Ditch	+++	+
109	107	23	2.1		Pit	+++	0
292	59	16	2.1	C2-C3	layer	+++	+
6	8	1	2.1	C2	Pit	++	+
158	159	36	2.1	LC1-C2	Ditch	++	0
17	14	2	2.1		Pit	+	0
17	14	41	2.1		Pit	+	0
36	35	6	2.1	E/MC2	Ditch	+	0
92	93	21	2.1	MC1-C4	Pit	+	0
96	97	22	2.1		Pit	+	0
121	119	26	2.1		Pit	+	0
196	141	29	2.1	LC1-C4	Pit	+	+
418	419	97	2.1	MC1-C4	Post pipe	+	0
54	52	13	2.2		Pit	+++++	++
38	37	12	2.2		Pit	+++	0
54	52	43	2.2		Pit	+++	0
371	373	90	2.2		Pit	+++	+
20	22	3	2.2	E/MC3	Pit	++	+
29	27	4	2.2	MC1-E/MC2	Pit	++	0
45	41	14	2.2		Pit	+	0
64	65	20	2.2	C2-C3	Pit	+	+
64	72	28	2.2	C2-C3	Pit	+	+
64	65	17	2.2	C2-C3	Pit	+	0
67	90	31	2.2		Pit	+	+
137	163	34	2.2	C2-C4	Pit	+	+
148	152	39	2.2	C2-C3	Pit	+	0
174	175	80	2.2	MC2	Pit	+	0
174	175	83	2.2	MC2	Pit	+	0
174	175	85	2.2	MC2	Pit	+	0
174	175	86	2.2	MC2	Pit	+	0
321	349	49	2.2	C2-C3	Pit	+	+
321	353	48	2.2	C3-C4	Pit	+	0
321	341	50	2.2		Pit	+	0
321	353	66	2.2	C3-C4	Pit	+	0
321	352	67	2.2	LC2-C3	Pit	+	0
321	349	68	2.2	C2-C3	Pit	+	0
321	349	70	2.2	C2-C3	Pit	+	0

Cut No.	Context No.	Sample No.	Phase	Date Range	Feature Type	Flake hammerscale	Spheroidal hammerscale
362	366	62	2.2		Pit	+	0
362	363	63	2.2	C2	Pit	+	0
394	399	93	2.2	C3	Watering Hole	+	+
404	357	53	2.2		CPW spread	+	+
404	357	55	2.2		CPW spread	+	0

Table 9: Hammerscale quantification by phase

B.5 Bone Artefact

By Pat Moan

- B.5.1 A single fragment of a bone pin was recovered from fill 22 of pit **20**. The fragment is 67mm long and 8mm in diameter at the thickest point. The shaft is faceted in section and the tip and head do not survive. The fragment is similar to the type 5 bone pins recovered from Colchester excavations and probably dates to the 4th century (Crummy 1983, 24).
- B.5.2 **Potential:** This single fragment has limited potential for further research.
- B.5.3 **Further Work:** A short note is required for the final report, briefly describing the artefact.

B.6 Worked Stone

By Sarah Percival

Introduction and Methodology

B.6.1 A total of 48 pieces of worked stone were recovered from site. These comprise fragments of quern or millstone and a stone roof tile.

Feature	Context	Feature type	Lithology	Type	Quantity	Weight (g)
26	25	Post hole	Millstone grit	Millstone	1	4816
40	39	Pit	Millstone grit	Millstone	1	5720
118	114	Watering hole	Lava	Quern	28	716
158	159	Ditch	Lava	Quern	15	199
290	289	Pit	Cambridge greensand	Uncertain	1	11351
291	107	Pit	Fine micaceous sandstone	Roof tile	1	194
321	354	Pit	Millstone grit	Quern	1	221
Total					47	11866

Table 10: Worked Stone objects recovered from site

B.6.2 A full catalogue was prepared of the total assemblage. Each piece was examined using a hand lens (x20 magnification) and the basic lithology recorded. The pieces were counted and weighed to the nearest whole gram. Type and form were observed. For saddle querns grinding surface, wear angle, thickness, secondary re-use and tooling were recorded. For rotary shape, collar width, collar depth, hopper diameter, hopper shape, hopper depth, handle attachment, handle socket height above grinding surface, handle socket angle, spindle notch and diameter of feed were recorded. Spindle material, use wear, secondary re-use and tooling were also noted. The typological variables were selected to aid identification of the chronology and form of the quern, the petrological examination was undertaken to distinguish possible imports and locate the source of supply of stone to the site. Oxford Archaeology East hold the assemblage and archive until formal deposition.

Querns and Millstones

B.6.3 Fragments of quern or millstone were found in two stone types. Forty-three pieces of lava weighing 915g are too small and abraded to be identified to form comprising only rounded scraps with no surviving surfaces. The lava was found in watering hole **118** (Period 2.2 and ditch **158** (Period 2.1), and had clearly been subject to a high degree of post discard attrition.

B.6.4 The remaining fragments are made of millstone grit. A large fragment weighing 4,816g is 98mm thick with one smooth and one opposing pecked surface. The fragment was found in posthole **26** (Period 2.2) and may have been reused as post packing. A second fragment weighs 5,720g and is 110mm thick again with one smoothed and one pecked surface. Traces of a hopper or spindle hole survive. This piece of stone was found in the

fill of pit **40** (Period 2.2). A third smaller piece of millstone grit weighing 221g from pit **321** (Period 2.2), is 25mm thick with one surviving smoothed surface.

- B.6.5 A single large fragment of stone was recovered from the base of pit **289** (SF11, Period 1). This partially shaped block, probably of Cambridge Greensand, which weighs 11.35kg has two parallel sides, some which appear smoothed, whilst the remaining edges are fresh and show no signs of use wear or working. It is possible the block functioned as a postpad but no evidence for use survives archaeologically.

Roof Tile

- B.6.6 A solitary roof tile fragment 11mm thick made of fine micaceous sandstone was found in pit **291** (Period 2.1).

Discussion

- B.6.7 Millstones or querns were being supplied to the site from two sources, the lava being imported from the Rhineland whilst the millstone grit came from quarries in Derbyshire, both perhaps being transported to the site along the Ouse.
- B.6.8 The presence of stone tile in addition to the ceramic roof tile fragments recovered from the site indicates that buildings with several types of roofing were once present in the environs of the site.
- B.6.9 **Potential:** This small and fragmented assemblage has limited potential for further research.
- B.6.10 **Further Work:** Further analysis of the lava stone and other querns may help identify trade routes linking the site and its settlement to the wider region. A short note would then be required for publication, briefly describing the assemblage in its regional context.

B.7 Ceramic Building Material

By Sarah Percival

Introduction and Methodology

- B.7.1 A total of 28 pieces of ceramic building material weighing 4.4kg were collected from eleven excavated contexts and from unstratified surface collection. Unstratified material forms 7% of the total assemblage. Twenty-four fragments are Roman including tile and roof tile fragments, three fragments are post-Roman and one is modern. The CBM is fragmentary and mostly small and poorly preserved.
- B.7.2 The CBM was counted and weighed by form and fabric and any complete dimensions measured. Abrasion, re-use and burning were also recorded following guidelines laid down by the Archaeological Ceramic Building Materials Group (ACBMG 2002). Terminology follows Brodrigg (1987).

Fabrics

- B.7.3 Seven fabrics were identified (Table 11). Roman fabrics are sandy in a range of pink to orange colours with a mix of grog, clay pellets, chalk/shelly limestone and flint inclusions. Three fragments in yellow vacuous fabric are post-Roman. A single piece of hard fired, fine sandy orange tile is modern.

Fabric Description	Quantity	Weight (g)
Fine pink orange sandy with rare flint and common rounded grog (includes one post Roman).	8	1505
Fine pink orange sandy with rare chalk inclusion	8	1057
Fine orange sandy	7	911
Fine orange sandy with rare chalk inclusion and large flint	1	376
Pale yellow with common sub-rounded vacuoles (post Roman)	3	306
Fine pink orange sandy with rare chalk inclusion, red clay pellets	1	245
Total	28	4400

Table 11: Quantity and weight of CBM by fabric

- B.7.4 The Roman fabrics compare with those identified within the contemporary building material assemblage from Colne Fen, Earith (Appleby 2013). The presence of chalk/shelly limestone within the fabrics suggests that the material was probably made locally utilising the underlying Jurassic clay bedrock.

Forms

- B.7.5 The Roman assemblage includes six fragments of imbrex and two pieces of flanged tegulae. The imbrices are between 17mm and 20mm thick whilst the tegulae are all 20mm thick measured close to the flange. One fragment of tegula has a finger swirled signature and three imbrices have smeared fingertip impressions. The remaining undiagnostic tile fragments are between 13mm and 30mm thick suggesting that they derive from a range of roof tiles and other building material with the thickest perhaps representing wall tiles or bricks.

B.7.6 The post-Roman and modern pieces comprise flat roof tiles fragments with no diagnostic features surviving.

Spotdate	Type	Form	Quantity	Weight (g)
Roman	Roof tile	imbrex	6	1231
		tegula	2	353
	Tile	15	2227	
	Uncertain	1	245	
Post Roman	Roof tile		3	306
Modern	Roof tile		1	38
Total			28	4400

Table 12: Quantity and weight of CBM by form

Deposition

B.7.7 Roman CBM was recovered from four pits, a watering hole and from a dump of Roman pottery in pit **59**. All these features also contained Roman pottery, mostly of mid to late 2nd century date. The post-Roman roof tile fragments came from subsoil. A small piece of modern roof tile was found in fill 354 of pit **321** and is intrusive.

Feature	Context	Feature Type	Feature Date (pot)	Spotdate	Type	Form	Quantity	Weight (g)
0	2	Subsoil	C2(PMED)	Post Roman	Roof tile		3	306
109	108	Pit	E/MC2	Roman	Tile		1	136
118	116	Watering hole	MC3-C4	Roman	Roof tile	Tegula	1	155
					Tile		1	105
174	175	Pit	MC1-E/MC2	Roman	Roof tile	Imbrex	1	113
					Tile		1	89
					Uncertain		1	245
					Roof tile	Imbrex	1	166
						Tegula	1	198
321	352	Pit	LC2-C3	Roman	Roof tile	Imbrex	2	510
			LC2	Modern	Roof tile		1	38
	354		Roman	Roof tile	Imbrex	1	66	
				Tile		2	628	
362	363	Pit	C2	Roman	Tile		1	216
			LC1-C2	Roman	Tile		5	498
			C4	Roman	Tile		1	460
368	58	Pottery dump	E/MC2	Roman	Roof tile	Imbrex	1	376
					Tile		3	95
Total							28	4400

Table 13: Quantity and weight of CBM by feature

Discussion

- B.7.8 The presence of several fragments of flanged tegulae and imbrices indicates a high status structure with a tiled roof somewhere in the vicinity and there is also some suggestion amongst the assemblage of the use of tile for flooring and walls. However all are either reused or discarded and none was found *in situ*, most fragments probably being used as convenient hardcore for backfilling unwanted holes and rubbish pits.
- B.7.9 **Potential:** This redeposited assemblage is not in its primary context of deposition, nor is it directly associated with structures and therefore has little research potential.
- B.7.10 **Further Work:** A short note would be required for publication, briefly describing the assemblage in its regional context. Comparison to CBM found at nearby Roman settlements near Earith (e.g. Langdale Hale and the Camp Ground) would be instructive.

B.8 Baked Clay

By Sarah Percival

Introduction and Methodology

- B.8.1 A total of 661 pieces of clay weighing 18,703g were collected from 37 contexts. The assemblage comprises daub and lining, the majority probably derived from the Roman ovens or corn driers.
- B.8.2 The complete assemblage was analysed and the baked clay recorded by context, grouped by form and fabric, and counted and weighed to the nearest whole gramme. Diameter of withy or round wood impressions was noted where available. Surface treatment and impressions were recorded along with the form and number of surviving surfaces. Fabrics were identified following examination using a x10 hand lens and are classified by major inclusion present. The archive is currently held by Oxford Archaeology East until formal deposition.

Fabrics

- B.8.3 Ten fabrics were identified (Table 14). Five contain pale rounded grog or clay pellets which represent deliberate additions to the clay, perhaps to improve workability and resistance to thermal shock, and mostly represent daub or superstructure. Sandy fabrics with rounded quartz are denser and chunkier and were probably used in construction of hearth and flue lining.

Fabric	Quantity	Weight (g)
Common vegetable inclusions, sparse angular flint >4mm, rounded pale grog or clay pellets	477	12652
Common vegetable inclusions, sparse chalk, rounded pale grog or clay pellets	7	2000
Sandy orange fabric with sparse quartz	136	1795
Pale orange with common small angular chalk	19	979
Chalk sparse sub-rounded, common vegetable inclusions, sparse angular flint >4mm, rounded pale grog or clay pellets	4	469
Large fresh grey and white flint in orange sandy clay	8	360
Fine clay with common grey grog or clay pellets	2	327
Chalk common and sub-rounded; moderate angular quartz >5mm	1	62
Orange and cream poorly mixed with moderate rounded clay pellets	6	54
Pale common vegetable inclusions	1	5
Total	661	18703

Table 14: Quantity and weight of Baked Clay by fabric

Forms

- B.8.4 The assemblage comprises 123 pieces weighing 2,334g which have smoothed exterior surfaces and wattle or rod impressions on the exterior characteristic of daub or superstructure. The diameter of the rod impressions varies, measurable examples being 3mm, 6mm and 8mm in diameter.

B.8.5 A total of thirty-two pieces weighing 3,597g are thick and chunky, sometimes with one smoothed surface and represent hearth or flue lining. The remaining 506 pieces (12,772g) are undiagnostic.

Deposition

B.8.6 Almost all of the assemblage is redeposited in the fills of pits and ditches. The exception is material from possible corn driers/oven **132 (196)**. Two of these features contained modest quantities of baked clay lining used to construct the sub-surface flues or hearths, whilst oven **197** contained daub from demolished superstructures.

Feature	Context	Feature type	Pottery date	Period	Form	Quantity	Weight (g)
0	357	Spread		2.2		2	7
13	12	Pit		2.1		2	22
20	22	Pit	E/MC3	2.2	Lining	4	19
						3	351
29	27	Pit	MC1-E/MC2	2.2		6	54
36	34	Ditch	E/MC2	2.1		10	22
38	37	Pit		2.2		7	62
45	41	Pit		2.2		2	3
54	52	Pit		2.2		2	12
64	65	Pit	C2-C3	2.2		5	291
67	69	Pit		2.2		3	12
	70	Pit	C2-C3		Daub	2	3
	72	Pit	C2-C3		Daub	2	56
	72	Pit	C2-C3			170	7965
	90	Pit	C2-C3			2	36
92	93	Pit	MC1-C4	2.1		45	240
94	95	Pit	MC1-C4	2.1		3	9
96	97	Pit		2.1		23	76
118	114	Watering hole	MC1-C2	2.2		1	29
	116	Watering hole	MC3-C4			7	63
	117	Watering hole	LC2-EC4			9	229
128	127	Post hole		2.1		1	13
132	131	Oven?	MC1-E/MC2	2.1	Lining	3	69
137	166	Pit	LC1-C4	2.2	Daub	4	14
140	139	Pit		2.1	Daub	7	40
143	142	Post hole		2.1	Daub	3	68
	142	Post hole				8	36
148	152	Pit	C2-C3	2.1		3	127
153	157	Pit	M/LC1-E/MC2	2.1		3	63
169	173	Pit		2.2	Daub	3	334

Feature	Context	Feature type	Pot date	Phase	Form	Quantity	Weight (g)
174	175	Pit	MC1-E/MC2	2.2	Lining	4	692
	175	Pit				9	142
	179	Pit	MC1-E/MC2			2	1
	180	Pit	MC1-E/MC2		Daub	1	37
	180	Pit			Lining	14	2271
	180	Pit				81	886
190	193	Pit	MC1-E/MC2	2.1	Daub	4	80
196	195	Oven	C1-C2	2.1	Lining	3	77
196	141	Oven	LC1-C4		Daub	30	428
	141	Oven			10	118	
198	200	Ditch	C1-C2	2.1	Daub	2	10
198	201	Ditch				21	133
268	294	Pit	C2	2.1	Daub	7	41
	294					25	108
279	280	Ditch	C3-C4	2.1		1	6
292	59	Pit	C2-C3	2.1		2	60
321	343	Pit		2.2		1	3
	344	Pit			Daub	4	83
	349	Pit	C2-C3		Lining	4	469
325	329	Pit	E/MC2	2.2		4	75
338	337	Pit		0	Daub	11	237
362	365	Pit	LC1-C2	2.2	Daub	1	8
	370	Pit	LC1-C2		Daub	26	514
	370					19	1430
375	376	Post hole	LC1-C4	2.2		1	10
392	393	Pit	C2	2.1		8	21
408	409	Beam slot	MC1-E/MC2	2.1	Daub	16	381
418	419	Post pipe	MC1-C4	2.1		5	57
Total						661	18703

Table 15: Quantity and weight of Baked Clay by feature

Discussion

B.8.7 The baked clay assemblage is consistent with debris from the demolition of clay built agricultural structures, such as corn driers or ovens. Only a small quantity of the baked clay was found in association with these possible structures, most being distributed in the fills of pits and ditches.

B.8.8 **Potential:** This redeposited assemblage is not in its primary context of deposition, little is directly associated with structures and therefore has little research potential.

B.8.9 **Further Work:** A short note would be required for publication briefly describing the assemblage in its regional context and a discussion of the type of superstructures possibly formed by the assemblage and whether they relate to corn driers or malting ovens.

APPENDIX C. POTTERY CATALOGUE

Key: B=base, C= century, D=decorated body sherd, E=early, F=flange, H= handle, L= late, Mid=mid, R=rim, S=spout, U=undecorated body sherd.
For fabric codes see RB pot Table 2.

Context	Cut	Category	Feature Type	Fabric family	Description	Form	Quantity	Weight (g)	Date
2	0	layer	subsoil	SAM CG	U	MORT	1	4	C2
2	0	layer	subsoil	SGW	UB	JAR	3	128	MC1-C4
2	0	layer	subsoil	SGW	D	SJAR	1	27	MC1-C3
4	5	fill	pit	HORN GW	D	WJAR	1	8	MC1-C2
8	6	fill	pit	GW	R	JAR	2	30	M/LC1-C2
8	6	fill	pit	SAM CG	P	CUP	1	23	C2
8	6	fill	pit	STW	U	SJAR	1	29	MC1-C3
22	20	fill	pit	HORN GW	UB	JAR/SJAR	8	775	C2-C3
22	20	fill	pit	HORN GW	U	SJAR	1	24	C2-C3
22	20	fill	pit	NVCC	U	JAR	1	12	C3-C4
22	20	fill	pit	NVOW	P; SPOUT	MORT	1	458	MC2-MC3
22	20	fill	pit	SAM CG	B	CUP	1	6	C2
22	20	fill	pit	SGW	R	DISH	1	43	LC1-C2
22	20	fill	pit	SGW	UB	JAR	4	47	C2-C3
22	20	fill	pit	STW	U	JAR	1	7	C1-C4
24	23	fill	pit	GW	D	WJAR	1	4	MC1-MC2
27	29	fill	pit	GW	UB	JAR/SJAR	3	25	MC1-E/MC2
33	32	fill	ditch	STW	RU	SJAR	11	119	C1-EC2
33	32	fill	ditch	STW	RUB	WJAR	11	118	C1
34	36	fill	ditch	GW	U	JAR	1	5	MC1-E/MC2
34	36	fill	ditch	GW	RU	JAR/BEAK	5	8	MC1-C2
34	36	fill	ditch	GW	RU	SJAR	4	33	M/LC1-C2
34	36	fill	ditch	SREDW	D	WJAR(MIN)	1	4	MC1-E/MC2

Context	Cut	Category	Feature Type	Fabric family	Description	Form	Quantity	Weight (g)	Date
34	36	fill	ditch	SREDW	U	FLAG	1	4	MC1-C2
34	36	fill	ditch	SREDW	D	SJAR	1	4	MC1-C2
34	36	fill	ditch	WW	U	FLAG/BEAK	1	1	MC1-C2
35	36	fill	ditch	GW	RU	SJAR	6	93	E/MC2
35	36	fill	ditch	GW	D	JAR/BOWL	1	5	E/MC2
35	36	fill	ditch	WW	B	DISH	1	4	MC1-E/MC2
50	45	fill	pit	HORN GW	D	WJAR	1	12	C2
50	45	fill	pit	SOW	D	FLAG/BEAK	1	4	MC1-C2
58	368	fill	pottery dump	GW	U	JAR/BOWL	1	8	MC1-E/MC2
58	368	fill	pottery dump	HORN GW	UDB	SJAR	133	5667	C2-C3
58	368	fill	pottery dump	HORN GW	U	JAR	1	15	C2-C3
58	368	fill	pottery dump	SAM CG	R	DISH	1	3	C2
58	368	fill	pottery dump	STW	U	JAR	2	17	MC1-C2
58	368	fill	pottery dump	STW	U	SJAR	2	122	C1-C3
59	292	fill	pit	HORN GW	R	JAR	1	72	C2-C3
60	61	fill	ditch	GW	U	JAR/BOWL	1	8	C1-E/MC2
60	61	fill	ditch	SGW	U	JAR	1	15	LC1-C4
60	61	fill	ditch	SREDW	U	JAR/BOWL	1	1	C1-E/MC2
65	64	fill	pit	HORN GW	U	JAR	2	40	C2-C3
70	67	fill	pit	HORN GW	D	SJAR	1	54	C2-C3
72	67	fill	pit	SGW	R	JAR	1	12	C2-C3
80	79	fill	pit	HORN GW	D	WJAR	1	7	C2
93	92	fill	pit	SGW	U	JAR	1	1	MC1-C4
102	106	fill	ditch	GW	D	BOWL	3	29	E/MC2
108	109	fill	pit	GW	UB	JAR	6	136	MC1-C2
108	109	fill	pit	GW	RU	NJAR	8	105	M/LC1-E/MC2
108	109	fill	pit	HORN GW	U	SJAR	1	93	C2-C3

Context	Cut	Category	Feature Type	Fabric family	Description	Form	Quantity	Weight (g)	Date
110	111	fill	ditch	GW	RU	BOWL	6	46	M/LC1-E/MC2
114	118	fill	watering hole	GW	RU	JAR/SJAR	9	122	MC1-C2
114	118	fill	watering hole	SREDW	U	FLAG	1	5	MC1-C3
114	118	fill	watering hole	STW	U	SJAR	1	24	C1-C4
116	118	fill	watering hole	NVCC	B	DISH	1	57	C3-C4
116	118	fill	watering hole	NVCC	B	BEAK	1	22	C3-C4
116	118	fill	watering hole	SGW	R	DISH	1	41	MC3-EC5
116	118	fill	watering hole	SGW	RU	JAR	5	66	LC1-C4
116	118	fill	watering hole	SOW	U	JAR/FLAG	1	11	C2-C4
116	118	fill	watering hole	SREDW	U	JAR/BOWL	1	3	MC3-EC5
117	118	fill	watering hole	NVGW	R	DISH	1	96	LC2-EC4
117	118	fill	watering hole	NVOW	R	MORT	3	83	M/LC2-MC4
117	118	fill	watering hole	SGW	U	JAR	5	138	LC1-C4
117	118	fill	watering hole	SGW	R	MJAR	1	34	LC1-C4
117	118	fill	watering hole	STW	R	JAR	1	18	C2-C4
131	132	fill	oven/ corn drier	GW	U	JAR	3	22	C1-E/MC2
131	132	fill	oven/ corn drier	SOW	R	MORT	1	7	MC1-C2
141	197	fill	oven/ corn drier	SGW	B	JAR	1	14	LC1-C4
146	138	fill	pit	GW	RU	WJAR	3	28	MC1-MC2
146	138	fill	pit	GW	U	JAR	3	67	MC1-C2
146	138	fill	pit	HORN GW	RU	SJAR	6	316	C2-C3
146	138	fill	pit	SCW	UDB	SJAR	3	67	MC1-C2
149	148	fill	pit	SOW	U	JAR/FLAG	2	32	MC1-C3
152	148	fill	pit	SGW	D	JAR	1	20	C2-C3
157	153	fill	pit	GW	R	WJAR	1	19	MC1-E/MC2
157	153	fill	pit	GW	RUDB	WJAR	9	135	M/LC1-E/MC2
157	153	fill	pit	SOW	U	JAR	1	3	MC1-C2

Context	Cut	Category	Feature Type	Fabric family	Description	Form	Quantity	Weight (g)	Date
159	158	fill	ditch	GW	U	SJAR	2	16	MC1-C2
159	158	fill	ditch	SGW	U	JAR	1	6	LC1-C4
163	137	fill	pit	SGW	R	DISH	1	27	MC2-C3
164	137	fill	pit	SGW	U	JAR	6	62	C2-C4
166	137	fill	pit	SGW	RU	JAR	3	36	LC1-C4
175	174	fill	pit	GW	UB	SJAR	1	56	MC1-E/MC2
175	174	fill	pit	NVCC	B	BEAK	1	8	MC2-MC3
180	174	fill	pit	GW	U	JAR	1	3	MC1-C2
180	174	fill	pit	GW	P	DISH	6	206	E/MC2
180	174	fill	pit	HORN GW	U	SJAR	5	118	C2-C3
180	174	fill	pit	NVCC	RD	BEAK	2	3	M/LC2
180	174	fill	pit	SCW	U	SJAR	2	15	MC1-E/MC2
180	174	fill	pit	SGW	U	JAR	1	35	MC1-C4
180	174	fill	pit	SGW	U	JAR/BOWL	7	60	LC1-C4
180	174	fill	pit	STW	UB	JAR	6	89	MC1-C4
180	174	fill	pit	STW	U	SJAR	4	129	MC1-C3
186	185	fill	pit	SAM CG	B	DISH/BOWL	1	22	C2
188	185	fill	pit	GW	U	JAR	2	14	MC1-E/MC2
188	185	fill	pit	HORN GW	U	SJAR	1	16	C2-C3
188	185	fill	pit	SGW	RU	NJAR	4	19	LC1-C2
188	185	fill	pit	STW	RU	MJAR	2	49	C2-C4
193	190	fill	pit	GW	U	WJAR	1	12	MC1-E/MC2
193	190	fill	pit	GW	U	WJAR	1	8	MC1-E/MC2
193	190	fill	pit	GW	R	WJAR	1	10	MC1-E/MC2
193	190	fill	pit	SOW	U	JAR	2	21	MC1-C2

Context	Cut	Category	Feature Type	Fabric family	Description	Form	Quantity	Weight (g)	Date
195	196	fill	oven/ corn drier	SCW	U	SJAR	1	34	C1-C2
200	198	fill	ditch	SREDW	D	SJAR	1	20	C1-C2
207	0	master	pit cluster	GW	RU	WJAR	3	39	MC1-MC2
207	0	master	pit cluster	GW	RU	WJAR	22	303	MC1-E/MC2
207	0	master	pit cluster	GW	U	JAR	2	17	MC1-C2
207	0	master	pit cluster	GW	R	SDISH	1	43	LC1-E/MC2
207	0	master	pit cluster	SOW	U	JAR	2	30	MC1-C2
211	208	fill	pit	GW	RUB	JAR/SJAR	10	103	MC1-E/MC2
211	208	fill	pit	SGW	U	JAR	2	52	LC1-C4
211	208	fill	pit	STW	U	JAR	1	6	C1-C2
213	212	fill	pit	GW	U	JAR	1	4	MC1-E/MC2
213	212	fill	pit	GW	UB	JAR/SJAR	9	62	C1-E/MC2
213	212	fill	pit	STW	B	SJAR	1	30	C1-C2
217	214	fill	pit	GW	U	JAR	1	20	C1-E/MC2
224	222	fill	pit	GW	RUB	JAR/SJAR	18	145	MC1-E/MC2
224	222	fill	pit	GW	U	JAR/SJAR	24	130	M/LC1-MC2
224	222	fill	pit	GW	U	JAR/SJAR	16	70	C1-E/MC2
231	230	fill	pit	GW	D	WJAR	1	10	MC1-E/MC2
231	230	fill	pit	GW	U	JAR	1	4	MC1-C2
231	230	fill	pit	GW(GROG)	U	SJAR	1	23	C1-E/MC2
231	230	fill	pit	SGW	B	DISH	1	21	MC2+
231	230	fill	pit	SOW	U	SJAR/AMPH	1	7	MC1-C2
231	230	fill	pit	STW	U	SJAR	1	21	C1-C3
247	248	fill	ditch terminus	SREDW	D	SJAR	1	3	C1-C2
249	250	fill	ditch	SGW	U	JAR	1	10	LC1-C4

Context	Cut	Category	Feature Type	Fabric family	Description	Form	Quantity	Weight (g)	Date
273	274	fill	pit	GW	U	WJAR	9	27	C1-EC2
280	279	fill	ditch	NVCC	B	JAR/BEAK	1	35	C3-C4
280	279	fill	ditch	SREDW	U	BOWL	1	6	C2
286	285	fill	ditch	STW	B	SJAR	1	28	C2BC-ADE/MC1
294	268	fill	pit	SAM CG	U	DISH	1	1	C2
308	0	layer	colluvial	GW	RUDB	JAR/BOWL	18	171	MC1-EC2
314	313	fill	gully	HORN GW	U	SJAR	1	20	C2-C3
316	315	fill	ditch	STW	U	JAR	1	3	MC1-C4
318	317	fill	gully	SAM CG	F	FBOWL	1	3	MC2-MC3
329	325	fill	pit	HORN GW	RUDB	SJAR	3	514	C2-C3
329	325	fill	pit	SAM CG	R	CUP	1	6	MC1-MC2
329	325	fill	pit	SGW	RU	MJAR	6	143	C2-C3
349	321	fill	pit	HORN GW	U	SJAR	1	48	C2-C3
352	321	fill	pit	HADGW	R	JAR/BOWL	1	21	C3-C4
352	321	fill	pit	NVCC	RUDB	BEAK	3	8	MC2-C3
352	321	fill	pit	NVGW	B	DISH	1	44	LC2-EC4
352	321	fill	pit	SGW	UB	JAR/DISH	6	70	LC1-C4
352	321	fill	pit	SOW	U	FLAG	1	3	C2-C3
353	321	fill	pit	HORN GW	D	SJAR	1	19	C3-C4
353	321	fill	pit	NVCC	D	BEAK	3	21	C3-C4
353	321	fill	pit	SGW	U	JAR	1	5	LC1-C4
353	321	fill	pit	SGW	RB	DISH	2	42	C3-C4
354	321	fill	pit	HORN GW	D	SJAR	1	24	C2-C3
354	321	fill	pit	NVGW	R	DISH	1	24	LC2-EC4
354	321	fill	pit	SAM CG	U	BOWL	1	22	C2
354	321	fill	pit	SGW	UB	JAR	7	145	LC1-C4
354	321	fill	pit	SREDW	U	DISH	1	5	MC1-C2
354	321	fill	pit	STW	R	SJAR	1	287	C2-C3

Context	Cut	Category	Feature Type	Fabric family	Description	Form	Quantity	Weight (g)	Date
363	362	fill	pit	HORN GW	D	SJAR	3	56	C2-C3
363	362	fill	pit	SAM CG	U	CUP	1	9	C2
365	362	fill	pit	SGW	U	JAR	1	13	LC1-C2
365	362	fill	pit	SGW	D	SJAR	1	16	C1-C2
367	362	fill	pit	SAM CG	P	DISH	1	65	E/MC2
370	362	fill	pit	HADRW	U	JAR	1	12	C4
370	362	fill	pit	HORN GW	UD	SJAR	5	253	C2-C3
370	362	fill	pit	SGW	RUB	NJAR	5	43	C3-C4
370	362	fill	pit	STW	U	SJAR	1	29	C1-C4
376	375	fill	post hole	SGW	U	JAR/SJAR	1	22	LC1-C4
379	377	fill	pit	SAM CG	D	DBOWL	1	8	E/MC2
388	386	fill	ditch	GW	U	JAR	6	18	MC1-C2
390	233	fill	ditch	SGW	UB	JAR	2	38	MC1-C4
393	392	fill	pit	SGW	U	JAR	3	18	LC1-C4
393	392	fill	pit	SREDW	D	JAR/BOWL	1	3	C2
399	394	fill	watering hole	NVCC	D	BEAK	1	4	MC2-C3
399	394	fill	watering hole	NVCC	B	BEAAK	1	102	C3-C4
399	394	fill	watering hole	NVCC	U	JAR/BEAK	1	9	C3-C4
399	394	fill	watering hole	NVGW	RUB	WJAR	4	122	LC2-EC4
399	394	fill	watering hole	SGW	RUB	JAR	13	147	C2-C4
399	394	fill	watering hole	STW	U	SJAR	3	234	C1-C4
399	394	fill	watering hole	STW	D	SJAR	2	143	C1-C4
400	394	fill	watering hole	SAM CG	U	CUP	1	3	C2
400	394	fill	watering hole	SGW	U	JAR	2	19	E/MC2
401	394	fill	watering hole	NVCC	D	HCUP	2	13	LC2-MC3
401	394	fill	watering hole	NVCC	U	FBEAK	3	35	LC2-C4
401	394	fill	watering hole	NVOW	U	MORT	1	9	MC2-C4
401	394	fill	watering hole	NVOW	U	MORT	1	18	MC2-C4
401	394	fill	watering hole	SGW	R	FDISH	1	102	MC3-EC5

Context	Cut	Category	Feature Type	Fabric family	Description	Form	Quantity	Weight (g)	Date
401	394	fill	watering hole	SGW	R	FDISH	3	81	MC3-EC5
401	394	fill	watering hole	SGW	R	FDISH	1	20	MC3-EC5
401	394	fill	watering hole	SGW	UB	JAR	18	291	C2-C4
401	394	fill	watering hole	STW	U	SJAR	7	82	C1-C4
407	405	layer	colluvial	GW	RUDB	SJAR	4	143	MC1- E/MC2
409	408	fill	beam slot	GW	B	JAR	1	21	MC1- E/MC2
419	418	fill	post pipe	SGW	U	JAR	3	10	MC1-C4
420	0	layer	trample	SGW	R	FDISH	1	38	MC3-EC5
420	0	layer	trample	SGW	U	JAR	2	36	LC1-C4
420	0	layer	trample	SGW	U	SJAR	1	41	LC1-C4

Table 16: Pottery Catalogue

APPENDIX D. ENVIRONMENTAL REPORTS

D.1 Faunal Remains

By Chris Faine

Introduction and Methodology

D.1.1 A total of 6.1kg of faunal material was recovered from the excavation at Over yielding 89 “countable” bones (see Table 17, below). A further 47 & 18 bones were classed as “Large” or “Medium” sized mammal respectively. All bones were collected by hand and from environmental samples. Faunal remains were recovered from a variety of Roman features including pits, layers and ditches. The material is stored in 1 crate measuring 45×30×23cm. The bones are washed and bagged by context.

	Countable Bones	Ageable epiphyses	Ageable mandibles	Measurable bones	Sexable bones
Cattle (<i>Bos</i>)	49	16	0	2	1
Sheep/Goat (<i>Ovis/Capra</i>)	21	10	4	4	0
Pig (<i>Sus scrofa</i>)	1	0	0	0	0
Horse (<i>Equus</i>)	8	4	1	3	0
Dog (<i>Canis familiaris</i>)	5	2	0	0	0
Anuran amphibian (<i>Rana/Bufo</i>)	1	0	0	0	0
Bird	3	2	0	1	0
Fish	1	0	0	0	0
Total:	89	34	5	10	1

Table 17: Quantified Faunal Remains

D.1.2 Faunal material was scanned with all “countable” bones being recorded on a specially written MS Access database. The overall species distribution in terms of fragments (NISP), numbers of ageable mandibles, epiphyses, available measurements and sexable bones are shown in Table 17. The counting system is based on a modified version of the system suggested by Davis (1992) and used by Albarella and Davis (1994). Completeness was assessed in terms of diagnostic zones (Dobney & Reilly, 1988). Ageing was assessed via tooth wear (Grant 1982). Bird, fish and small mammal remains were noted but not identified to species at this stage. Surface preservation levels were noted for each context, with these being rated from 0-5, with 0= Excellent to 5=eroded to the extent the element is unidentifiable.

Discussion

D.1.3 Table 17 shows the information available from the assemblage. Preservation levels are extremely good with all contexts classed as stage 3 or above. Cattle is the dominant taxon with smaller numbers of sheep/goat remains. Horse and dog remains are scarce, with all dog remains coming from fill 401 of watering hole **118 (=394)** (Period 2.2). Single fragments of pig, bird, fish and frog/toad were also recovered. As one would

expect numbers of available epiphyses also follow this pattern, with larger numbers of cattle and sheep epiphyses along with smaller numbers of horse, dog and bird. Few ageable mandibles were recovered; 4 sheep/goat and a single horse example from fill 164 of pit **137**. Measurable bones are scarce, consisting of the four sheep mandibles, 2 cattle elements, 3 horse and a single bird femur from fill 401 (watering hole **118=394**). A single sexable cattle inominate was recovered from context 117 (watering hole **118=394**).

- D.1.4 **Potential:** This is a small assemblage with limited potential for further work, with the cattle assemblage being the only one of sufficient size to allow further investigation of body part distribution and ageing.
- D.1.5 **Further Work:** Further investigation of the cattle assemblage would allow analysis of body part distribution and ageing. A short note would then be required for publication briefly describing the assemblage in its regional context.

D.2 Mollusca

By Alexandra Scard

Introduction and Methodology

D.2.1 A total of 0.227kg of marine shell was recovered from nine different contexts during excavations on the site. The shell was quantified and examined in order to assess the diversity and quantity of the ecofacts, as well as their potential to provide useful data as part of archaeological investigation.

Species	Common name	Habitat	Total weight (Kg)	Total number of contexts
<i>Ostrea edulis</i>	Oyster	Estuarine and shallow coastal water.	0.227	9
<i>Cerastoderma edule</i>	Cockle	Intertidal, salt water.	-	1

Table 18: Quantified shell

- D.2.2 This assemblage is the result of shell collected by hand on site, as well as recovered during the processing of environmental samples.
- D.2.3 Only shell apices were counted in order to obtain the minimum number of individuals (MNI) present for each species, noting that, with regards to most species, each individual originally had two apices. With this in mind, the MNI was arrived at by different means, depending on the species.
- D.2.4 Oysters (*Ostrea edulis*) have a defined left and right valve. The left is more concave in shape and displays radiating ribs on the outer surface. The right is generally more flat and lacks the formerly described ribs, though concentric growth rings are often visible (Winder 2011, 11). To obtain the MNI for oyster shell, the number of left and right valves were counted. The largest number was then taken as the MNI.
- D.2.5 All bivalve shells were unhinged. Apices were noted on shells in seven of the contexts, along with the number of left and right oyster valves. The left and right valves were not observed to be matching in any of the contexts.
- D.2.6 In the case of cockles (*Cerastoderma edule*), it is much more difficult to identify the left and right valves and so the MNI would be calculated by taking the full amount of valves and then halving it. In this instance, only one very small cockle shell was recovered.
- D.2.7 In order to obtain the average size of shell per species, the length of each shell from its apex to the outer edge has been measured, the average measurement per context and species has then been recorded.
- D.2.8 Size is significant with regards to shell, as it can be telling of the age of each species upon harvest. Using oysters as an example, if the oyster shell is found to be of uniform size it would suggest that they were harvested at the same time. The larger the oysters,

the longer they have been left before harvesting. Smaller oysters might suggest a greater need for food and perhaps a period of bad harvest.

D.2.9 Details of interest, for example man-made damage or evidence of parasitic activity, such as polychaete worm infestation (PWI), have also been noted.

Results

D.2.10 With all but one shell recovered being oyster shell, it is this species which predominates the assemblage. Table 18 provides a breakdown of the quantification of the shell recovered.

Context	Cut	Feature Type	Weight (Kg)	Apices/MNI	Species	Oyster left valve	Oyster left valve (kg)	Oyster right valve	Oyster right valve (kg)	Average size (cm)	Comments
69	67	Pit	0.010	1	Oyster	0	0	1	0.010	5	PWI present.
159	158	Ditch	0.023	2	Oyster	2	0.023	0	0	5.2	
163	137	Pit	-	2	Cockle & oyster	?	?	?	?	0.4	One apex of a tiny cockle and one tiny piece of oyster apex.
310	238	Ditch	0.013	1	Oyster	0	?	0	?	-	No apices present, though fragments of shell were observed more from the left valve than the right.
341	321	Watering hole	0.021	1	Oyster	0	0	1	0.021	7.1	A little PWI evident.
354	346	Pit	0.017	1	Oyster	0	0	1	0.017	6	PWI present.
370	362	Pit	0.017	1	Oyster	1	0.017	0	0	5.5	Small amount of evidence for PWI.
399	118	Watering hole	0.048	1	Oyster	1	0.026	1	0.022	7.3	Potential shucking evidence on left valve.
401	118	Watering hole	0.078	2	Oyster	1	0.039	2	0.039	7.8	Shucking and PWI evident on left valve. Right valve contains a mark measuring c.3.3cm long from the outer edge inwards, c.0.4cm wide. Has left mark through to outer side of valve, quite possibly a result of shucking.

Table 19: Shell quantification and comments

D.2.11 Regarding the shell size within the assemblage, the majority of the oyster shell was at least 5cm in length, with the largest valve measuring 9.4cm, from context 401 (see Table 19). On average, the oyster valves reached around 7/7.5cm in size (Winder 2011). This reflects older oysters, suggesting that they had been left to fully grow and develop, before harvesting. This makes consumption all the more probable.

D.2.12 In comparison, the only cockle retrieved was just 0.4cm in size. This, combined with its solitary presence within the assemblage, is evidence that this species was not

harvested or consumed, but simply an unintentional inclusion within the back-fill of pit 137.

- D.2.13 On the whole, the assemblage is moderately preserved, with no clear taphonomic damage. As shown in the table above, some of the oyster valves did present evidence of PWI, as well as a few of the shells showing signs of shucking: the process of prising open an oyster, to obtain the meat for consumption. There was no other evidence of man-made marks, nor any signs of modification for ornamentation.

Discussion

- D.2.14 Oyster shell completely predominates the assemblage, with few other species of marine mollusc being recovered. That being said, the oyster shell assemblage was not recovered in abundance, thus cannot be interpreted as evidence for feasting. Instead, given the size of those shells found and the evidence of shucking (discussed below), one can hypothesise that the oyster was consumed, but that they were sporadically consumed and discarded, both over time and across the site.
- D.2.15 It may be worth noting that, given the sporadic nature of features containing shell, it is possible that the soil used for back-filling the features came from the same location or source. One should also take into account that the features sampled were large pits and ditches and that only a low percentage of the overall feature was sampled, thus a larger quantity of shell may have been deposited originally. Whilst it is known for shell to be discarded in middens, to then be used to manure and cultivate fields, on this occasion there is no clear evidence that this was the case at Over.
- D.2.16 Some of the oyster shell recovered showed evidence of PWI, a common occurrence on marine molluscs such as oysters. Further more, there were, on some occasions, rather clear signs of shucking.
- D.2.17 One of the right valves recovered from 401, a fill within Roman watering hole 118 had a rather noticeable 'cut' measuring c.3.3cm long, from the outer edge inwards and c.0.4cm wide. It was clearly made from the outside of the right valve, as it has left a protruding 'ridge' on the inner side. This is evidence, again, of shucking and is fairly fitting with the mark a knife would make on such an ecofact. This could provide further indication that, whilst not evidence of feasting, the oyster shells were harvested for consumption.

Potential: This assemblage has limited potential to further the understanding of past land use on site.

Further Work: The assemblage has been fully quantified and no further work is required.

D.3 Charred Plant Remains

By Rachel Fosberry

Introduction and Methodology

- D.3.1 Ninety-five bulk samples were taken during excavations at the Norman Way Industrial Estate, Over, Cambridgeshire. Sub-samples processed during the excavation revealed rich assemblages of charred cereal grain, chaff and associated weed seeds and there was substantial evidence of germination of grain suggesting malting was taking place. Consequently grid samples were taken from areas of dark soil with known spelt chaff inclusions to investigate spatial distribution. The purpose of this assessment is to determine whether plant remains are present, their mode of preservation and whether they are of interpretable value with regard to domestic, agricultural and industrial activities, diet, economy and rubbish disposal.
- D.3.2 For this initial assessment a single bucket (approximately ten litres) of each of the samples was processed by tank flotation using modified Siraff-type equipment. The floating component (flot) of the samples was collected in a 0.25mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. A magnet was dragged through each residue fraction for the recovery of magnetic residues prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and an abbreviated list of the recorded remains are presented in Tables 20 and 21. Identification of plant remains is with reference to the *Digital Seed Atlas of the Netherlands* and the authors own reference collection. Nomenclature is according to Stace (1997). Carbonised seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).
- D.3.3 Germinated grain has been identified as such by the absence of coleoptiles and a deep longitudinal groove on the dorsal side of the grain that is caused as the coleoptile (sprout) grows. Many of the grains also have shrunken sides and occasionally the coleoptile is still attached.

Quantification

- D.3.4 For the purpose of this initial assessment, items such as seeds, cereal grains and legumes have been scanned and recorded qualitatively according to the following categories
- # = 1-10, ## = 11-50, ### = 51+ specimens ##### = 100+ specimens
- D.3.5 Items that cannot be easily quantified such as charcoal has been scored for abundance
- + = rare, ++ = moderate, +++ = abundant

D.3.6 Results

Sub-Period 2.1: Early Roman (Mid 1st century AD – Mid 2nd century AD)

- D.3.7 Twenty-six samples were taken from Early Roman deposits; predominantly pits of uncertain function located within a probable enclosure that was defined by ditches and gullies. Possible enclosure ditch **36** (fill 35, sample 6) did not contain preserved plant remains other than scarce spelt glume bases that are likely to be intrusive through bioturbation.
- D.3.8 Samples were taken from three slots excavated in ditch **158**. Sample 36, fill 159 taken from the northernmost part of the ditch contains only sparse charred plant remains. This sample contrasts with the two samples taken from the southern half of the ditch; Sample 40, fill 200 of ditch slot **198** is equivalent to Sample 91, fill 390 of ditch slot **233**. Both samples contain germinated spelt grains and Sample 91 also contains a moderate assemblage of non-germinated spelt grains. It is interesting to note that, in both assemblages, the ratio of grain to chaff is high as this contrasts with most of the other charred plant assemblages at Over. The two ditch slots are relatively close to pit cluster **429** comprised of pits **13**, **17** and **19** and **429**. This group is in the sub Period 2.2 and discussed below (D.3.18). The proportion of germinated grain from this pit cluster and ditch **158** is very low and would not normally be considered to be indicative of malting. Pit **153** (fill 156, Sample 38) adjacent to ditch **158** contains occasional spelt chaff along with a moderate number of brome (*Bromus hordaceus/secalinus*) seeds.
- D.3.9 A group of numerous pits and postholes in the south-west of the site are thought to be of industrial use (pit group **431**; Fig. 2). Samples taken from postholes **126** and **130** do not contain any preserved remains. Six pit fills were sampled; of the larger pits, pit **268** (fill 294, Sample 45) contains an assemblage in which spelt chaff predominates with a moderate component of bromes. Pits **143** (fill 142, Sample 30) and **96** (fill 97, Sample 20) also contain large amounts of spelt chaff, smaller pits **92** and **124** contain only occasional grains and posthole **418** (fill 419, Sample 97) contains occasional grains and chaff but also includes a couple of germinated barley grains. The smaller assemblages may be indicative of accumulations around posts and it is possible that this was an area in which there was a structure of some sort.
- D.3.10 A large group of intercutting pits (**267**) was located on the northern limit of the possible enclosure. A sample taken from fill 107 (Sample 23) of pit **109** contains abundant spelt chaff with a significant weed seed assemblage in which rye-grass (*Lolium* sp.) and bromes predominate. There are also occasional grains of oat (*Avena* sp.) and barley (*Hordeum vulgare*). The only other samples from this pit cluster were taken from uppermost fill 59 and is likely to relate to the later phase of crop processing waste that accumulated in negative features.

Sample no.	Context no.	Cut no.	Feature type	Sample size (l)	Volume processed (l)	Flot volume (ml)	Cereals	Germinated grain	Detached coleoptiles	Chaff	Weed seeds	Silicates	Charcoal	Flot comments
1	8	6	Pit	10	7	15	#	0	##	###	#	0	+++	Mainly chaff
10	11	13		1	0.5	5	##	0	0	####	#	0	++	Frequent spelt chaff
92	390	233	Ditch	20	10	40	##	#	#	##	#	##	+++	More grain than chaff
2	14	429	Pit	20	8	50	##	#	#	####	#	++++	+++	Mainly chaff
42	18	19	Pit	10	8	10	##	#	0	#	0	0	++	Poor preservation
5	34	36	Ditch	20	6	10	#	0	0	#	#	0	+++	Occasional grain and chaff
6	35	36	Ditch	1	1	2	0	0	0	#	#	0	++	Rare chaff
21	93	92	Pit	20	8	1	#	0	0	0	0	0	0	Single oat grain
22	97	96	Pit	20	10	15	##	0	0	#	##	0	++	Mainly grain and weed seeds; bromes and grasses
23	107	109	Pit	20	10	30	##	0	#	###	###	0	+++	Mainly chaff. Abundant rye-grass and bromes
26	119	121	Pit	40	8	10	##	0	0	##	#	0	+++	Mainly chaff
27	122	124	Pit	20	10	20	##	0	0	0	0	0	++	Grain only
24	125	126	Post hole	20	10	10	0	0	0	0	0	0	0	No preservation
25	129	130	Post hole	10	4	10	0	0	0	0	0	0	0	No preservation
30	142	143	Pit	20	10	20	##	0	0	###	#	0	+++	Mainly chaff

Sample no.	Context no.	Cut no.	Feature type	Sample size (l)	Volume processed (l)	Flot volume (ml)	Cereals	Germinated grain	Detached coleoptiles	Chaff	Weed seeds	Silicates	Charcoal	Flot comments
38	156	153	Pit	16	8	1	0	0	#	##	##	0	++	Bromes and glume bases
36	159	158	Ditch	10	6	2	#	0	#	#	0	0	+	Burnt bramble seed.
37	162	160	Pit	10		1	#	#	0	0	0	0	0	Virtually sterile
29	141	197	Pit	20	8	10	#	0	0	#	0	0	++	Occ grain and chaff
40	200	198	Ditch		7	15	##	##	0	0	0	0	++	Mainly germinated grain with little else
91	390	233	Ditch	20	8	30	###	##	0	#	0	0	+	More grain than chaff
44	240	238	Ditch	20	10	1	#	0	0	0	0	0	+++	Single grain, small volume
45	294	268	Pit	20	8	20	#	0	0	###	##	0	++	Spelt glume bases and bromes
7	59	292		1	0.5	2	#	0	#	###	#	0	++	Frequent spelt chaff
16	59	292	Layer	20	8	30	##	0	#	###	##	0	+++	Mainly chaff, frequent bromes and docks
97	419	418	Post hole	10	8	10	#	#	0	#	#	0	++	Germinated barley grains

Table 20: Bulk samples from early Roman deposits

Sub-Period 2.2: Mid to Later Roman (Mid 2nd century AD to 4th century AD)

- D.3.11 The later Roman deposits were extensively sampled due to the obvious black charcoal-rich material that contrasted with the pale natural clay. Sixty-nine samples were taken which included several grab samples that were processed to assess the distribution of material within the dark layers.
- D.3.12 A large group of intercutting pits and waterholes (pit group **321**) was cut into the corner of the earlier enclosure ditches **158** and **36**. Three bulk samples and eleven 1L grab samples was taken from waterhole **321** (the two lowest fills were not sampled due to the level of the water table). Two samples were taken from tertiary fill 341; Sample 74 taken from the south-east end of the section contains only occasional chaff whereas Sample 50, the only sample to be taken from the opposite end of the feature, contains abundant spelt chaff, occasional spelt grains and a moderate assemblage of germinated oat grains. This suggests that the distribution of charred remains within this thick, extensive deposit was not uniform.
- D.3.13 Subsequent fills 342 (Sample 73), 343 (Sample 72), 344 (Sample 71) and 349 (Samples 48, 68, 69 and 70) contain broadly similar assemblages of abundant spelt chaff with occasional grains, some of which are germinated, and occasional weed seeds, predominantly bromes. The samples from fill 349 produced the most diverse assemblage that includes the most germinated grains and detached coleoptiles. Each of these five fills are rich in silicates and also contain seeds of duckweed (*Lemna* spp.). Samples from the uppermost fills 352 (Sample 67), 353 (Sample 48 and 86) and 354 (Samples 64 and 65) vary in content with 353 containing more chaff than the fills between which it was sandwiched.
- D.3.14 Also included within this group of features are pits **137**, **138**, **174**, **325**, **346** and **362**. Lower fills 163 (Sample 34) and 189 (Sample 35) of pit **137** contains plant remains preserved by both carbonisation and waterlogging. The charred component is mainly spelt and emmer glume chaff and occurs in greater quantity in Sample 34 which also includes culm nodes (cereal stems) and germinated grains. Waterlogged roots and stems are frequent and preserved seeds include sainfoin (*Onobrychis viciifolia*) in Sample 35 and sedges (*Carex* spp.) and obligate aquatics such as pond weed (*Potamogeton* spp.) and water crowfoot (*Ranunculus* subgenus *batracium*).
- D.3.15 Fifteen samples were taken from pit **174** which truncated pit **137** and was about the same depth (1m) although there was no evidence of waterlogging within the lower fills. Duckweed is present as the only indicator that these pits originally held water. The lowest fill (175) comprised numerous lenses which were extensively sampled in 1L volumes and mostly produced small flots of around 1ml (Fig. 4). In many of the samples the entire volume of the flot is comprised of spelt chaff with occasional grains, detached coleoptiles and weed seeds including corncockle (*Agrostemma githago*), bromes (several of which have germinated) and members of the dock family (*Rumex/Polygonum* sp.). A single oat floret in sample 77 with a preserved articulation scar can be identified as the wild oat variety *Avena fatua*. Samples 76 and 77 produced larger flots of about 20ml and these samples also contain well-preserved spikelets of spelt in which the grains can be seen to have germinated whilst still in the glumes. Samples 76 and 83 have a significant proportion of detached coleoptiles considering the small volumes processed.
- D.3.16 Of the three samples taken from pit **362**, the lowest fill 363 (Sample 63) contains occasional spelt chaff and an abundance of duckweed seeds preserved by waterlogging but no other organic material. Fills 365 (Sample 61) and 366 (sample 62)

contain similar assemblages of abundant spelt chaff with brome seeds, numerous detached coleoptiles and occasional germinated grains. The preservation of charred remains is best in Sample 62.

- D.3.17 Another large waterhole **118 (394)** was located 7m to the south of pit cluster **321**. Samples were taken from two of the eight fills; both basal fill 399 (Sample 93) and secondary fill 396 (Sample 94) contain occasional charred grains, chaff and weed seeds mixed with seeds preserved by waterlogging. The waterlogged material includes seeds of plants that would be expected to be growing on scrub-land or in hedgerows such as burdock (*Arctium lappa*), elderberry (*Sambucus nigra*), bramble (*Rubus* sp.) and nettles (*Urtica dioica* and *U. urens*). The presence of hemlock (*Conium maculatum*) and great fen sedge (*Cladium mariscus*) indicates that the ground around the watering hole was wet.
- D.3.18 Directly to the east to watering hole **118** was a small group of pits (**429**). The fills of pits **429** and **17** each produced similar assemblages of abundant spelt glume bases with only a minor component of charred grain, whereas pit **19** contains only small assemblage of charred grain. Pit **19** truncated pit **13** and the relative scarcity of plant remains may indicate that it was a post hole rather than a pit. The fills of pits **13** and **17** are recorded as being orange in colour which may indicate a fired-clay content (that has subsequently dissolved) and the features may have been ovens/corn driers.
- D.3.19 A total of five samples were taken from pit group **67** that was thought to have an industrial function due to the morphological characteristics of the features. The lower fills consisted of puddling clays that contain duckweed seeds and occasional charred grains. Samples 18 (fill 69) and 19 (fill 70) were taken from an area that looked darker and comprised of wood charcoal whereas Sample 32, taken from a different area of fill 69, contained far less charcoal. Sample 18 also contains an assemblage of molluscs that could be submitted for identification (Appendix D.2).
- D.3.20 Fill 65 was sampled in three places; Samples 11 and 20 taken from the south-eastern end of the pit (Fig. 5, Section 15) contains moderate chaff and Sample 17 from the north-eastern end (Fig. 5, Section 13) is completely different in content with grain and detached coleoptiles only. The densities of the charred plant assemblages within this pit cluster are far less than in other contemporary features and the lower fills were notably lacking in charred material.
- D.3.21 The original interpretation of the main rectangular feature (**67**) as a corn-drier seems unlikely as the primary fills of such features usually contain the remains of the final firing prior to disuse. The nature of the puddling clays and the presence of duckweed suggests that this feature contained water which may be integral to the function. The cluster of features were all sealed with a natural clay layer measuring 0.42m thick from which fired clay was recovered, many fragments of which had grain impressions. Further investigation of the impressions, through the use of silicone casts, has the potential to identify the species and possibly add to the interpretation of this enigmatic feature.
- D.3.22 A group of features (pit group **430**) to the south of pit cluster **67** are thought to have been corn driers based on their morphology. Sample 12, fill 37 of pit **38** contains numerous spelt grains, Sample 13, fill 52 of pit **54** contains spelt grains and chaff and Sample 3, fill 22 of pit **20** contains mainly oat grains. The charred plant remains recovered from these features could represent the burnt remains retained in a corn drier after the final firing. Corn driers are frequently found in Roman enclosures and often as clusters of burnt pits with associated post holes. Hammerscale and slag were also

retrieved from these features and it is possible that their function is related to metalworking and that the charred plant remains are evidence of the use of crop processing waste as fuel for this activity.

- D.3.23 A layer (357/404) of dark material sealing the pit cluster was grid-sampled (samples 51 to 60). All of the samples contain moderate assemblages of spelt chaff with brome seeds, the only sample of note is Sample 51 which contains a greater quantity of these remains.

Sample No.	Context No.	Cut No.	Feature Type	Sample Size (L)	Volume processed (L)	Flot Volume (ml)	Cereals	Germinated grain	detached coleoptiles	Chaff	Legumes	Weed Seeds	waterlogged seeds	Lemma	silicates	Charcoal <2mm	Flot comments
3	22	20	Pit	20	8	10	##	0	0	##	0	#	0	0	+++	+++	numerous oats
4	27	22	Pit	20	6	25	#	#	0	0	0	#	0	0	0	+++	mainly grain
8		37		1	0.5	2	#	#	#	##	0	#	0	#	0	++	occasional chaff
12	37	38	Pit	10	10	50	####	0	0	#	0	0	0	0	0	+++	mainly spelt grain
14	41	45	Pit	20	6	20	#	0	0	##	0	#	0	0	0	++	mix of grain and chaff
15	50	51	Pit	20	8	30	#	0	0	#	0	#	0	0	0	+	occasional grain and chaff
13	52	54	Pit	20	7	15	##	0	0	###	0	#	0	0	0	++	mix of grain and chaff
43	52	54	Pit	2	1	1	0	0	0	0	0	0	0	0	0	+	sparse charcoal only
17	65	64	Pit	20	10	5	###	#	#	0	0	0	0	0	0	+	mainly grain
20	65	64	Pit	20	10	20	#	#	0	###	0	0	0	0	0	+++	mainly chaff
28	72	64	Pit	20	10	1	0	0	0	#	0	0	0	0	0	+	single glume base
11	65	67	Pit	1	0.5	25	##	#	#	####	0	#	0	0	0	++	frequent spelt chaff
18	69	67	Pit	20	8	40	0	0	0	0	0	0	0	0	0	++++	charcoal and snails
32	69	67	Pit	20	8	5	##	#	0	0	0	##	0	0	0	++	grain only with duckweed
19	70	67	Pit	5	2	25	0	0	0	0	0	0	0	0	0	++++	charcoal onlu
31	90	67	Pit	20	10	10	##	0	0	##	0	#	0	0	0	++	occ grain and

Sample No.	Context No.	Cut No.	Feature Type	Sample Size (L)	Volume processed (L)	Flot Volume (ml)	Cereals	Germinated grain	detached coleoptiles	Chaff	Legumes	Weed Seeds	waterlogged seeds	Lemma	silicates	Charcoal <2mm	Flot comments
																	chaff with duckweed
9	114	118	Water hole	1	0.5	1	0	0	0	#	0	0	0	0	0	++	rare chaff
34	163	137	Pit	20	8	50	##	##	##	#####	#	#	0	#	0	+++	mainly spelt glume bases with germinated grains. Corncockle
35	189	137	Pit	10	6	120	0	0	#	##	0	#	#	#	0	++	charred and waterlogged. Sainfoin
39	152	148	Pit	16	10	50	#	#	#	#####	0	##	0	0	0	++	abundant glume bases
79	175	174	Pit	1	0.4	1	0	0	0	#	0	#	0	0	0	+	occasional chaff present
80	175	174	Pit	1	1	1	0	0	0	#	0	#	0	#	0	+	occasional chaff present
81	175	174	Pit	1	1	1	0	0	0	#	0	#	0	0	0	+	occasional chaff present
82	175	174	Pit	1	0.7	1	#	0	#	##	0	#	0	0	0	+	moderate glume bases
83	175	174	Pit	1	0.6	1	#	#	##	####	0	#	0	#	0	+	significant numbers of detached coleoptiles considering such small volume
84	175	174	Pit	1	1.3	2	#	#	#	#####	0	#	0	0	0	+	abundant

Sample No.	Context No.	Cut No.	Feature Type	Sample Size (L)	Volume processed (L)	Flot Volume (ml)	Cereals	Germinated grain	detached coleoptiles	Chaff	Legumes	Weed Seeds	waterlogged seeds	Lemma	silicates	Charcoal <2mm	Flot comments
																	spelt glume bases
85	175	174	Pit	1	1	1	0	0	0	#	0	0	0	0	+++	+	occasional chaff present
86	175	174	Pit	1	10	1	0	0	#	###	0	#	0	##	+++	+	frequent glume bases
87	175	174	Pit	1	1	1	0	0	0	###	0	0	0	0	0	+	frequent glume bases
88	175	174	Pit	1	0.6	1	0	0	0	0	0	0	0	0	0	+	sparse charcoal only
78	176	174	Pit	1	1	1	#	0	#	##	0	#	0	0	0	+	occasional chaff present
77	177	174	Pit	1	1	30	0	#	#	#####	0	##	0	0	+++	+	abundant spelt chaff, germinated spelt grain enclosed within spikelet. Avena fatua floret
76	178	174	Pit	1	1	25	0	##	##	#####	0	##	0	0	++	+	abundant spelt chaff, germinated spelt grain enclosed within spikelet
75	179	174	Pit	1	1.3	30	0	#	#	#	0	##	0	0	+++	+	several germinated brome seeds
33	180	174	Pit	20	8	30	##	0	0	##	0	#	0	0	0	+++	grain and chaff and



Sample No.	Context No.	Cut No.	Feature Type	Sample Size (L)	Volume processed (L)	Flot Volume (ml)	Cereals	Germinated grain	detached coleoptiles	Chaff	Legumes	Weed Seeds	waterlogged seeds	Lemma	silicates	Charcoal <2mm	Flot comments
																	seeds
50	341	321	Pit	20	7	50	#	#	0	#####	0	#	0	#####	0	++	germinated oat grains, abundant spelt glume bases
74	341	321	Pit	1	1	2	0	#	0	#	0	0	0	##	0	+	occasional grain
73	342	321	Pit	1	1.2	30	0	#	#	#####	0	#	0	##	++	+	abundant spelt chaff, barley rachis
72	343	321	Pit	1	1	40	0	#	#	#####	0	##	0	#	+++	+	abundant spelt chaff, sprouted barley grain
71	344	321	Pit	1	1	40	0	##	#	#####	0	##	0	##	++++	+	abundant spelt chaff, bromes and corncockles
49	349	321	Pit	20	10	80	##	#	##	#####	#	##	0	#	0	++	germinated barley grain, abundant spelt chaff including spikelet
68	349	321	Pit	1	1	40	0	#	##	#####	0	##	0	0	0	++	abundant spelt chaff
69	349	321	Pit	1	1	60	0	##	#	#####	0	##	0	0	0	+	abundant spelt chaff, bromes and rye-grass
70	349	321	Pit	1	1	30	0	##	##	#####	0	#	0	0	++++	+	abundant

Sample No.	Context No.	Cut No.	Feature Type	Sample Size (L)	Volume processed (L)	Flot Volume (ml)	Cereals	Germinated grain	detached coleoptiles	Chaff	Legumes	Weed Seeds	waterlogged seeds	Lemma	silicates	Charcoal <2mm	Flot comments
																	spelt chaff, germinated brome. Several emmer glume bases
67	352	321	Pit	1	1.4	1	0	0	0	#	0	#	0	0	0	0	moderate glume bases
48	353	321	Pit	20	7	25	##	#	#	###	0	##	0	0	0	++	oats and awns with spelt grains and glume bases
66	353	321	Pit	1	1	1	0	0	0	##	0	0	0	0	0	++	moderate glume bases
64	354	321	Pit	1	1.5	1	0	0	0	##	0	0	0	0	0	+	moderate glume bases
65	354	321	Pit	1	1.4	1	#	0	0	#	0	0	0	0	0	+	moderate glume bases
46	329	325	Pit	20	8	25	##	#	0	0	0	0	0	##	0	++	spelt spikelet
63	363	362	Pit	20	6	5	0	0	0	#	0	0	0	###	0	++	lemna and ostracods
61	365	362	Pit	20	10	60	##	#	##	#####	0	0	0	0	0	++	abundant spelt chaff. Several detached coleoptiles
62	366	362	Pit	20	9	140	##	#	##	#####	0	0	0	0	0	++	abundant spelt chaff. Several detached coleoptiles.



Sample No.	Context No.	Cut No.	Feature Type	Sample Size (L)	Volume processed (L)	Flot Volume (ml)	Cereals	Germinated grain	detached coleoptiles	Chaff	Legumes	Weed Seeds	waterlogged seeds	Lemma	silicates	Charcoal <2mm	Flot comments
																	Emmer glume base
89	372	371	Pit	20			0 0	0	0	0	0	0	0	0	0	0	
90	373	371	Pit	20	9	40	###	#	0	##	0	#	0	#	0	+++	more grain than chaff. No germination. Wood charcoal
96	395	394	Watering hole	5	2		0	0	0	0	0	0	0	0	0	0	
94	396	394	Watering hole	10	7	70	##	##	#	##	0	#	##	0	0	+++	mixed assemblage of charred and w/l seeds
95	396	394	Watering hole	1			0	0	0	0	0	0	0	0	0	0	
93	399	394	Watering hole	20	8	60	#	0	0	#	0	0	###	#	0	++	Numerous w/l seeds of brambles, elderberry and nettles
51	357	404	CPW spread	2	1	10	#	#	#	###	0	###	0	0	0	++	spelt glume bases and bromes
52	357	404	CPW spread	2	0.7	1	0	0	0	##	0	#	0	0	0	++	moderate glume bases
53	357	404	CPW spread	2	0.9	1	0	0	0	##	0	#	0	0	0	++	moderate glume bases
54	357	404	CPW spread	2	1	2	0	0	#	##	0	#	0	0	0	++	moderate glume bases
55	357	404	CPW	2	10	2	0	0	#	###	0	#	0	0	0	++	moderate

Sample No.	Context No.	Cut No.	Feature Type	Sample Size (L)	Volume processed (L)	Flot Volume (ml)	Cereals	Germinated grain	detached coleoptiles	Chaff	Legumes	Weed Seeds	waterlogged seeds	Lemma	silicates	Charcoal <2mm	Flot comments
			spread														glume bases
56	357	404	CPW spread	2	1	1	0	0	0	#	0	0	0	0	0	+	occasional glume bases and awns
57	357	404	CPW spread	2	0.8	1	0	0	0	##	0	0	0	0	0	+	moderate glume bases
58	357	404	CPW spread	2	1	1	0	0	0	##	0	0	0	0	0	+	moderate glume bases
59	357	404	CPW spread	2	1	1	0	0	#	##	0	0	0	0	0	+	moderate glume bases
60	357	404	CPW spread	2	0.8	1	0	0	0	#	0	0	0	0	0	+	moderate glume bases

Table 21: Bulk samples from later Roman deposits

Discussion

- D.3.24 The preserved plant remains recovered from excavations at Over Industrial Estate provide tantalising clues to the interpretation of the site. It was obvious during excavation that there was a significant quantity of charred plant remains spread over large areas and present as thick layers and deposits within many of the features. Extensive sampling has shown that crop processing waste is present in such large quantities that the scale of production of such material, and the subsequent burning and disposal of it, has to relate to an industrial process of some importance.
- D.3.25 Spelt wheat has been identified by the characteristic morphology of the grains and, more accurately, of the chaff elements. Spelt is the main type of wheat grown in the later Iron Age and Roman period and is found on most sites of this date in East Anglia (Moulins & Murphy 1997; Greig 1981). It is a hulled wheat in which the grain is tightly enclosed in spikelets that need to be parched and pounded to release the grain. The resultant chaff was considered as excellent fuel and commonly used to fire corn driers, malting ovens and metalworking hearths (van der Veen 1999, 221) all of which are possibly activities that were taking place at this site.
- D.3.26 Other cereals in lesser quantities includes emmer wheat, barley and possibly bread wheat that are likely to have been contaminants of the spelt crop but further study of the assemblages would hopefully establish their importance. Bromes are a common component of the charred assemblages and are likely to have been a tolerated cereal contaminant and the presence of germinated brome seeds is evidence that they have germinated with the spelt crop. In order for grain to germinate it has to be exposed to moisture. This can occur through natural processes through which grain becomes spoiled or through deliberate action in which grain is steeped in water to induce germination as part of the malting process for beer production. Studies by Van der Veen (1989, 305) have suggested that assemblages that are likely to be produced by the roasting of germinated grain for malting would consist of grains that show evidence of germination (dorsal groove and shrunken sides) and numerous coleoptiles (sprouted coleoptiles) that would have broken off in the process. Furthermore, if the grains had been allowed to germinate in their spikelets, chaff consisting of glume bases and spikelet forks would also be present in the assemblage. The recovery of complete spikelets from pit **174** in which the enclosed grain has clearly germinated is conclusive proof of this and the proportion of germinated spelt grains in the Over assemblages is highly likely to indicate the use of this grain for beer production.
- D.3.27 Spelt malting is likely to have been common in the Roman period, particularly in this region in which spelt was intensively cultivated. Finding the evidence is usually tentative; germinated spelt was found at the Roman town at Wixoe in Suffolk (Fosberry forthcoming a) and at Itter Crescent Roman villa in Peterborough (Fosberry, forthcoming b) but not in such quantities as has been found at Over. Excavations at Stebbing Green, Essex (Murphy 1989) produced spelt malt combined with large quantities of 'fine-sieving by-products' which are the burnt remains of chaff that are produced when spelt wheat is processed to release the grain. At Stebbing Green a building measuring a maximum of 12m x 11m was interpreted as a 'malt-house' due to the presence of oven flues containing sprouted grain and an adjacent rectangular pit that could have been used to steep the grain (Murphy 1989). It is possible that some of the features excavated at Over may similarly relate to steeping pits.
- D.3.28 The abundance of the burnt crop-processing waste at Over is indicative of the burning of waste that has resulted from large scale processing of spelt wheat. The processing of the grain may have taken place in the near vicinity of the site although the value of chaff

may have resulted in it being imported from elsewhere for the use as fuel for the specific activities taking place at this site (van der Veen, 213). The interpretation of industrial-scale agricultural activity at Langdale Hale, Colne Fen was based on the rich assemblages comprised mainly of spelt chaff with only moderate amounts of grain and chaff (Ballantyne 2013, 143). These assemblages are similar in composition to those at Over with the exception of the absence of germinated grain at Langdale Hale. Similarly at Glinton, extensive spreads of black-soils were comprised of rich assemblages of crop processing waste (Malim 2005, 189) thought to relate to large-scale processing of agricultural surplus for exportation.

D.3.29 **Potential:** The preserved plant remains at Over have excellent archaeobotanical potential for further study. The site is of considerable regional and even national importance if the malting of spelt wheat on an industrial scale can be confirmed. Analysis of the assemblages will provide information in accordance with the regional and local research themes, particularly with regards to the characterisation of the agrarian economy and the relationship of the agricultural regime within the local and regional landscape and economy.

D.3.30 **Further Work:** It is recommended that a selection of samples are fully analysed with the following aims:

- To characterise individual assemblages through quantification of individual elements and calculation of grain:chaff:weed seed ratios.
- To calculate the percentage of germinated grain and coleoptiles to confirm spelt malting to also include the measurement of coleoptiles and comparison to modern reference material subjected to controlled germination experiments to determine if there is uniformity within and between assemblages.
- The study of the plant impressions found in fired clay from pit 67 to determine whether the spikelet impressions noticed during assessment were burnt or not, the degree of articulation and species identification.
- A detailed comparison with other sites in which there is evidence of large-scale production of crop-processing waste and/or evidence of malting

D.3.31 Four samples from sub-period 2.1 are recommended for analysis:

Sample 23, fill 107, pit **109** (high percentage of weed seeds)

Sample 40, fill 200, ditch slot **198** equivalent to

Sample 91, fill 390, ditch 233 (germinated grain)

Sample 2, fill 14, pit **429** (oven/corn drier)

D.3.32 Eight samples from sub-period 2.2 are recommended for analysis:

Samples 49, 70, fill 349 of pit **231** (spelt chaff and germinated grain)

Sample 34, fill 163 and Sample 35, fill 189 of pit **137** (waterlogged plant remains)

Samples 76, 77 and 83 fill 175 of pit **174** (germination within spikelets, detached coleoptiles)

Sample 62, fill 366, pit 362 (Chaff, detached coleoptiles)

D.3.33 The possibility of DNA and/or Isotope analysis should be researched, with advice being sought from experts in the field.

Processing of additional soil = 2 days

Analysis of 12 samples, tabulation and report = 15 days

APPENDIX E. PRODUCT DESCRIPTION

Product number: 1

Product title: Full Report (Analysis and Publication)

Purpose of the Product: To analyse the site and address the research aims and objectives stated in this report and to disseminate to the local community

Composition: Published report, in accordance with the relevant journal and EH guidelines

Derived from: Analysis of site records, specialist reports, data and background research

Format and Presentation: Article in series

Allocated to: PM, RF & SPM

Quality criteria and method: Checked and edited by EP

Person responsible for quality assurance: EP

Person responsible for approval: EP

APPENDIX F. RISK LOG

Risk Number: 1

Description: Specialists unable to deliver analysis report due to over running work programmes/ ill health/other problems

Probability: Medium

Impact: Variable

Countermeasures: OA has access to a large pool of specialist knowledge (internal and external) which can be used if necessary.

Estimated time/cost: Variable

Owner:

Date entry last updated:

Risk Number: 2

Description: Non-delivery of full report due to field work pressures/ management pressure on Co-authors

Probability: Medium

Impact: Medium – High

Countermeasures: Liaise with OA Management team

Estimated time/cost: Variable

Owner:

Date entry last updated:

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APPENDIX H. OASIS REPORT FORM

All fields are required unless they are not applicable.

Project Details

OASIS Number	<input type="text"/>		
Project Name	<input type="text"/>		
Project Dates (fieldwork) Start	<input type="text"/>	Finish	<input type="text"/>
Previous Work (by OA East)	<input type="text"/>	Future Work	<input type="text"/>

Project Reference Codes

Site Code	<input type="text"/>	Planning App. No.	<input type="text"/>
HER No.	<input type="text"/>	Related HER/OASIS No.	<input type="text"/>

Type of Project/Techniques Used

Prompt

Please select all techniques used:

<input type="checkbox"/> Field Observation (periodic visits)	<input type="checkbox"/> Part Excavation	<input type="checkbox"/> Salvage Record
<input type="checkbox"/> Full Excavation (100%)	<input type="checkbox"/> Part Survey	<input type="checkbox"/> Systematic Field Walking
<input type="checkbox"/> Full Survey	<input type="checkbox"/> Recorded Observation	<input type="checkbox"/> Systematic Metal Detector Survey
<input type="checkbox"/> Geophysical Survey	<input type="checkbox"/> Remote Operated Vehicle Survey	<input type="checkbox"/> Test Pit Survey
<input type="checkbox"/> Open-Area Excavation	<input type="checkbox"/> Salvage Excavation	<input type="checkbox"/> Watching Brief

Monument Types/Significant Finds & Their Periods

List feature types using the [NMR Monument Type Thesaurus](#) and significant finds using the [MDA Object type Thesaurus](#) together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
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<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Project Location

County	<input type="text"/>	Site Address (including postcode if possible)
District	<input type="text"/>	<input type="text"/>
Parish	<input type="text"/>	
HER	<input type="text"/>	
Study Area	<input type="text"/>	National Grid Reference <input type="text"/>

Project Originators

Organisation	<input type="text"/>
Project Brief Originator	<input type="text"/>
Project Design Originator	<input type="text"/>
Project Manager	<input type="text"/>
Supervisor	<input type="text"/>

Project Archives

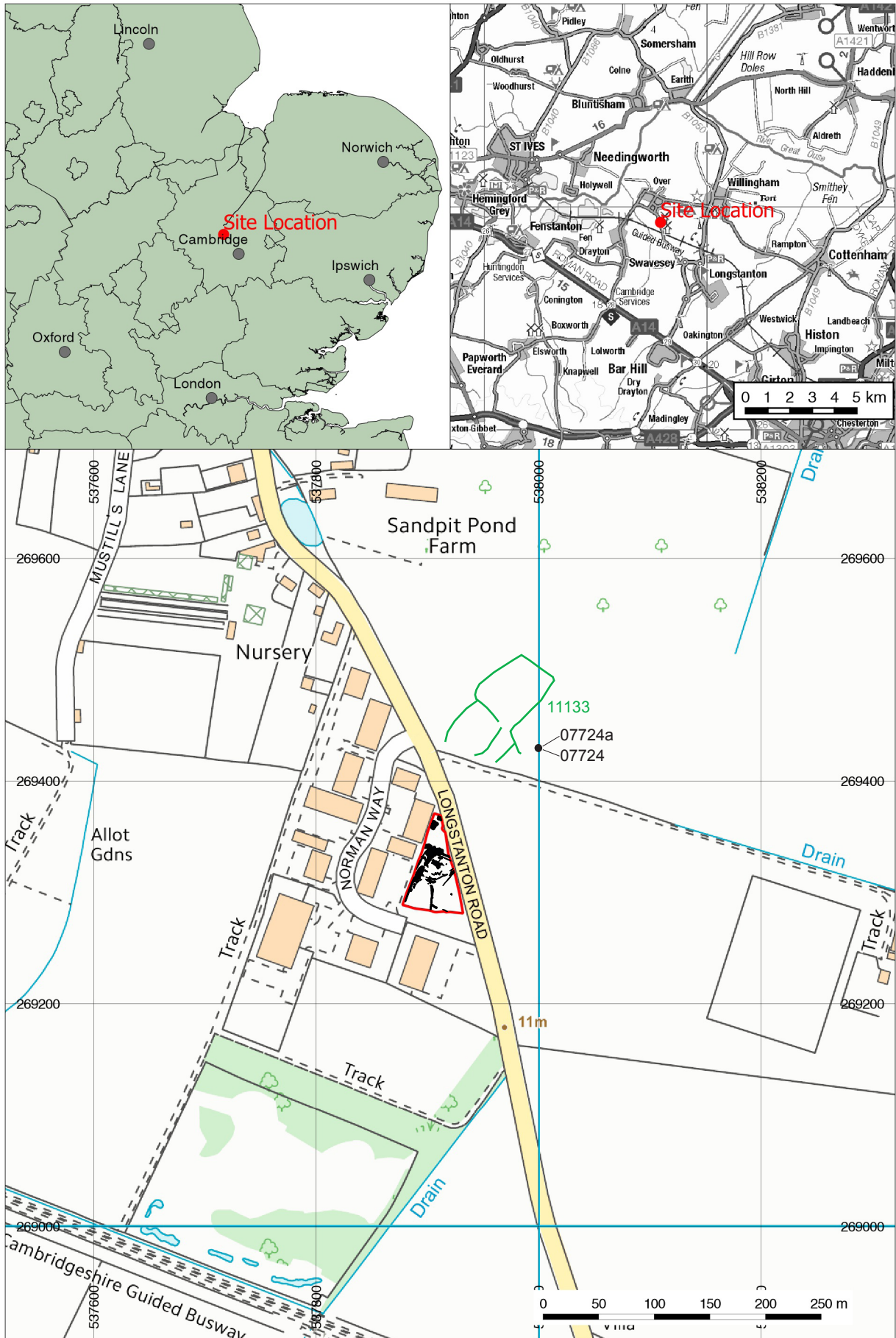
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Archive Contents/Media

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Ceramics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Digital Media	Paper Media
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<input type="checkbox"/> GIS	<input type="checkbox"/> Context Sheet
<input type="checkbox"/> Geophysics	<input type="checkbox"/> Correspondence
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<input type="checkbox"/> Spreadsheets	<input type="checkbox"/> Map
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	<input type="checkbox"/> Research/Notes
	<input type="checkbox"/> Photos
	<input type="checkbox"/> Plans
	<input type="checkbox"/> Report
	<input type="checkbox"/> Sections
	<input type="checkbox"/> Survey

Notes:



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Figure 1: Site location plan showing archaeological features (black) in development area (red) with nearby CHER numbers and cropmarks (green)

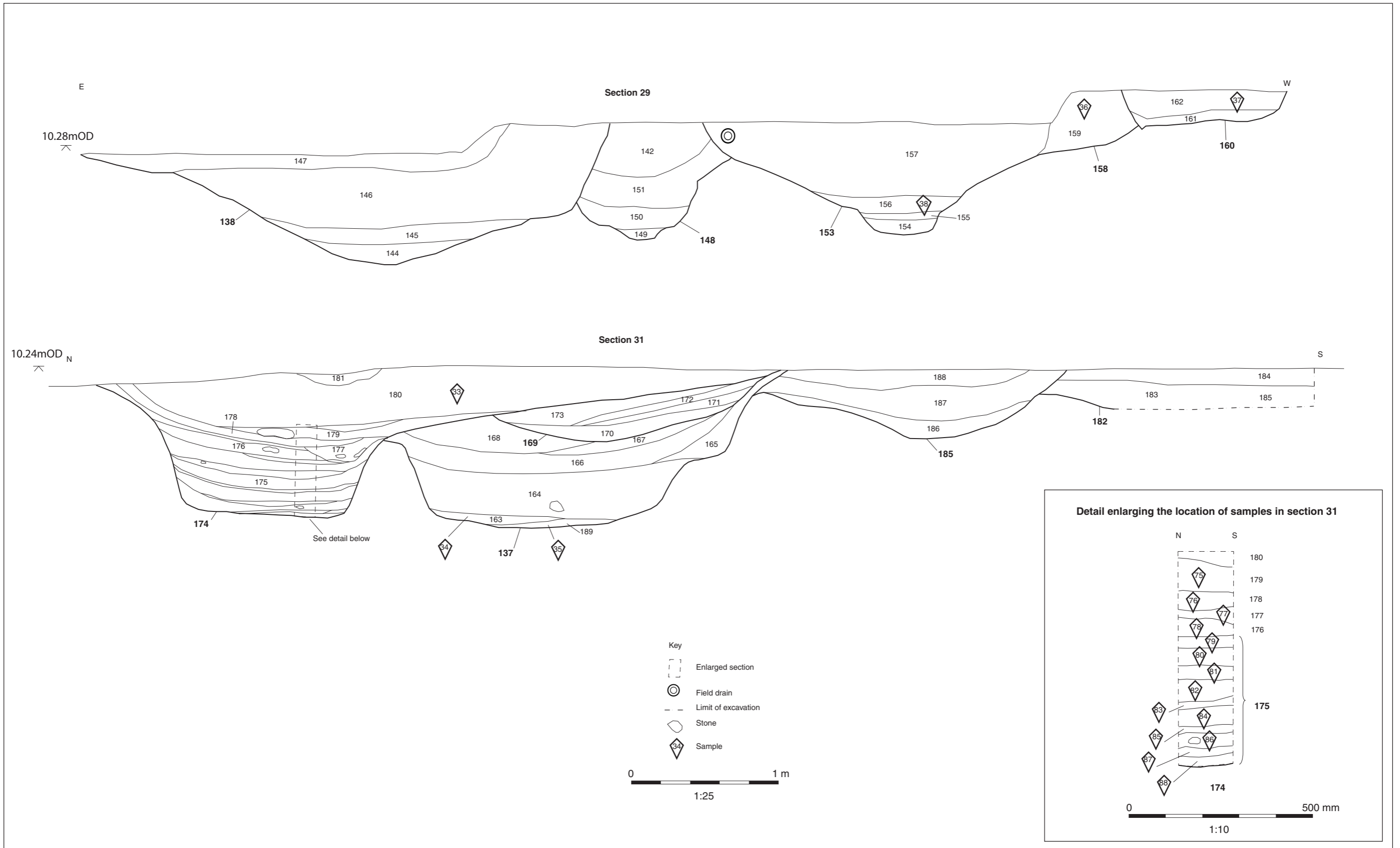


Figure 3: Sections 29 and 31

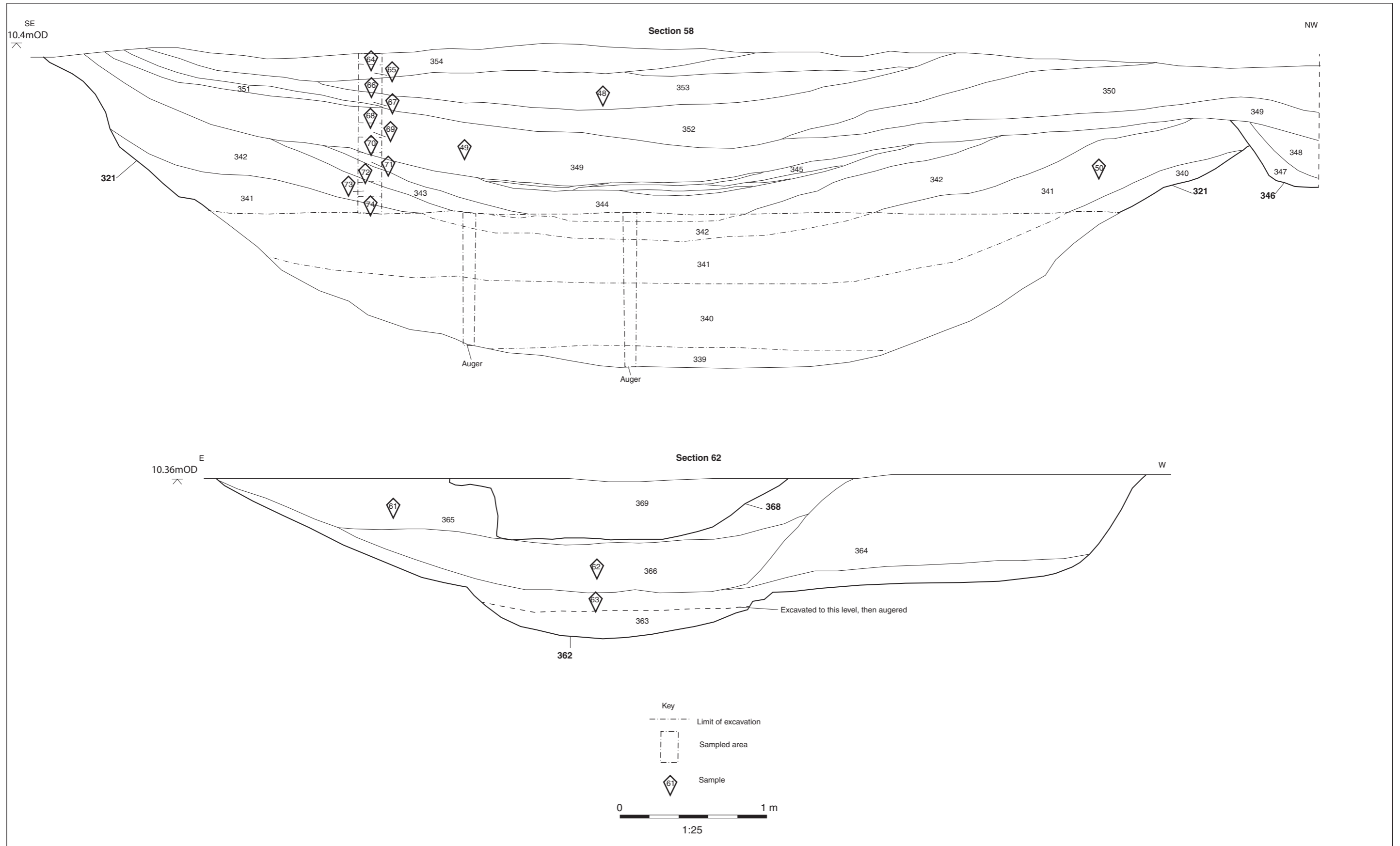


Figure 4: Sections 58 and 62



Plate 1: Pits **148** & **153**, looking south-south-west



Plate 2: Windbreak **408**, looking east



Plate 3: Pit Group 321, looking west



Plate 4: Pit Group 321, looking south

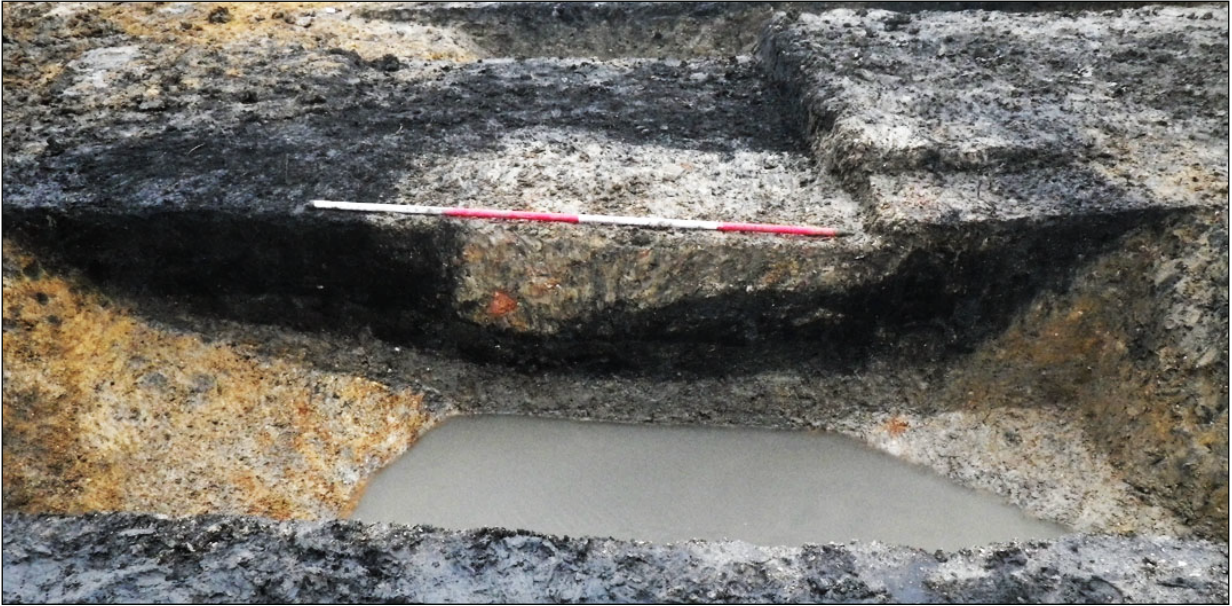


Plate 5: Pit **368** truncating pit **362**, looking south-west



Plate 6: Pit Group **67** looking south-east



Plate 7: Pit group 67, looking north-east.



Plate 8: Site during excavation.



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