# Northern Archaeological Associates

## MELTON WASTEWATER TREATMENT WORKS
## EAST YORKSHIRE

## ARCHAEOLOGICAL POST-EXCAVATION ASSESSMENT

**prepared for**

**SCOTT WILSON KIRKPATRICK & CO LTD**

**on behalf of**

**YORKSHIRE WATER SERVICES LTD**

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# ARCHAEOLOGICAL POST-EXCAVATION ASSESSMENT

## Summary

*A programme of archaeological monitoring and excavation was undertaken by Northern Archaeological Associates for Scott Wilson on behalf of Yorkshire Water during the construction of a new wastewater treatment works and associated rising main at Melton in East Yorkshire. The work was undertaken between January and July 2003.*

*The monitoring of topsoil stripping on the treatment works site identified two pits. One contained domestic refuse of probable late Neolithic or early Bronze Age date which was probably associated with nearby occupation. The other contained a collared urn of early Bronze Age date and the associated cremated bone of an adult, the only collared urn recovered to date within the area. Although isolated features, these provide further evidence of activity of this date within this region of the Humber Estuary and southern Wolds.*

*The monitoring of topsoil stripping along the corridor of the 4km rising main linking Brough-on-Humber with the new treatment works identified a previously unrecorded archaeological site at Low Common Lane and this was subsequently excavated within the limits of the corridor. Pre-Roman activity there included a series of gullies and part of a ring ditch. These were succeeded by a sequence of three double-ditched enclosures, placed one on top of the other, and datable to the later Roman period. The nature of these enclosures was unclear, but the area delineated included a road running approximately north to south towards the highest point in the field (just south of the line of the easement). The makeup of the road included a re-used tile stamp of the* legio VI Victrix *dating to the beginning of the 3rd century AD. The final phase of Roman activity saw a pagan crouched inhumation inserted near a corn drying kiln.*

*The site at Low Common Lane, in combination with another Romano-British site previously identified by trial trenching near to the treatment works and which may be its predecessor, is of regional significance and warrants further analysis of the site archive. This would not require further analysis of the pottery or small finds assemblages, but the results of the assessments presented here should be integrated into a re-assessment of the stratigraphic record. A final report for publication, including the results of the monitoring and earlier trial trenching on the treatment works site, should be produced on the results of the excavation for inclusion in an appropriate regional journal.*

## 1.0 INTRODUCTION

1.1 Northern Archaeological Associates (NAA) was commissioned by Scott Wilson on behalf of Yorkshire Water Services Ltd to undertake archaeological observation, investigation and recording (a 'watching brief') during the construction of new wastewater treatment facilities at Melton (planning reference DC/02/01301/STPLF; SMR/2002/167) and an associated rising main from Brough-on Humber to the treatment works. The report concentrates upon the results of archaeological investigations undertaken at both the treatment works site, where a small group of prehistoric features were recorded (site code MTW03) and upon the excavation of a Romano-British settlement site on Low Common Lane on the route of the rising main (site code BMP03). This post-excavation assessment report has been prepared by Northern Archaeological Associates (NAA) for Scott Wilson on behalf of Yorkshire Water Services Ltd.

1.2 The site investigations during the construction works represented a final phase of archaeological evaluation and mitigation undertaken in relation to the new wastewater treatment works and associated rising main. This included an initial archaeological appraisal of the scheme proposals (NAA 2002a) as well as subsequent a fieldwalking survey (NAA 2002b), geophysical survey (GSB Prospection 2002) and trial trenching (NAA 2002c) on the proposed treatment works site. On the basis of the results of this phased programme of archaeological evaluation the size and design of the treatment works was altered in order to avoid a previously unrecorded Romano-British settlement site. In addition, an archaeological watching brief was also maintained during initial construction works on both the treatment works site and associated rising main and pumping stations in accordance with a project design (NAA 2002d) submitted to and agreed with the Humber Archaeology Partnership (archaeological advisors to the East Riding of Yorkshire Council).

1.3 The watching brief on the treatment works site was undertaken during January 2003 under the supervision of Ben Westwood. The excavation of the Romano-British settlement site at Low Common Lane was undertaken over a five week period during April and May 2003 under the direction of Dr M C Bishop.

1.4 This post-excavation assessment report describes the location of the identified archaeological remains, the methodology, and results of the investigations and summarises the specialist assessments of finds and environmental information recovered. In accordance with both the project design and national guidance (English Heritage 1991) the report also assesses the potential for further analysis at each site and proposes a programme for further work in order to produce a final publication report.

## 2.0 LOCATION, TOPOGRAPHY AND GEOLOGY

2.1 Melton is located some 3km to the east of Brough and some 13km to the west of the centre of Kingston-upon-Hull in the East Riding of Yorkshire (Figure 1). The location for the new wastewater treatment works (SE 968 251) is some 1.5km to the south of Melton village, some 2km to the west of North Ferriby and 05km to the north of the

Humber estuary near Redcliff Channel. The treatment works site extends to an area of some 1.3ha, measuring up to 110m east to west by 130m north to south (Figure 2).

2.2 The associated rising main pipeline begins at Brough pumping station, on the south edge of the village, and runs along the southern side of the Hull to Selby railway line before cutting across arable fields to run into the south-west corner of the wastewater treatment works (a total distance of almost 4km). The site at Low Common Lane is situated on the south side of the lane (SE 9635 2540) some 0.5km to the west of the treatment works and 1km to the north of the Humber. Both sites are located within the civil parish of Welton.

2.3 Within the area of the wastewater treatment works and the majority of the pipeline route the solid geology consists of grey mudstones overlain by boulder clay and morainic drift. The soils within the area are principally calcareous coarse loamy soils of the Landbeach association (Jarvis *et al* 1984). The area of the wastewater treatment works is generally level and at a height of some 4m OD. The very western extent of the rising main is within an area of marine alluvium overlain with stoneless mainly calcareous soils of Newchurch 2 association.

## 3.0 ARCHAEOLOGICAL BACKGROUND

3.1 The investigation and recording undertaken during the watching brief formed the final component of a staged approach to the archaeological remains within the area of the development. A summary of these earlier stages of archaeological works is set out below.

### Appraisal

3.2 Archaeological sites and finds recorded within the area of the treatment works and rising main are listed in Table 1 below. Sites are identified by their Humber Sites and Monuments Record (SMR) number or Humber Wetlands Project (HWP) number for sites and finds identified as part of their survey of the Melton area (only excavated sites listed). A central grid reference, suggested classification and date are provided for each site. The location of the sites is indicated on Figure 1. Finds recovered as part of the Humber Wetlands Project survey are plotted but not listed, and referred to in the text as necessary.

***Table 1: Archaeological sites***

| *Site* | *Grid reference* | *Classification* | *Period* |
|---|---|---|---|
| 960 | SE 9790 2480 | Settlement | Iron Age – Romano-British |
| 3677 | SE 9770 2500 | Ditches | Iron Age |
| 6654 | SE 9520 2600 | Enclosures (field system) | Iron Age – Romano-British |
| 8241 | SE 9740 2640 | Settlement | Iron Age – Romano-British |
| 8829 | SE 9700 2570 | Railway line | 1840 |
| 10233 | SE 9630 2540 | Ridge and furrow | Medieval |
| 11544 | SE 9733 2634 | Building: site of Summer house | Post-medieval |
| 11545 | SE 9731 2623 | Well | Post-medieval |
| 11547 | SE 9560 2680 | Building: site of Summer House | Post-medieval |

| | | | |
|---|---|---|---|
| 11549 | SE 9730 2480 | Brick and tile yard | 19th century |
| 13456 | SE 9710 2470 | Coin (findspot) | Iron Age |
| 16383 | SE 9750 2480 | Trackway | Bronze Age |
| 17686 | SE 9650 2608 | Pottery (findspot) | Roman – post-medieval |
| 17687 | SE 9628 2641 | Pottery (findspot) | Roman – post-medieval |
| 17690 | SE 9570 2620 | Coin (findspot) | Roman |
| 17695 | SE 9790 2490 | Coin (findspot) | Iron Age |
| 17697 | SE 9560 2600 | Metal finds (findspot) | Medieval |
| 17698 | SE 9560 2600 | Coin (findspot) | Roman |
| 18087 | SE 9720 2610 | Field system | Unknown |
| *HWP* | *Grid reference* | *Classification* | *Period* |
| 12 | SE 9690 2460 | Structure (?fish trap) | Bronze Age |
| 13 | SE 9700 2460 | Structure (?fish trap) | Bronze Age – Iron Age |
| 14 | SE 9700 2460 | Structure (?fish trap) | Bronze Age |
| 15 | SE 9700 2460 | Structure | Bronze Age |
| 25 | SE 9740 2470 | Trackway | Bronze Age |
| 26 | SE 9740 2470 | Trackway | Bronze Age |

***Prehistoric and Romano-British***

3.3 Sites of prehistoric date within the vicinity of the treatment works and rising main fall into two distinct categories, these being either Bronze Age structures or finds along the Humber foreshore (mostly identified as part of the Humber Wetlands Project survey of the Melton area) or settlement sites and enclosure complexes of the later Iron Age which extend into the Romano-British period.

3.4 A number of structures, sites and other finds of Bronze Age date have been identified along the Humber foreshore, principally in the area to the west of East Clough (centred SE 972 247). These include parts of three probable trackways (Site 16383 and HWP sites 25 and 26) which consist of larger vertical timbers associated with smaller horizontal hurdles (Van de Noort and Ellis 1999, 230-237). To the west of these trackways other structures have been identified, including smaller groups of vertical worked timbers or stakes, some of which have been tentatively interpreted as fish traps (*ibid*, 224-227). A number of other individual worked stakes have also been recovered from the foreshore. Radiocarbon dates obtained for all the trackways recorded (1470-840 BC) date them to the Bronze Age, although the dates for one of the possible fish traps (HWP site 13) is for 810-400 BC, suggesting that this feature is late Bronze Age or early Iron Age. Sites and finds of Bronze Age and Iron Age date are also recorded from the Humber foreshore further to the east in the vicinity of North Ferriby, including the five Ferriby boats.

3.5 The most significant site of later Iron Age or Romano-British date within area is the Roman town (*Petvaria*) and earlier military fort at Brough (Wacher 1969). The Roman town served as the *civitas* capital or administrative centre for the region. The fort was established in AD 71 at the northern end of the Humber crossing, opposite Wintringham, with the town defences being constructed soon after the removal of the garrison in AD 125 (Ramm 1978, Van de Noort and Ellis 1999). New defences were built around AD 200 and converted to stone at the end of the 3rd century. The town was largely abandoned before AD 370, probably as a result of increasing flooding.

3.6 There are a number of other settlement sites of later Iron Age or Romano-British date within the area which may have prospered due to their proximity to *Petvaria*. These include one site on the Humber bank at Redcliff (Site 960). This site was originally identified from the surface collection of pottery, coins, metalwork and other finds from the area or where exposed in features eroding from adjacent section of the cliff. Subsequent fieldwork has identified an area of settlement dating to the 1st century AD which appears principally to have served as a trading station during the Claudio-Neronian period in the immediate pre-Roman Iron Age and which did not survive long after the Roman occupation of eastern Yorkshire from AD 71 (Crowther and Didsbury 1988). Enclosures of probable Iron Age date are recorded to the north-west of the site (Site 3677). The recovery of Corieltauvian coins of Iron Age date from the Humber foreshore in the area of East Clough (Sites 13456 and 17695) are likely to further reflect trade from the site in the late Iron Age.

3.7 A number of other sites of probable late Iron Age or Romano-British date are recorded on slightly higher ground (around the 10m contour or above) in the vicinity of Melton itself. These include a site to the east of the village on South Lawn (Site 8241) where a 'ladder' settlement consisting of an extensive cropmark complex of enclosures and associated trackways has been dated to between the late pre-Roman Iron Age and the 2nd century AD by trial trenching (Bishop 1999). A field system of unknown date to the south (Site 18087) and further enclosures and trackways to the west have been recorded as cropmarks and may indicate a more extensive settlement complex which may have also connected to the 'ladder' settlement identified during trial trenching within the original proposed wastewater treatment works site (NAA 2000c).

3.8 Possible enclosures and field systems are also recorded further to the west (Site 6654) and the recovery of coins of Roman date in the vicinity (Sites 17690 and 17697) would also suggest a Romano-British date for at least some of these features. The number of recorded Romano-British sites suggests the whole landscape alongside the Humber to the east of Brough was intensively settled and farmed throughout the Roman period.

***Medieval***

3.9 There are no Anglian or later Anglo-Saxon sites or finds recorded within the area. The villages of Melton and Welton may have their origins in the Anglo-Saxon period. *Welleton* is recorded in the Domesday Book *c.*1086 (Mills 1998, 370). The first reference to Brough (*Burg*) is from *c.*1200 (*ibid*, 59), however, it is likely that occupation continued in some form after the abandonment of the formal Roman town throughout the early medieval period. Settlement sites during the medieval period appear to be limited area to the north of the treatment works and rising main, and sites of medieval date include the remains of a timber building recorded to the east of Melton at the western end of the Romano-British 'ladder' settlement (Bishop 1999, 35-39). Quantities of medieval pottery have also been recovered during fieldwalking to the south-west of the village (Site 17686) and metal finds of medieval date have been recovered by detectorists further to the west (Site 17697). An area of former ridge and furrow cultivation of possible medieval date is recorded to the north-west of the proposed treatment works site (Site 10233).

***Post-medieval and modern***

3.10 The landscape within the vicinity of the treatment works and rising main appears to have remained largely devoid of settlement sites well into the post-medieval period. Settlement continued to be within the area to the north in the vicinity of Melton. The existing landscape divisions appear largely to have been established at the time of the enclosure in 1773. The Hull to Selby railway line (Site 8829) was opened in 1840 and a brick and tile works (Site 11549) had been established at East Clough by the mid-19th century. Not until the latter part of the 19th century and into the 20th century did much of the area become more developed, and particularly by industrial activity adjacent to the railway line. This included the Humber Cement Works, a tramway from which had been constructed to extraction pits to the south at Melton Ings before 1927 and which forms the eastern boundary of the treatment works site.

**Fieldwalking survey**

3.11 A rapid fieldwalking survey was undertaken of the 4ha site originally proposed for the Melton wastewater treatment works. All artefacts identified during the rapid fieldwalking survey were of post-medieval and modern date. A total of nine sherds of post-medieval pottery were collected, three fragments of clay tobacco pipe and five fragments of ceramic building material. The material identified was evenly distributed throughout the site area. Given the limited quantity of material noted during the rapid fieldwalking survey no further intensive fieldwalking within the proposed site boundary was undertaken.

**Geophysical survey**

3.12 A gradiometer survey of 2ha (about 50% of the area of the originally proposed treatment works), divided into three blocks, was undertaken by GSB Prospection of Bradford (2002). The survey identified a number of linear and rectilinear ditch-type anomalies that may be of archaeological interest (Figure 2). The responses appeared to form a series of rectangular enclosures on an approximately north to south alignment. A number of pit-type anomalies were also been recorded that may have been archaeological. On the basis of the results of the geophysical survey a probable 'ladder' settlement was identified within the western part of the original site boundary.

**Archaeological trail trenching**

3.13 A programme of archaeological trail trenching was undertaken during May 2002 which confirmed the presence of Romano-British 'ladder' settlement and associated enclosures. The trial trenching established that the areas of archaeological activity suggested by an earlier geophysical survey represent a relatively accurate picture of the extent of the site, though a number of additional features were recorded during excavation. The settlement was defined by a 2m wide ditched trackway with adjoining enclosures on its eastern side. The settlement was located on a gravel ridge and extended north beyond the limit of the proposed development area. Within the area of occupation the remains of one roundhouse, *c.*7.2m in diameter, and a number of pits

and postholes were recorded. There was an area of peripheral activity identified around the settlement which comprised associated boundary and drainage ditches and possible post fence lines. At the highest point upon the gravel ridge archaeological features were encountered at a depth of 0.3m below present ground level, while peripheral features were recorded at a depth of 0.8m to 1.4m cut into alluvial deposits. The projected zone of settlement occupation covers approximately 0.4ha with an area of peripheral activity (ditched enclosures and trackways) covering a further 0.5ha.

3.14 No activity of either prehistoric or medieval date was recorded or identified during the evaluation.

3.15 On the basis of the results of the evaluation the location and extent of the proposed wastewater treatment works was redesigned to avoid both the area of settlement and the area of peripheral activity.

## 4.0 ARCHAEOLOGICAL RESULTS

### Introduction

4.1 Two principal areas of archaeological activity were identified and recorded during the archaeological watching brief. These where a small group of prehistoric features within the area of the treatment works and a Romano-British settlement site on Low Common Lane on the route of the rising main (Figure 2). The results of the investigations at each of these sites is discussed separately.

### Melton wastewater treatment works (MTW03)

4.2 Archaeological monitoring of topsoil stripping on the treatment works site was undertaken during January 2003. During the course of these works previously unknown archaeological remains of prehistoric date were recorded within an area located at the eastern limit of the development (Figure 3). The remains consisted of two small pits, one a cremation burial, both dated from the ceramic and lithic material recovered to the early Bronze Age.

#### *Methodology*

4.3 A continuous archaeological watching brief was undertaken of all topsoil stripping within the area of the wastewater treatment works. Topsoil was removed by a 360° mechanical excavator using a toothless ditching bucket. Once an area was stripped it remained un-trafficked by the contractor until archaeological recording was been completed. On the completion of any necessary excavation within designated areas they were released to the contractor. Where archaeological features were noted during topsoil stripping, the areas affected were hand cleaned and discreet features planned, sectioned, drawn, sampled, photographed, recorded and fully excavated.

***Results***

4.4 Excavation identified alluvial silts and clays that were found to seal a large area of peat, the exception to this being an area located at the eastern limit of the development site. This area was semi-circular in shape, measured approximately 40m north to south and projected westward from the limit of the development for approximately 30m (Figure 2). Here the geology differed, the subsoil having a sandier content and the overall ground level being slightly raised above the surrounding clay and peat. It was on this spit of land that two negative archaeological features were identified and excavated.

4.5 A single pit (6) was the furthest east of the two features. Sub-oval in shape, this feature measured 0.34m east to west, 0.61m north to south and was relatively shallow at 0.14m deep. From its single fill (7) a total of 34 sherds, flakes and crumbs of pottery were recovered, all probably originating from the body of the same vessel. The few determinable characteristics of the recovered sherds suggest commonalities to Early Neolithic and some Iron Age pottery (see Appendix C). However, this tentative interpretation should be balanced against the dating of the lithic assemblage also recovered from the fill (see Appendix B). In total the lithic assemblage comprised six struck flints, including blades or bladelets, a scraper and a rejuvenation flake. Wear patterns vary from very light traces of microwear upon the bladelet and rejuvenation flake to heavy use on the edge utilised blade fragment. The production of flint *in situ* for domestic usage would be consistent with settlement on or near the site, chronological homogeneity being suggested from the nature of the debitage and flaking style in the context of assemblages regionally associated with the later Neolithic or early Bronze Age. Biological remains recovered during environmental analysis were restricted to small amounts of fragmented charcoal or other fine charred materials (see Appendix E).

4.6 Further to the west a second pit (3) was identified which measured 0.33m in diameter and was 0.26m deep, the 'V' shape profile contrasting against the steep sides and flat base of pit 7. The majority of the burnt bone recovered was from the secondary fill (4), as were all diagnostic ceramic finds associated with this feature. The 13 sherds of pottery from context 4 included collar, shoulder, body and base sherds from a Collared Urn of Early Bronze Age date and commonly associated with funerary deposition. Analysis of the samples taken from both the fills confirmed the presence of human bone of an unsexed adult fired at temperatures consistent with the crematory process (se Appendix D). Biological remains recovered during environmental analysis yielded an abundance of charcoal fragments and fragments of burnt animal bone (see Appendix E).

***Discussion***

4.7 Both of the two features recorded within the area of the wastewater treatment works site appear to have been located on an area of slightly raised ground, probably projecting into a wetland environment. The excavated evidence suggest that the two pits examined had different functions. The nature of pit 6 is such that it indicates the deposition of waste materials of probably late Neolithic or early Bronze Age date and possibly associated with nearby occupation. In contrast pit 3 had a clear funerary purpose which is also later in date. It could also be suggested that the positioning of a

cremation burial within this marginal area intentionally adheres to existing ritualised funerary practises of this type and date across the Humber region and elsewhere, as well as demonstrating varying attitudes to landscape and settlement within this transitionally diverse period of the Bronze Age. Whilst limited conclusions can be made from the results of the watching brief within the treatment works site, both the pit and the cremation burial provide further evidence for at least sporadic occupation and utilisation of both the Humber foreshore and the area immediately adjacent at various periods throughout the Bronze Age (see paragraph 3.4 above).

**Low Common Lane (BMP03)**

4.8 The site at Low Common Lane was discovered during the course of a routine watching brief during stripping before insertion of the rising main between the pumping stations at Brough-on-Humber and the new wastewater treatment facilities at Melton. It comprised a 7m wide east to west machine-stripped trench, with the area of archaeological activity extending for a distance of approximately 320m (Figure 4; Plate 1). The site was situated just to the north of a slight eminence in an otherwise low-lying area on the north bank of the Humber and ground water was encountered at about 0.7m below the stripped surface. The remains of a Romano-British double-ditched enclosure were although the site had not been evident from aerial photographic evidence. In addition, during archaeological monitoring of topsoil stripping, a small number of prehistoric linear features and modern field boundaries were recorded along the remainder of the pipeline route.

***Methodology***

4.9 All identified features were hand excavated and then individually drawn, recorded, and photographed using the NAA recording system (a derivation of the MoLAS system). The site code for the Low Common Lane site was BMP03. Linear features were 10–15% sampled and a sample section was excavated from all discrete features, with the exception of the grave and kiln, which were fully excavated (the former under the terms of a Burial Licence obtained from the Home Office for the purpose).

***Results***

4.10 The topsoil (1) was in places deeper than 0.3m and the underlying natural (2) was sand and gravel. Truncation of the archaeological deposits was evident, not least through the partial removal of the southern end of the Roman road (193) and this was probably due to agricultural activity, although the role of inundation cannot be excluded.

*Phase 1: Pre-Roman*

4.11 The only certain pre-Roman feature on the site was a segment of approximately one half of a ring gully (190), although a small group of linears (3, 5 and 7) at the eastern extremity of the trench, and some of the other unphased features (see below) may also have belonged to this phase.

4.12 The segment of ring gully (190) was approximately 10m in diameter and 1.45m in width, surviving to a depth of 0.45m and having a shallow V-shaped profile with a

rounded base (148). The fill was a dark brown silty loam which contained fragments of pottery (174). Possibly due to the degree of truncation (the ditch was completely removed on its western side), no features could be identified within the interior that may have been associated with it and might have enabled a more certain identification to be made.

4.13 Amongst the other linears an interrupted length of gully or ditch (3 and 5), which was a total of 6.4m in length and up to 0.62m wide and 0.11m deep, was found to contain a dark brownish black sandy silt containing fragments of bone (4 and 6). This was of a broad, shallow, U-shaped section and was aligned east-north-east to west-south-west.

4.14 Another linear (7), only the terminal of which was found to protrude from the northern extremity of the excavated area, was set at approximately right-angles to the interrupted ditch (i.e. close to a north to south alignment) and may have been related to it. This was 1.36m long, 0.42m wide, and up to 0.13m deep, with a broad U-sectioned profile. It was found to contain a dark brown sandy silt containing fragments of bone (8).

*Phase 2: Roman*

4.15 There are two principal alignments of Roman features, here described as Phases 2 and 3, with the earlier being approximately north-north-west to south-south-east.

4.16 A truncated ditch terminal (132) was located within the southern half of the excavated area. Another ditch (052) was found to cross the trench and this cut earlier features (092 and 098). A series of features (197) beneath the later road (193), and a gully (26) cut by later ditches, may belong to this phase.

4.17 The ditch terminal (132) was identified for 1.7m from the southern trench baulk and its cut was shown to be 1.25m wide, 0.8m deep and V-shaped in section. It was filled with a dark brown sandy clay (133) and contained a piece of samian (Plate 2).

4.18 Approximately 20m to the east of 132, another ditch (52) was identified on a similar alignment and appeared to extend for the full width of the trench. A 1.03m length of this was examined and this was 0.78m wide, 0.42m deep, and had a U-shaped section. It was filled with a mid to dark greyish brown sandy silt (53). This ditch cut earlier features, including a small pit (92), 0.97m by 0.7m and 0.58m deep, and filled with a mid to dark greyish brown sandy silt (93), and a larger one (98), 1.66m by 1.02m and 0.73m deep, and filled with a mid grey-brown sandy silt with clay (108) over a mid grey-brown sandy silt containing pottery and bone (109).

4.19 The later ditches comprising group 184 were preceded by a 1.60m wide and 0.66m deep gully (026) aligned at approximately right-angles to 132 and 052, the fill of which was a dark brown clayey silt (027).

4.20 Some features (197) under the later road (193: see below) may belong to this phase. These consisted of two sub-rectangular pits (138 and 140) and two postholes (142 and 144). Pit 138 measured 0.85m by 0.53m and was 0.22m deep and was filled with a mid grey brown sandy silt (139) containing pot and bone. Pit 140 measured 0.7m by 0.21m and was 0.2m deep and was filled with a mid to dark grey brown sandy silt

(141) containing pot, bone, and ceramic building material. Posthole 142 was ovoid, measuring 0.6m by 0.22m and 0.16m deep and filled with a medium brown sandy clay silt (143) containing pottery, whilst posthole 144 was 0.42m by 0.25m and 0.12m deep, being filled by a light brown sandy silt (145).

*Phase 3: Roman*

4.21 The second alignment is closer to south-east to north-west and by far the greatest number of features belong to this phase of Roman activity.

4.22 The principal component was an enclosure 70m wide, through which the corridor passed, defined by three successive pairs of parallel ditches (the northern and southern limits could not be defined) and these effectively defined the limit of Roman occupation material (163 to the west and 191 to the east). The ditches were not always dug in the same position where recuts were evident, so phasing is only partial. The pairs to the east were 182, 183 and 184 (182 being earlier than 183, with the relationship of 184 being unclear), whilst to the west they were 185, 186 and 187. The innermost of the eastern ditch pairs was accompanied on its western side by a robber trench (34) which had evidently removed a stone wall, only a few dressed stones from which remained in the fill.

4.23 Ditches 124 and 126 comprise pair 182. Ditch 124 had a V-sectioned profile and was 0.5m wide, 0.5m deep, and filled with a mid-brown clay loam (125). Ditch 126, 2.2m to the west of 124 (centre line to centre line), was of identical dimensions (but with a U-sectioned profile) and also filled with a mid-brown clay loam (127).

4.24 Pair 183 was formed from ditches 128 and 130. Ditch 128 had a U-sectioned profile and was 2.0m wide, 0.6m deep and filled with a dark brown silty loam (129). Ditch 130, 3.0m to the west of 128 (centre line to centre line), was not excavated but was filled with a dark brown loam (131).

4.25 Ditch pair 184 consisted of ditches 022 and 024. Ditch 022 had a shallow U-sectioned profile and was 1.72m wide, 0.63m deep and filled with a dark brown sandy clayey silt (23) which contained a fragmentary decorated bone comb in association with evidence for burning which included charcoal. Ditch 24, 3m to the west of 22 (centre line to centre line), contained a primary fill of mid brown sandy silt (25) which included pottery and bone, and a secondary fill of dark brown clay silt (33).

4.26 On the western side of the enclosure there were three more pairs of ditches (group 163), although these had been heavily truncated by machine and completely removed for half of their length within the northern part of the trench by a drainage sump dug by the contractors, so detailed exploration was not possible. Ditch sections could only be inspected in the edge of the sump where detailed recording was not feasible. The ditch pairings that follow are necessarily tentative and based on comparison of the spacing of the eastern ditches, since no stratigraphic relationships could be established.

4.27 Ditch pair 185 probably comprised ditches 164 and 168. Ditch 164 had what appeared to be a V-sectioned profile (the base could not be examined due to the high water

table) and was 1.1m wide, at least 0.3m deep, and with a primary fill of a dark greyish brown clayey silt with a high organic content (181). A secondary fill of mid to dark brown silty clay (180) was very different in character. Ditch 168, 4.5m to the east of 164 (centre line to centre line), could not be excavated.

4.28 Pair 186 may have been formed from ditches 166 and 176 which could not be excavated but which were 6m apart (centre line to centre line).

4.29 Finally group 187 may have comprised ditches 170 and an unexcavated one observed during insertion of the pipeline. Ditch 170 could not be excavated.

4.30 On the same alignment (and near the centre of the enclosure) was a stone and rubble spread (193) that represented the remains of a road (Plate 3). This included dressed stone and roof tile (one fragment of which bore a stamp of the *legio VI Victrix* dating to AD 213–22) which may have derived from a nearby structure outwith the limits of excavation, possibly on the higher ground immediately to the south of the site (Appendix H; Plate 4).

4.31 As it survived, the road was up to 3.6m wide and formed from a number of discrete patches of foundation material of rubble (55) comprising angular stones (0.01m to 0.15m diameter) and larger blocks (up to 0.2m by 0.3 m), some of which incorporated broken roofing tile (54), with occasional areas of compacted metalling formed from subangular stones (0.05 to 0.15m diameter) in a mid brown sandy silt matrix (56).

4.32 There were fragmentary indications of rudimentary structures and associated occupation deposits (188) aligned on the road, similar to the classic strip-houses of Roman civil settlements, but there was some disturbance of lower-lying contexts to the west of the road, possibly due to the effects of inundation.

4.33 A 3.0m long alignment of large subangular and subrounded stones, up to 0.6m by 0.4m (70), running south-west to north-east, may represent the remains of a wall footing at right-angles to the course of the road, possibly the characteristic strip building of smaller Roman settlements. These large stones included a socket stone, possibly indicative of a doorway. This was associated with what may have been the remains of an occupation deposit containing small fragments of pottery, charcoal, and animal bone (119), although it could conceivably have been a worm-sorted layer at the base of 15 or – for reasons which will be discussed below – a result of inundation.

4.34 Near the eastern edge of the enclosure was a T-shaped kiln (37) with a clay-bonded stone flue and clay superstructure, which may have been used for grain drying (Figure 5; Plate 5). A series of postholes (192) may be associated with this structure, although there was no stratigraphical link to confirm this. The kiln measured 4.4m north-east to south west along its stone-lined flue and slightly more than 3.2m across the T-shaped channel running north-west to south-east at the mouth of the flue (the south-eastern extremity lay beneath the baulk and was not excavated). There was a single 0.26m diameter and 0.3m deep posthole (116) in the base – and near the centre – of the cross-channel which may have been part of the structure, although it is equally possible that it is an earlier posthole coincidentally cut by the channel. The flue itself was 0.6m wide within its coursed, rubble-faced, channel and survived to 0.35m in height (up to

eight courses of stone on the north-western side), whilst the round-ended cross-channel was between 0.35m and 1.0m wide. The unpaved base of the flue (114) had been deepened by up to 0.15m below the bottom of the facing stones, probably by repeated raking out. At the south-western end, there was a shallow bowl-shaped scoop 1.0m in diameter (114) which, although it served as the mouth of the flue and appears to have been used as a fire pit and for raking-out, was actually part of the original cut within which the fabric of the kiln was constructed. This original cut for the flue was 1.6m wide and 0.45m deep and had a shallow U-shaped profile (although the rounded base, as has been explained, had been deepened by use). The remains of yellow clay (97), in some cases burnt to red, were present around the stonework and within the flue (147) above the primary fill (146), implying the use of clay for both lining the cut to receive the facing walls (36 and 38), as well as the formation of a subsequently-collapsed superstructure. There was evidence for the use of mortar in the north-western wall (38), perhaps suggesting repairs to this component at some point after its construction. The basal fill of the flue and the channel was a dark brownish black silt, rich in charcoal and with occasional flecks of mortar and clay (146) and clearly indicative of burning, as was the substantial amount of reddening of the stonework of the flue itself (particularly towards its mouth at the south-western end).

4.35 A series of postholes (group 192), apparently curving around (and centred upon) the kiln may have formed a windbreak or some sort of superstructure. Posthole 42 was 0.4m in diameter and 0.2m deep, containing a greyish brown sandy silt (43); posthole 44 was 0.45m in diameter and 0.2m deep; posthole 48 was 0.33m in diameter and 0.2m deep; and posthole 65 was 0.35m in diameter and 0.24m deep, and was cut by grave cut 94 (see below).

4.36 After the kiln had gone out of use and collapsed, the depression left along the line of the flue and cross-channel was filled with a mid brown sandy silt (39), presumably building up by natural processes of sedimentation, rather than deliberate infilling.

*Phase 4: Roman*

4.37 A final phase of Roman activity is marked by the burial (189) of a crouched inhumation within a crude oval grave cut immediately east of kiln 037 (Figure 5; Plate 6). The suboval grave cut (94) measured 1.07m east to west by 1.1m north to south with its long axis arranged from north-west to south-east. The cut was 0.2m deep. The skeleton (96) was crouched, lying on its left-hand side with its head at the south-east end of the grave. The fill of the grave was a mid brown sandy silt (95) and contained three small sherds of Roman pottery.

*Phase 5: Modern*

4.38 Modern activity is represented by grubbed-up field boundaries (16) and related landscape features (11) which can be matched with the 1st edition Ordnance Survey 6-inch map of the area.

4.39 Linear feature 16 was situated next to the ring gully and to the east of the Roman deposits. It was oriented north to south and was 2.5m wide and 0.75m deep with a U-sectioned profile. It was filled by a mid brown sandy silt (17) which contained post-medieval pottery. Feature 11 was located some 150m to the west of the westernmost

Roman deposits, was oriented north to south and was 0.92m wide and 0.22m deep with a U-sectioned profile. It was filled by a dark brown clayey silt (12).

*Unphased*

4.40 A number of features could not be phased successfully, due to the absence of stratigraphic links or alignment to provide the necessary clues. At least one tree bole and an animal burrow (103 and 110) are essentially unphased, although they may pre-date occupation on the site. Any attempt at phasing these will be dependent upon the analysis of their contents.

4.41 Deposits to the east and west of the low ridge upon which the enclosure and its road were located had the appearance of being formed by inundation subsequent to the Roman period and prior to the present agricultural regime. There were pockets (73–75) of Roman material 'floating' within the general cleaning layer (15) beneath the topsoil (1) which do not make sense stratigraphically unless they have been disturbed subsequent to their deposition in the Roman period – possibly by inundation – and may thus be redeposited.

***Discussion***

4.42 There is some limited evidence for prehistoric activity on the site, which accords well with what is known for the surrounding area and most particularly for the riparian environment on the north of the Humber. The alternating sequence of inlets and low promontories that seems to have been indicated in the immediate vicinity must have presented an attractive environment for exploitation and settlement for prehistoric peoples, occupying the higher ground and utilising their surroundings. One flint may hint at Mesolithic occupation in the vicinity.

4.43 The unexpected discovery of Roman settlement activity exploiting the north to south ridge leading to the Humber is probably as important for its implications as it is for its actual content.

4.44 The present excavation has revealed a sequence of three double-ditched enclosures belonging to the later Roman period, almost directly on top of each other, containing evidence of structures associated with agricultural (the kiln) and industrial activity (the possible strip building and finds of slag). This occupation appears to date to the later 3rd and 4th centuries, but the presence of an early 3rd century tile stamp within the makeup of the road may imply slightly earlier occupation nearby, if it has not been transported from nearby Brough-on-Humber (*Petuaria*). Moreover, the road is quite clearly going somewhere and it was notable that it was aligned towards the highest point of the field through which the pipeline trench passed. Whilst the tile stamp could come from Brough, it is equally possible that it could originate in an official structure of some kind placed on this high point. Indeed, its association with material that may derive from a structure, its presence near the foreshore, and a road providing access might be thought to make some sort of naval connection a possibility.

4.45 The nature of the enclosures is unclear, but cropmarks to the north of the railway line (see Figure 1), possibly representing one or more trackways, may be related. Although in form – an area delineated by pairs of parallel ditches – might be thought to look

military in character, the presence of the corn-drying kiln and the absence of other key aspects of a military presence, such as a road grid or military finds other than the re-used tile stamp, means a military function is open to doubt. Indeed, in the later Roman period, military presence has been suggested on ostensibly civil sites, so there was clearly a blurring of distinctions between the types of sites in the later Roman period.

4.46 It is noteworthy that the dating of this site (3rd to 4th centuries AD) appears to be contiguous with that of the neighbouring site near to the Melton wastewater treatment works some 350m to the east, which was largely dated to the 1st to 3rd centuries AD (NAA 2002c). It is thus tempting to suggest the transferral of occupation from the earlier site to the later, but this may be to oversimplify a complex situation for which the evidence is too incomplete.

4.47 The final act of the Roman period with the excavated area, the crouched inhumation within a shallow grave (presumably pagan, since it was not oriented east to west), was of course placed to one side of the road, so the possibility that settlement on the highest point just to the south could have continued after the abandonment of the enclosures (burial within a settlement famously being against the law in the Roman period, so the grave should lie close to, but outside, any continuing activity).

4.48 Grubbed-out field divisions and a tree bole and are the only evidence for post-Roman and modern activity and can be equated with features on the First Edition Ordnance Survey series.

## 5.0 ASSESSMENT OF SITE ARCHIVE

### Initial analysis

5.1 As part of the assessment of the site the following analysis has been undertaken:

1. A provisional matrix for the sites has been drawn up showing the stratigraphic relationships of all 204 contexts.

2. Plans and sections were checked against context record sheets to ensure cross-referencing. Catalogues of context and finds records have been put onto a computerised database.

3. Catalogues of slide and print photographs, and illustrations have been input onto a computerised database.

5.2 The quantification of the site record is as follows:

***Table 2: Primary archive inventory***

| | *MTW03* | *BMP03* |
|---|---|---|
| Context descriptions | 7 | 197 |
| Plans | 2 | 32 |
| Sections | 2 | 45 |

| | | |
|---|---|---|
| Colour slides (films) | 1 | 6 |
| Black and white photographs (films) | - | 7 |

**Recommendations for further analysis**

5.3 The records for Melton wastewater treatment works site (MTW03) require no further analysis, although a note should be published on the cremation burial including an illustration of the urn.

5.4 A limited amount of additional work needs to be carried out on the site matrix for the Low Common Lane site (BMP03), with reference to the specialist reports, so that more reliably phased information on the site chronology can be attained, particularly in the light of the fact that only a comparatively limited number of stratigraphical relationships could be established. Once more fully phased the context record can be listed and described by phase to produce a more detailed site narrative report. Detailed phase plans should also be drawn up which illustrate all structural features.

5.5 The results of the detailed analysis of the archive should be integrated with specialist analysis of the finds recovered and synthesised into an illustrated publication report.

**Storage and curation**

5.6 The written, drawn and photographic records and (unprocessed) soil samples are currently held by NAA.

5.7 The retention and disposal policy for the assemblages from both Melton wastewater treatment works and Low Common Lane will be to retain the vast majority of artefacts. This is because a high proportion of the material is derived from secure contexts and the assemblage is important in both local and regional terms. The archive will be deposited with the East Riding of Yorkshire Museum Service after completion of specialists' studies.

## 6.0 SPECIALIST FINDS ASSESSMENTS

**Processing and quantification**

6.1 Washing of the bulk finds, including animal bone, was completed and all finds recovered have been recorded, marked where appropriate, packed in labelled bags and placed in labelled museum storage boxes. A finds database was produced in order of context number. This database tabulates the artefact type, quantity and includes a brief description. The artefact assemblages are summarised below. Once prepared the material was sent to the specialists for assessment.

***Table 3: Finds assemblages***

| | *MTW03* | *BMP03* |
|---|---|---|
| Pottery sherds | 50 | 693 |
| Ceramic building materials | - | 658 |
| Fired clay | - | 28 |

| | | |
|---|---|---|
| Lead and lead alloy | - | 5 |
| Copper alloy | - | 19 |
| Iron | - | 36 |
| Slag material | - | 16 |
| Animal bone fragments | 14 | 969 |
| Human skeletons (including cremations) | 1 | 1 |
| Human bone | - | 11 |
| Wood | - | 1 |
| Shell | - | 184 |
| Flint | 6 | 9 |
| Worked stone | - | 18 |
| Other small finds | - | 4 |
| Samples | 3 | 62 |

**Flint**

Peter Makey (Appendix C)

***Summary***

6.2 A total of six struck flints were recovered from the treatment works site, all from pit 6. The assemblage consisted of two blades, a bladelet , an edge utilised blade, a core rejuvenation flake and a scraper and appears to date to the late Neolithic or early Bronze Age. The material is domestic in nature and consistent with a settlement site.

6.3 The excavations at Low Common Lane produced four struck flints. The assemblage comprises two flakes, one blade and an awl. All of the material was of indeterminate prehistoric date and was residual within later Roman contexts.

***Recommendations***

6.4 Although the stratified lithic assemblage from the treatment works site is probably chronologically homogeneous and related to settlement activity, the potential of such as small assemblage is limited. Two of the flints should be illustrated.

6.5 The assemblage from Low Common Lane is both small in size and is not chronologically homogeneous, which limits its potential. The pieces represent nothing more than an average background scatter for the region, with the notable exception of the awl which merits illustration. This implement is typically associated with the manufacture of clothing and is usually found on domestic occupation sites. Though the evidence is admittedly slight, it could indicate the presence of a Mesolithic settlement in the near vicinity.

**Prehistoric pottery**

T G Manby (Appendix D)

***Summary***

6.6 A total of 49 sherd of prehistoric pottery were recovered from the excavations at the treatment works site. Thirteen of the sherds were of an early Bronze Age collared urn from cremation pit 3. No similar collared urns have previously been recorded from the

immediate vicinity. A further 34 sherds were from the fill of pit 6 and were of probable Early Neolithic date.

***Recommendations***

6.7 Sufficient fragments of the collared urn survive to enable its shape to be reconstructed and the vessel to be illustrated. A note on the collared urn should be published.

**Cremated human bone**

Malin Holst (Appendix E)

***Summary***

6.8 The cremated human bone from pit 3 on the wastewater treatment works site was recovered both from and collection and the processing of samples (Appendix F). The single burial was that of an adult of 18 years of age or more of indeterminate sex. The bone had been thoroughly cremated but the size of the assemblage suggested that the majority of the bone had not been collected and buried. No evidence of pathology was noted. A small quantity of burn fragments of animal bone was also recovered from within the processed samples (Appendix F).

***Recommendations***

6.9 Full osteological analysis of the burial is not considered necessary. The results of the assessment should however be included in any publication of the excavations on the site.

**Romano-British pottery**

Peter Didsbury (Appendix G)

***Summary***

6.10 A total of 693 sherds of pottery, weighing 17,108g, and having an average sherd weight (ASW) of 24.7g, was recovered from the excavations at Low Common Lane. With the exception of three post-medieval sherds, all the pottery was of Roman date, the overwhelming majority belonging to the later 4th century.

6.11. One of the two contexts attributed to Phase 2, linear feature 132, has a small assemblage of probable later 2nd century date. Other slight signs of site activity of this period occur as residual sherds, notably samian, in a small number of contexts. The other context, linear feature 52, has an assemblage contemporary with the late 4th century assemblages from Phase 3.

6.12 A small number of contexts attributed to 'Phase 2?' would all appear to belong to at least the late 3rd to mid 4th century. They may, therefore, represent a real chronological phase later than Phase 2, but earlier than Phase 3 as dated below.

6.13 The vast majority of the site assemblage, that from Phase 3, dates from the second half of the 4th century, the latest diagnostic material dating to after *c.*AD 360/370. Phase 3

contexts have typical regional assemblages of this date, comprising East Yorkshire greywares, Crambeck products, and Huntcliff ware.

6.14 Two vessels in particular are, however, of some intrinsic interest. The first is a Lincolnshire import, a double lid-seated jar attesting to socio-economic contacts across the Humber in the second half of the 4th century. The other is a 'Smith's Tools' sherd.

***Recommendations***

6.15 No further work is deemed particularly necessary on this material, though any final publication could usefully be accompanied by a short illustrated discursive account of the pottery. The 'Smith's Tools' sherd ought to form the subject of a short illustrated note in an appropriate journal. All material should be retained in an appropriate museum in the interests of further ceramic research in the region.

**Ceramic building materials**

John Tibbles (Appendix H)

***Summary***

6.16 An assemblage of 652 fragments of ceramic building material with a total weight of 53,383g from 25 contexts was submitted for assessment from Low Common Lane.

6.17 The majority of the ceramic building material assemblage is of a Romano-British date and represents the residual elements of Romano-British activity. Its presence among the finds assemblage could reflect a high status building within the vicinity. Although a range of ceramic building material normally associated with various aspects of Romano-British building construction was noted, the paucity suggests that the assemblage is likely to represent re-deposition. A tile stamp of the *legio VI* was recovered.

6.18 The remainder of the assemblage is of post-medieval date; examples of land drains, most likely to represent casual deposition or agricultural activity.

***Recommendations***

6.19 The stamp is worthy of publication with particular reference to the corpus increasing number of legionary stamps recently recovered within the East Yorkshire region.

6.20 Fabric analysis should be completed, provisionally by visual examination to refine identification of the queried forms and dating. This should also be undertaken for comparative purposes with other Romano-British ceramic building assemblages within the region to try to ascertain source. Further scientific analysis should be undertaken if deemed worthy after further study.

6.21 Should further work be undertaken, the programme of work should include the integration of data and the reconstruction of materials (where possible) to aid and refine dating, identification and to allow the possibility of complete examples to be recorded within the assemblage.

6.22 Illustrations of the ceramic building material including the stamp and a selection forms that display diagnostic features such as representative examples of types of flange and lower-cut-away, vents and combing should be prepared. The number of illustrations cannot be determined at this stage as any additional examples of interest from further work and reconstruction should also be included.

6.23 It is recommended that upon completion of work on the assemblage samples of fabrics should be retained, and a selective discard policy implemented prior to deposition of the finds assemblage as whole within the appropriate museum.

**Slag material**

Jane Cowgill (Appendix J)

***Summary***

6.24 A total of 987g (16 pieces) of slag and associated materials from Low Common Lane were submitted for recording. Only ten of the pieces (746g) submitted for recording are probable slags and most of these are the by-products of iron smithing. The smithing assemblage from this site is too small to suggest that a smithy actually operated there. This group perhaps represents the by-products of an itinerant smith passing through the settlement.

***Recommendations***

6.25 No further work is necessary on this assemblage.

**Small finds**

Conservation: Leesa Vere-Stevens (Appendix K)
Assessment: M C Bishop (Appendix L)

***Conservation***

6.26 A total of 51 finds from Low Common Lane were assessed and 4 X-ray plates produced. The number of objects in each material category is listed below:

| | |
|---|---|
| Bone | 1 |
| Copper alloy | 8 |
| Lead alloy | 5 |
| Iron | 35 |
| Shale | 1 |
| Wet-packed wood | 1 |

***Assessment***

6.27 Small finds at Low Common Lane mostly came from excavated contexts, although those from the general cleaning layer (15) represent material at the bottom of the plough soil and thus possibly worm-sorted to a great or lesser extent. Examination of the spoil heaps by metal detector (1) failed to produce much beyond post-medieval

and modern items and one Roman coin.

6.28 The small finds provide a mixed picture of industrial, agricultural or horticultural, and domestic activities on the site at Low Common Lane.

***Recommendations***

6.29 No further work on the small finds should be necessary.

6.30 An illustrated catalogue of the identifiable Roman small finds should be published, although the presence of certain categories of find (such as nails or lead alloy waste) need only be summarised in tabular form.

**Human skeletal remains**

Joanna Higgins (Appendix M)

***Summary***

6.31 A single flexed inhumation within an oval grave was situated immediately adjacent to the kiln at Low Common Lane. The skeleton was orientated north-east to south-west, and there were no accompanying grave goods.

6.32 The single skeleton (96) was non-adult, and was of good general preservation, over 75% complete, and moderately fragmented. The cranium was highly fragmented.

6.33 A small amount of disarticulated human bone was found in three additional contexts. These consisted of well-preserved infant bone fragments (149 and 159) except for those found in the kiln flue fill (39), which may be associated with skeleton 096.

***Recommendations***

6.34 Skeleton 96 should be subject to full basic analysis. Age, sex, pathologies, metric and non-metric data should be recorded where possible. Comparisons with contemporary inhumations may be drawn to demonstrate any unusual findings.

6.35 The disarticulated bone from additional contexts should be identified, and unusual pathologies or other abnormalities should be noted.

6.36 The skeletal remains should be retained in a suitable location subsequent to analysis, for future research purposes.

**Biological remains**

John Carrott, Allan Hall, Deborah Jaques, Kathryn Johnson and Harry Kenward (Appendix N)

***Summary***

6.37 Sediment samples from 27 contexts, a small quantity of hand-collected shell and four boxes of hand-collected bone were submitted for an evaluation of their bioarchaeological potential from the site at Low Common Lane. Most of the deposits

were assigned to one of three phases of Roman activity. Seven samples were selected for evaluation.

6.38 The plant remains recovered were of limited interpretative value except inasmuch as the silicified material probably points to the burning of a mass of hulled grains, and this is entirely consistent with the nature of contexts 39 (fill of flue of T-shaped kiln) and 146 (burnt deposit). Certainly they imply either that the kiln was used for drying grain, or that a mass of grain was used as fuel. The traces of insect and the remains of the burrowing land snail *Cecilioides acicula* are most likely all to be modern. The other mollusc remains recovered from the samples were a mixture of dry and damp grassland forms, with some taxa also able to exploit shadier habitats in woodland or scrub.

6.39 Almost all of the hand-collected shell was of rather poorly preserved oyster from deposits of Roman date. The small quantity of remains recovered, and their generally poor condition, renders the assemblage of little interpretative value. However, it seems most likely that the oyster shell derives from human food waste.

6.40 The deposits produced a small, but largely well preserved, assemblage of bone dominated by the remains of the major domesticates. Skeletal element representation suggested that the remains were mostly butchery waste, from both primary and secondary carcass preparation, although a component of domestic refuse was indicated by the presence of some bird and hare remains. The butchery techniques noted were typical of Roman vertebrate assemblages and comparable to other sites in the region.

***Recommendations***

6.41 No further analysis of the sediment samples or the remains recovered from them is warranted. Well preserved vertebrate material from rural sites of Roman date is unusual and, although this is not a large assemblage, the data from the hand-collected bones could provide a valuable contribution to any synthetic projects carried out in the region.

## 7.0 STATEMENT OF POTENTIAL

### Site potential

7.1 The presence of features of late Neolithic and early Bronze Age date on the site of the wastewater treatment works at Melton is of considerable significance in relation to other recorded sites in the area. The dating of the material and the lack of other collared urns in the area is of particular importance in relating the site to others of similar date along the Humber Estuary and the southern Wolds.

7.2 With respect to the Romano-British settlement site investigated on Low Common Lane, recent work on the northern Humber littoral has improved our understanding of the later Iron Age and Roman landscape and provided a more rounded picture beyond the traditional categorisation of settlements as military, urban, or rural civilian. Not only is our understanding of the variety of settlement typology being enhanced, but

also the nature of both continuity and discontinuity that is to be associated with the arrival of the Roman presence in the area. Thus whilst the military and urban settlement at Brough-on-Humber (*Petuaria*) is associated with villas at Welton Wold (Wilson 1972, 311; 1973, 281–2) and Brantingham (Liversidge *et al* 1973), it is now added to by the discovery of coastal trading sites like Redcliff (Crowther and Creighton 1989) and inland 'ladder settlements' like that near Melton (Bishop 1999).

7.3 The present work at Low Common Lane appears to have added yet another category of settlement to the mix and one that also shows signs of diachronic continuity. Now, in addition to questions raised about the relationship between an urban and military centre like Brough with its rural hinterland, it is necessary to factor in the relationship of smaller, possibly semi-official, settlements like Low Common Lane to both the urban or military and rural landscapes and their environments. As at the settlement identified near the Melton wastewater treatment works site (NAA 2002c), Low Common Lane also provides more information about the way in which the topography of the Humber littoral was being exploited, with settlements apparently being placed on gravel spurs protruding into the lower-lying areas.

**Site archive potential**

7.4 As a result of the small number of features investigated on the wastewater treatment works site and dispersed nature of the evidence the potential of the site archive for further analysis is limited. Further research and publication of the collard urn from the cremation pit is however merited.

7.5 The excavations at Low Common Lane provided an opportunity to examine a Romano-British site of an unusual kind in the hinterland of Brough-on-Humber, perhaps better known for its villas and field systems. The late date of the site may be significant to changes in the prevailing social and security situations in the area, with the rise and ultimate fall of the villa estates and possible raiding along the East Coast. It thus provides another dimension to the Roman occupation of the area by comparison with the rural landscape at Melton (Bishop 1999), only a few kilometres away.

7.6 The stratigraphic record is not very complex and the number of relationships that support phasing is limited. There are also problems introduced into interpretation by the possibility of post-occupational inundation as a source of disturbance to *in situ* deposits. Nevertheless, the structural record is sufficiently intact to merit publication.

7.7 The pottery and small finds require publication and illustration, since they provide important information about the dating and indications of the use of the site. Further work may be necessary on the fabric of the ceramic building material.

7.8 The environmental samples require no further work since the plant remains were of limited value and the insect and land snail assemblages were probably modern.

7.9 Partly because of the unusual character of the site, but partly also because of its relationship to other sites of different types in the vicinity, the site at Low Common Lane is undoubtedly of regional significance. Although neither the stratigraphic

record nor the artefactual and environmental assemblages are of regional significance on an individual basis, in the light of their relationship to the structural evidence, the assemblages may be considered of regional significance and may be key to our understanding of the role and nature of Low Common Lane within the landscape around Brough-on-Humber in the later Roman period.

## 8.0 PROPOSED POST-EXCAVATION PROGRAMME

### 8.1 Summary

The aim of the post-excavation programme will be to produce a final report for publication and a well ordered, clearly indexed archive for deposition in the East Riding of Yorkshire County Council Museum Service.

In accordance with English Heritage guidelines (1991, 21) this work will be approached in two stages:

1. Compilation of a research archive, involving work on the stratigraphy, artefacts and environmental data and the production of catalogues, illustrative material and both narrative and artefact reports.

2. Selection of data from the research archive to produce an integrated report text for publication.

The overall sequence of the programme would be as follows:

Stage 1: stratigraphic analysis

Stage 2: site narrative and archive illustrations

Stage 3: preparation of specialist reports and radiocarbon dates

Stage 4: integration and synthesis of stratigraphic and artefactual records

Stage 5: preparation of publication report text and illustrations

Stage 6: archive deposition

### 8.2 Stratigraphic record

Stage 1: The need to finalise a secure understanding for the sequence of events is of primary importance. In particular attention should be paid to the role of inundation as an agent for disturbance and the information from finds that may assists in relative phasing. It is important that the stratigraphic matrix represents an accurate chronology of the excavated evidence, as this will form the basis of all further research and analysis.

Stage 2: Once the stratigraphic sequence has been established a detailed site narrative

report, based upon each phase of the site development, will be prepared. Archive illustration phase plans will also be drawn up.

Stage 3: Further literary research of other excavated sites would be undertaken to assist with the interpretation of the excavated evidence, and to place Low Common Lane within its local, regional and national contexts. Parallels with other Romano-British sites need to be examined, particularly the pottery assemblages and types of structures represented.

Stage 4: The stratigraphic and structural evidence will be integrated with the artefactual and environmental reports. The chronology and distribution of artefacts will be analysed to establish the use of structures and function of different site areas within each phase. Environmental data may give some indication of the duration of any interval between the three phases of ditched enclosure.

Stage 5: Using the relevant specialist material a synthesised summary text will be prepared for publication together with the neighbouring site adjacent to Melton wastewater treatment works.

Stage 6: Upon completion of the publication report and associated specialist assessments the indexed site archive (paper and artefactual records) will be deposited with the East Riding of Yorkshire Museum Service.

**Artefactual record**

The main assemblage of pottery from both the treatment works site and Low Common Lane requires a short illustrated discursive account to accompany the published report for the site.

The ceramic building material from Low Common Lane may require the integration of data and the reconstruction of materials (where possible) to aid and refine dating, identification and to allow the possibility of complete examples to be recorded within the assemblage. Illustrations of the ceramic building material including the stamp and a selection of forms that display diagnostic features should be included in the published report.

No further work is required on the other artefactual assemblages prior to publication.

**Ecofactual record**

Skeleton 96 (low Common Lane) should be subject to full basic analysis and the disarticulated bone from additional contexts should be identified, and unusual pathologies or other abnormalities should be noted.

No further work is required on the other environmental assemblages.

## 9.0 CONCLUSION

9.1 The monitoring of topsoil stripping on the new wastewater treatment works site at Melton identified two pit features. One contained domestic refuse of probable late Neolithic or early Bronze Age date which was probably associated with nearby occupation. The other contained a collared urn of early Bronze Age date and the associated cremated bone of an adult, the only collared urn recovered to date within the area. Although isolated features these provide further evidence of activity of this date within this region of the Humber Estuary and southern Wolds.

9.2 More extensive evidence of settlement was identified at Low Common Lane during monitoring of topsoil stripping along the rising main linking Brough-on Humber with the new treatment works. Pre-Roman activity on the site included a series of gullies and part of a ring ditch. These were succeeded by a sequence of three double-ditched enclosures, placed one on top of the other, and datable to the later Roman period. The nature of these enclosures was unclear, but the area delineated included a road running approximately north to south towards the highest point in the field (just south of the line of the easement) and may represent the transferral of settlement from the neighbouring Romano-British settlement previously identified by trial trenching near the treatment works site at Melton. The makeup of the road included a re-used tile stamp of the *legio VI Victrix* dating to the beginning of the 3rd century AD. The final phase of Roman activity saw a pagan crouched inhumation inserted near a corn drying kiln.

9.3 The site at Low Common Lane is of regional significance and warrants further analysis of the site archive. This would not require further analysis of the pottery or small finds assemblages, but the results of the assessments presented here should be integrated into a re-assessment of the stratigraphic record. A final report for publication should be produced on the results of the excavation for inclusion in an appropriate regional journal. This could be most usefully combined with the publication of the trial trenching excavation at the neighbouring chronologically contiguous (and possibly preceding) site near Melton wastewater treatment works, as well as providing the opportunity for a synthesised discussion of the two sites. The report should also include a note on the prehistoric features recorded during the monitoring at the treatment works site.

Report No: NAA 04/61
Date: June 2004
Project No: 430
Text: M C Bishop and Ben Westwood
Edited by: Peter Cardwell
Illustrations: Andy Durkin

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# Appendix A

## MELTON WASTEWATER TREATMENT WORKS

## CONTEXT AND FINDS CATALOGUE

| Context | Description | cbm | cinder | flint | human bone | pottery | sample |
|---|---|---|---|---|---|---|---|
| 1 | Layer (topsoil) | | | | | 1 | |
| 2 | Natural subsoilt | 1 | | | | 2 | |
| 3 | Cut of possible cremation pit | | | | | | |
| 4 | Secondary burnt fill of 03 | | | | 15 | 13 | 1 |
| 5 | Primary fill of 03 | | | | | | 1 |
| 6 | Cut of small pit | | | | | | |
| 7 | Fill of 06 | 3 | 1 | 6 | | 34 | 1 |
| TOTAL | | 4 | 1 | 6 | 15 | 50 | 3 |

## Appendix B

## LOW COMMON LANE

## CONTEXT AND FINDS CATALOGUE

| Context | Group no | Description | animal bone | worked bone | cbm | Cu alloy | Fe | fired clay | flint | glass | human bone | Pb | pottery | sample | shale | shell | skeleton | slag | stone | wood |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | layer (topsoil) | | | 5 | 2 | | | | | 1 | | 13 | | | | | | | |
| 2 | | natural deposit | | | | | | | | | | | | | | | | | | |
| 3 | 195 | Gully cut | | | | | | | | | | | | | | | | | | |
| 4 | 195 | Fill of gully 003 | | | | | | | | | | | | 2 | | | | | | |
| 5 | 195 | Gully cut | | | | | | | | | | | | | | | | | | |
| 6 | 195 | Fill of gully 005 | | | | | | | | | | | | 2 | | | | | | |
| 7 | 195 | Gully cut | | | | | | | | | | | | | | | | | | |
| 8 | 195 | Fill of gully 007 | | | | | | | | | | | | | | | | | | |
| 9 | 195 | Stakeholes within 007 | | | | | | | | | | | | | | | | | | |
| 10 | 195 | Fill of stakeholes 009 | | | | | | 10 | | | | | | | | | | | | |
| 11 | | Gully/ditch cut | | | | | | | | | | | | | | | | | | |
| 12 | | Fill of gully 011 | | | | | | | | | | | | 2 | | | | | | |
| 13 | | Posthole within 011 | | | | | | | | | | | | | | | | | | |
| 14 | | Fill of posthole 013 | | | | | | | 1 | | | | | | | | | | | 1 |
| 15 | 188 | General cleaning layer | 276 | | 297 | 3 | 15 | | | | | 2 | 276 | | 1 | 69 | | 3 | 2 | |
| 16 | | Ditch cut | | | | | | | 2 | | | | | | | | | | | |
| 17 | | Fill of ditch 016 | | | 3 | | 1 | | | | | | 3 | | | | | | | |
| 18 | | Gully cut | | | | | | | | | | | | | | | | | | |
| 19 | | Fill of gully 018 | | | | | | | | | | | | | | | | | | |
| 20 | | Linear cut | | | | | | | | | | | | | | | | | | |
| 21 | | Fill of linear 020 | 54 | | 13 | | 1 | 3 | 1 | | | | 18 | | | 17 | | 1 | | |

| Context | Group no | Description | animal bone | worked bone | cbm | Cu alloy | Fe | fired clay | flint | glass | human bone | Pb | pottery | sample | shale | shell | skeleton | slag | stone | wood |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 184 | Ditch cut | | | | | | | | | | | | | | | | | | |
| 23 | 184 | Fill of ditch 022 | 58 | 1 | 1 | 12 | 1 | | | | | | 1 | | | 2 | | | | |
| 24 | 184 | Ditch cut | | | | | | | | | | | | | | | | | | |
| 25 | 184 | Fill of ditch 024 | 24 | | | | | 1 | | | | | 27 | | | 2 | | | | |
| 26 | | Gully cut | | | | | | | | | | | | | | | | | | |
| 27 | | Fill of gully 026 | 14 | | | | | | | | | | | 2 | | | | | | |
| 28 | 184 | Ditch cut (=022) | | | | | | | | | | | | | | | | | | |
| 29 | 184 | Fill of ditch 028 | 5 | | | | | | | | | | | 2 | | | | | | |
| 30 | 184 | Fill of ditch 028 | 9 | | | | | | | | | | | 1 | | | | | | |
| 31 | | Posthole cut | | | | | | | | | | | | | | | | | | |
| 32 | | Fill of posthole 032 | | | | | | | | | | | | 1 | | | | | | |
| 33 | | Upper fill of ditch 024 | | | | | | | | | | | | | | | | | | |
| 34 | | Robber trench cut | | | | | | | | | | | | | | | | | | |
| 35 | | Fill of robber trench 035 | 10 | | 3 | | | 1 | | | | | 2 | | | | | | | |
| 36 | 37 | S wall of kiln flue | | | | | | | | | | | | | | | | | | |
| 37 | 37 | Group number for kiln | | | | | | | | | | | | | | | | | | |
| 38 | 37 | N wall of kiln flue | | | | | | | | | | | | 1 | | | | | | |
| 39 | 37 | Fill of flue | 58 | | | | | 1 | | | 3 | | 16 | 2 | | | | | | |
| 40 | | Palaeochannel | | | | | | | | | | | | | | | | | | |
| 41 | | Fill of palaeochannel 040 | | | | | | | | | | | | | | | | | | |
| 42 | 192 | Posthole cut | | | | | | | | | | | | | | | | | | |
| 43 | 192 | Fill of posthole 042 | | | | | | | | | | | | | | | | | | |
| 44 | 192 | Posthole cut | | | | | | | | | | | | | | | | | | |
| 45 | 192 | Fill of posthole 044 | | | | | | | | | | | | | | | | | | |
| 46 | | Rectangular pit cut | | | | | | | | | | | | | | | | | | |
| 47 | | Fill of pit 046 | 4 | | | | | | | | | | 2 | | | | | 1 | | |
| 48 | 192 | Posthole cut | | | | | | | | | | | | | | | | | | |
| 49 | 192 | Fill of posthole 048 | | | | | | | | | | | | | | | | | | |
| 50 | | Rectangular feature cut | | | | | | | | | | | | | | | | | | |

| Context | Group no | Description | animal bone | worked bone | cbm | Cu alloy | Fe | fired clay | flint | glass | human bone | Pb | pottery | sample | shale | shell | skeleton | slag | stone | wood |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | | Fill of rectangular feature 050 | | | | | | | | | | | | | | | | | | |
| 52 | | Linear feature cut | | | | | | | | | | | | | | | | | | |
| 53 | | Fill of linear feature 052 | 2 | | 1 | | | | | | | | 3 | 2 | | | | | | |
| 54 | 193 | Layer of stone and tile rubble | 6 | | 7 | | | | | | | | 6 | | | 5 | | | | |
| 55 | 193 | Layer of stone rubble | 38 | | 157 | | 3 | 4 | | | | 2 | 18 | | | 1 | | 1 | 3 | |
| 56 | 193 | Possible metalling | | | | | | | | | | | | | | | | | | |
| 57 | 193 | Linear feature cut | | | | | | | | | | | | | | | | | | |
| 58 | 193 | Fill of linear feature 057 | | | | | 1 | | | | | | | | | | | | | |
| 59 | | Subrectangular feature cut | | | | | | | | | | | | | | | | | | |
| 60 | | Fill of subrectangular feature 059 | | | | | | | | | | | | | | | | | | |
| 61 | | Amorphous feature cut | | | | | | | | | | | | | | | | | | |
| 62 | | Fill of amorphous feature 061 | | | | | | | | | | | | | | | | | | |
| 63 | | Linear feature cut | | | | | | | | | | | | | | | | | | |
| 64 | | Fill of linear feature 063 | | | | | | | | | | | | | | | | | | |
| 65 | 192 | Posthole cut | | | | | | | | | | | | | | | | | | |
| 66 | 192 | Fill of posthole 065 | | | | | | | | | | | | | | | | | | |
| 67 | 194 | Dark fill between 054 and 055 | 144 | | 13 | | 3 | 2 | 1 | | | | 33 | | | 9 | | | 11 | |
| 68 | 188 | Group of stones | | | | | | | | | | | | | | | | | | |
| 69 | 188 | Group of stones | | | | | | | | | | | | | | | | | | |
| 70 | 188 | Group of stones | | | | | | | | | | | | 1 | | | | | 1 | |
| 71 | 188 | Patch of stone and opus signinum | 1 | | 11 | | | | | | | | 1 | | | | | | | |
| 72 | 188 | Patch of stone and tile rubble | | | 1 | | | | | | | | | | | | | | | |
| 73 | 188 | Group of stones | | | | | | | | | | | | | | | | | | |
| 74 | 188 | Patch of stone and bone | | | | | | | | | | | | | | | | | | |
| 75 | | 'L'-shaped charcoal patch | | | | | | | | | | | | | | | | | | |
| 76 | | Group of stones | | | | | | | | | | | | | | | | | | |
| 77 | | Layer of material E of stones | 81 | | 16 | | 2 | 3 | 1 | | | 1 | 134 | 3 | | 34 | | 1 | 1 | |
| 78 | | Posthole/gully cut | | | | | | | | | | | | | | | | | | |
| 79 | | Fill of posthole/gully 078 | 4 | | 1 | | 1 | | | | | | 2 | | | | | 2 | | |

| Context | Group no | Description | animal bone | worked bone | cbm | Cu alloy | Fe | fired clay | flint | glass | human bone | Pb | pottery | sample | shale | shell | skeleton | slag | stone | wood |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | Posthole/gully cut | | | | | | | | | | | | | | | | | | |
| 81 | | Fill of posthole/gully 080 | | | | | | | | | | | | | | | | | | |
| 82 | | Posthole/gully cut | | | | | | | | | | | | | | | | | | |
| 83 | | Fill of posthole/gully 082 | | | | | | | | | | | | | | | | | | |
| 84 | | Posthole/gully cut | | | | | | | | | | | | | | | | | | |
| 85 | | Fill of posthole/gully 084 | | | | | | | | | | | | | | | | | | |
| 86 | | Posthole cut | | | | | | | | | | | | | | | | | | |
| 87 | | Fill of posthole 086 | | | | | | | | | | | | | | | | | | |
| 88 | | Posthole cut | | | | | | | | | | | | | | | | | | |
| 89 | | Fill of posthole 088 | | | | | | | | | | | | | | | | | | |
| 90 | | Pit cut | | | | | | | | | | | | | | | | | | |
| 91 | | Fill of pit 090 | 18 | | 6 | 1 | 1 | 2 | | | | | 10 | | | | | | | |
| 92 | | Pit cut | | | | | | | | | | | | | | | | | | |
| 93 | | Fill of pit 092 | 1 | | | 1 | | | 1 | | | | 8 | 2 | | 2 | | | | |
| 94 | 189 | Grave cut | | | | | | | | | | | | | | | | | | |
| 95 | 189 | Fill of grave 094 | | | | | | | | | | | 3 | 12 | | | | | | |
| 96 | 189 | Skeleton in grave 094 | | | | | | | | | | | | | | | 1 | | | |
| 97 | 37 | Clay around group 037 | | | | | | | | | | | | | | | | | | |
| 98 | | Pit cut | | | | | | | | | | | | | | | | | | |
| 99 | | Tertiary fill of pit 098 | | | | | | | | | | | | | | | | | | |
| 100 | | Fill of pit 101 | | | | | | | | | | | | | | | | | | |
| 101 | | Pit cut | | | | | | | | | | | | | | | | | | |
| 102 | | Fill of pit 103 | | | | | | | | | | | | | | | | | | |
| 103 | | Pit cut | | | | | | | | | | | | | | | | | | |
| 104 | | Fill of pit 090 | | | | | | | | | | | | | | | | | | |
| 105 | | Feature cut | | | | | | | | | | | | | | | | | | |
| 106 | 194 | Dark brown layer | 32 | | 27 | | 2 | | | | | | 10 | | | 1 | | 4 | | |
| 107 | 193 | Stone surface | 29 | | 82 | | | 1 | | 1 | | | 34 | | | 29 | | 1 | | |
| 108 | | Secondary fill of pit 098 | | | | | | | | | | | | 1 | | | | | | |

| Context | Group no | Description | animal bone | worked bone | cbm | Cu alloy | Fe | fired clay | flint | glass | human bone | Pb | pottery | sample | shale | shell | skeleton | slag | stone | wood |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 109 | | Primary fill of pit 098 | 11 | | 1 | | | | | | | | 6 | 1 | | 1 | | | | |
| 110 | | Cut of tree bole | | | | | | | | | | | | | | | | | | |
| 111 | | Fill of tree bole 110 | 3 | | | | | | 1 | | | | 11 | | | | | | | |
| 112 | 37 | Posthole cut within grave | | | | | | | | | | | | | | | | | | |
| 113 | 37 | Fill of posthole 112 | | | | | | | | | | | | | | | | | | |
| 114 | 37 | Gully cut | | | | | | | | | | | | | | | | | | |
| 115 | 37 | Fill of gully 114 | | | | | | | | | | | | | | | | | | |
| 116 | 37 | Posthole cut | | | | | | | | | | | | | | | | | | |
| 117 | 37 | Secondary fill of posthole 116 | | | | | | | | | | | | | | | | | | |
| 118 | 37 | Primary fill of posthole 116 | | | | | | | | | | | | | | | | | | |
| 119 | 188 | Occupation layer | | | | | | | | | | | | | | | | | | |
| 120 | 190 | Ring ditch cut | | | | | | | | | | | | | | | | | | |
| 121 | 190 | Fill of ring ditch 120 | | | | | | | | | | | | | | | | | | |
| 122 | 193 | Linear feature cut | | | | | | | | | | | | | | | | | | |
| 123 | 193 | Fill of linear feature 122 | 6 | | 4 | | 1 | | | | | | 4 | 1 | | | | | | |
| 124 | 182 | Ditch cut | | | | | | | | | | | | | | | | | | |
| 125 | 182 | Fill of ditch 124 | | | | | | | | | | | | 2 | | | | | | |
| 126 | 182 | Ditch cut | | | | | | | | | | | | | | | | | | |
| 127 | 182 | Fill of ditch 126 | | | | | | | | | | | | 2 | | | | | | |
| 128 | 183 | Ditch cut | | | | | | | | | | | | | | | | | | |
| 129 | 183 | Fill of ditch 128 | 6 | | 3 | | | | | | | | 7 | 2 | | | | | | |
| 130 | 183 | Ditch cut | | | | | | | | | | | | | | | | | | |
| 131 | 183 | Fill of ditch 130 | | | | | | | | | | | | | | | | | | |
| 132 | | Linear feature cut | | | | | | | | | | | | | | | | | | |
| 133 | | Fill of linear feature 132 | 1 | | 2 | | | | 1 | | | | 2 | 2 | | | | | | |
| 134 | | Linear feature cut | | | | | | | | | | | | | | | | | | |
| 135 | | Fill of linear feature 134 | | | | | | | | | | | | | | | | | | |
| 136 | | Pit cut | | | | | | | | | | | | | | | | | | |
| 137 | | Fill of pit 136 | | | | | | | | | | | | | | | | | | |

| Context | Group no | Description | animal bone | worked bone | cbm | Cu alloy | Fe | fired clay | flint | glass | human bone | Pb | pottery | sample | shale | shell | skeleton | slag | stone | wood |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 138 | 197 | Subrectangular pit cut | | | | | | | | | | | | | | | | | | |
| 139 | 197 | Fill of subrectangular pit 138 | 4 | | 1 | | 1 | | | | | | 7 | | | 6 | | | | |
| 140 | 197 | Subrectangular pit cut | | | | | | | | | | | | | | | | | | |
| 141 | 197 | Fill of subrectangular pit 140 | 2 | | | | | | | | | | 2 | | | 3 | | | | |
| 142 | 197 | Posthole cut | | | | | | | | | | | | | | | | | | |
| 143 | 197 | Fill of posthole 142 | 5 | | 1 | | | | | | | | 2 | | | 2 | | | | |
| 144 | 197 | Posthole cut | | | | | | | | | | | | | | | | | | |
| 145 | 197 | Fill of posthole 144 | | | | | | | | | | | | | | | | | | |
| 146 | 37 | Deposit of burnt material | | | | | | | | | | | | 7 | | | | | | |
| 147 | 37 | Deposit of burnt clay and mortar | 26 | | 1 | | | | | | | | 3 | | | | | | | |
| 148 | 190 | Ring ditch cut | | | | | | | | | | | | | | | | | | |
| 149 | | Layer | 9 | | | | | | | | 1 | | 27 | 2 | | | | | | |
| 150 | | Burnt layer | | | | | | | | | | | | | | | | | | |
| 151 | 196 | Linear feature cut | | | | | | | | | | | | | | | | | | |
| 152 | 196 | Fill of linear feature 151 | | | | | | | | | | | | | | | | | | |
| 153 | 196 | Posthole cut | | | | | | | | | | | | | | | | | | |
| 154 | 196 | Fill of posthole 153 | | | | | | | | | | | | | | | | | | |
| 155 | 196 | Posthole cut | | | | | | | | | | | | | | | | | | |
| 156 | 196 | Fill of posthole 155 | | | | | | | | | | | | | | | | | | |
| 157 | 196 | Shallow pit cut | | | | | | | | | | | | | | | | | | |
| 158 | 196 | Fill of shallow pit 157 | 20 | | | | | | | | | | | 1 | | | | | | |
| 159 | 196 | Fill of pit 159 | | | | | | | | | 7 | | 1 | | | | | | | |
| 160 | 196 | Pit cut | | | | | | | | | | | | | | | | | | |
| 161 | 196 | Fill of linear cut 162 | | | | | | | | | | | | | | | | | | |
| 162 | 196 | Linear cut | | | | | | | | | | | | | | | | | | |
| 163 | 163 | Group number for ditches to west | | | | | | | | | | | | | | | | | | |
| 164 | 163 | Cut of NS ditch | | | | | | | | | | | | | | | | | | |
| 165 | 163 | Fill of 164 | | | | | | | | | | | | | | | | | | |
| 166 | 163 | Cut of NS ditch | | | | | | | | | | | | | | | | | | |

| Context | Group no | Description | animal bone | worked bone | cbm | Cu alloy | Fe | fired clay | flint | glass | human bone | Pb | pottery | sample | shale | shell | skeleton | slag | stone | wood |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 167 | 163 | Fill of 166 | | | | | | | | | | | | | | | | | | |
| 168 | 163 | Cut of NS ditch | | | | | | | | | | | | | | | | | | |
| 169 | 163 | Fill of 168 | 8 | | 1 | | 3 | | | | | | 1 | 2 | | 1 | | 2 | | |
| 170 | 163 | Cut of NS ditch | | | | | | | | | | | | | | | | | | |
| 171 | 163 | Fill of 170 | | | | | | | | | | | | | | | | | | |
| 172 | | Posthole cut | | | | | | | | | | | | | | | | | | |
| 173 | | Fill of posthole 172 | | | | | | | | | | | | | | | | | | |
| 174 | 190 | Fill of ditch 148 | | | | | | | | | | | | 2 | | | | | | |
| 175 | 188 | Yellow clay spread | | | | | | | | | | | | | | | | | | |
| 176 | 163 | Cut of ditch | | | | | | | | | | | | | | | | | | |
| 177 | 163 | Fill of 176 | | | | | | | | | | | | | | | | | | |
| 178 | 163 | Fill of ditch 170 | | | | | | | | | | | | | | | | | | |
| 179 | 188 | Deposit of animal bone | | | | | | | | | | | | | | | | | | |
| 180 | 163 | Secondary fill of 164 | | | | | | | | | | | | | | | | | | |
| 181 | 163 | Primary fill of 164 | | | | | | | | | | | | 2 | | | | | | |
| 182 | 191 | Eastern ditch pair | | | | | | | | | | | | | | | | | | |
| 183 | 191 | Eastern ditch pair | | | | | | | | | | | | | | | | | | |
| 184 | 191 | Eastern ditch pair | | | | | | | | | | | | | | | | | | |
| 185 | 163 | Western ditch pair | | | | | | | | | | | | | | | | | | |
| 186 | 163 | Western ditch pair | | | | | | | | | | | | | | | | | | |
| 187 | 163 | Western ditch pair | | | | | | | | | | | | | | | | | | |
| 188 | 188 | Roman occupation level | | | | | | | | | | | | | | | | | | |
| 189 | 189 | Burial | | | | | | | | | | | | | | | | | | |
| 190 | 190 | Ring ditch | | | | | | | | | | | | | | | | | | |
| 191 | 191 | Eastern ditch group | | | | | | | | | | | | | | | | | | |
| 192 | 192 | Posthole group | | | | | | | | | | | | | | | | | | |
| 193 | 193 | Road | | | | | | | | | | | | | | | | | | |
| 194 | 194 | Inundation material around road | | | | | | | | | | | | | | | | | | |
| 195 | 195 | Linear features | | | | | | | | | | | | | | | | | | |

| Context | Group no | Description | animal bone | worked bone | cbm | Cu alloy | Fe | fired clay | flint | glass | human bone | Pb | pottery | sample | shale | shell | skeleton | slag | stone | wood |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 196 | 196 | Linear features | | | | | | | | | | | | | | | | | | |
| 197 | 197 | Features under 193 | | | | | | | | | | | | | | | | | | |
| TOTAL | | | 969 | 1 | 658 | 19 | 36 | 28 | 9 | 1 | 11 | 5 | 693 | 62 | 1 | 184 | 1 | 16 | 18 | 1 |

# Appendix C

# MELTON WASTEWATER TREATMENT WORKS

# FLINT

**Peter Makey**

## 1.0 MELTON WASTEWATER TREATMENT WORKS (MTW03)

### 1.1 Introduction

The watching brief produced only six struck flints (31.9g). All pieces came from the fill (context 7) of pit 6. The assemblage comprises two blades, one bladelet, one edge utilised blade, a core rejuvenation flake and an unclassifiable scraper.

The bladelet and the edge-utilised blade are broken, both pieces missing their distal (tip) ends. Despite this there is no definite trace of post depositional damage and the material is in a markedly fresh state. The edge utilised blade (record 4) exhibits the traces of use wear on its ventral (underside) right edge. The use wear extends over the area of breakage, which infers that the breakage is of prehistoric date. The scraper (record 6) has been manufactured on a chunky cortical flake with a partially natural ventral fracture.

### 1.2 Raw material and use wear

The pieces have all been manufactured on small local till derived flint pebbles, via the application of hard hammer techniques. The core rejuvenation flake (record 5) is a cortical flake of a very high quality, with traces of at least two finely trimmed platforms that were worked at right angles. Flaking appears to have been geared towards the production of small squat sub-bladelet flakes. The two blades are almost bladelets. The blades and bladelet can almost be re-fitted onto the core rejuvenation flake.

The bladelet and core rejuvenation flake, possess very light and light traces of micro-wear. Moderate macroscopic use wear is present on the scraper and heavy use on the edge utilised blade fragment (record 4). The nature of the use wear is not very clear although it is probable that all pieces but the scraper have been used on some form of very soft vegetable matter.

### 1.3 Chronology and potential

The lithic assemblage is probably, chronologically homogeneous. The nature of the debitage and the style of the flaking is consistent with assemblages regionally associated with woodlands sub-style grooved ware of the later Neolithic or early Bronze Age date, and early Bronze Age non-beaker material. However it must be stressed that the dating potential of this small flint assemblage is limited. Knapping of the flint was probably being carried out on site and the state of the lithic assemblage indicates that this knapping was probably contemporary with the digging or use of pit 6. The material is of a domestic nature and is consistent with a settlement site. It is of note that none of the flint from the feature has been burnt, despite the close proximity of burnt material.

### 1.4 Illustration

There are two possible candidates for illustration.

The core rejuvenation flake (record 5) is a particularly fine and example. The scraper may be of significance should further dating evidence be obtained from the pottery or environmental samples.

## 2.0 LOW COMMON LANE (BMP03)

### 2.1 Introduction

The excavations produced only four struck flints (28g). A further five pieces were recovered but on examination these were found to be un-struck natural gravel flint. The struck assemblage comprises two flakes (contexts 67 and 68), one blade (context 21) and an awl (context 111).

Both the flakes appear to have been rolled and the example from context 67 is a broken, medial (middle) fragment. The blade from the fill (context 21) of linear 20 is also a medial fragment. The piece is clearly, contextually residual. Tree bole 111, produced a fine example of an awl, manufactured on a bladelet. This piece is also residual.

### 2.2 Raw material and use wear

The four struck pieces have all been manufactured on local till derived flint, via the application of hard hammer techniques. The blade and awl possess traces of (respectively) total and very light white or grey patination. Only the awl (111 AA) shows any trace of use wear. This wear consists of, a light to moderate abrasion along the lateral margins at the tip (point) of the implement. The ventral surface (underside) of the tip possesses a very small area of microscopic gloss. This is consistent with the implement having been used, for a limited period in a boring motion.

### 2.3 Chronology and potential

Only the broken flake from rubble layer 54/55 is from a dated context (Phase 3: Roman). The flakes are residual, prehistoric of indeterminate date. The blade fragment could be of any prehistoric date but can be said to be of slightly more Neolithic aspect. The awl (110 AA) from the tree bole is of early Mesolithic character. Excavations at the Mesolithic site of Star Carr, North Yorkshire (Clark 1954, 96) produced 107 examples of awls that had been manufactured on blades. Many of these specimens are strikingly similar to the example from Low Common Lane.

The lithic assemblage is very small in size and is not chronologically homogeneous; this limits its potential. The pieces represent nothing more than an average background scatter for the region, with the notable exception of the awl. This implement is typically associated with the manufacture of clothing and is usually found on domestic occupation sites. Though the evidence is admittedly slight, it could indicate the presence of a Mesolithic settlement in the near vicinity.

### 2.4 Illustration

The awl (111 AA) from tree bole 110 is a particularly fine and potentially period diagnostic specimen and as such it should be illustrated.

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# Appendix D

# MELTON WASTEWATER TREATMENT WORKS

# PREHISTORIC POTTERY

**T G Manby**

## 1.0 CATALOGUE

### 1.1 Context 2

Two small sherds. Size 2 x 2 x 1.5cm. Iron Age? Soapy dark brown. Slightly rolled and weathered.

### 1.2 Context 4

Fill of pit 3. 13 sherds. Weight 190g.

A: Eleven sherds of a collared urn. Early Bronze Age. Collar, shoulder, body fragments and 5 joining pieces of a base. All pieces show recently broken edges. Hard and brittle, brick orange with dark purplish-grey exterior. Surfaces fissured. Grog and coloured flint temper. Plain. The character of the fabric indicates this pottery has been refired to a higher temperature, causing fissuring and oxidation through the wall structure.

B: Two small sherds. Dark hard grey, orange-red exterior. Heckly fracture. Possibly the same as A but not subjected to intensive refiring episode.

### 1.3 Context 7

Fill of pit 6. Total of 34 sherds, flakes and crumbs. Weight 144g. Largest sherd 6 x 4cm. Mostly angular with sharp edges, many split along wall laminations. Apparently all from the body of the same vessel. No features present. Hard reddish-buff, light to dark grey exterior. Much rerupting angular Wold flint temper <7mm, rare ironstone fragments. The erupting temper suggest some element of weathering. Few determinable characteristics, common to Early Neolithic and some Iron Age pottery.

## 2.0 COMMENTS

### 2.1 Collared urn (context 4)

There is sufficient of this vessel to enable some reconstruction of its shape. Only the base is measurable, at 8cm, with an estimated rim diameter of around 14cm. It is coarsely modelled; the base is slightly hollow and domed internally, its outer edge rounded. The shoulder is indistinct but rounded, the neck only indicated by a change of surface texture; the lower edge of the collar is pronounced and the lip is thin, flattened and has a slight internal bevel. The surface finish has been destroyed by the re-firing.

An overhanging collar and indistinct shoulder belong to a small collared urn of Longworth's Secondary Series that includes a large element of undecorated vessels (Longworth 1984, 29-

42). In date the Secondary Series collared urns are considered to be late in the early Bronze Age. They usually contain cremated human bone as burial deposits in barrows, ring cairns and other monuments. Without supporting dateable associations or alternative dating material only a broad attribution to 1700-1500BC or to the regional early Bronze Age 3 can be made (Manby *et al* 2003, 61-62).

No collared urns have been recorded from the western Woldfoot zone of the Southern Wolds, where the Jurassic Bench between Brough and North Newbald has produced burials accompanied by Beakers and Food Vessels (*ibid*, 95). There are collard urn cremation accompanied cremation burials in some of the 19th century excavated barrow groups on the southern Wolds, the closest being at Bishop Burton, Gardham and Newbald Lodge (Longworth 1984, 205-6 and 212).

The cause of the breakage of the urn and its incorporation with cremated human bone, presumably the remains of its associated burial, in the pit requires explanation, together with the source of the re-firing.

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# Appendix E

# MELTON WASTEWATER TREATMENT WORKS

# CREMATED HUMAN BONE

**Malin Holst**

**(York Osteoarchaeology Ltd)**

## 1.0 INTRODUCTION

In May 2004 York Osteoarchaeology Ltd was commissioned by Northern Archaeological Associates to carry out the osteological assessment of two assemblages of cremated human bone. The skeletal remains had been excavated during a watching brief at Melton wastewater treatment works, near Brough, East Yorkshire (SE 963 254).

The cremated bone was recovered from the two fills of a pit (3), which was 0.33m in diameter and 0.26m deep. Both fills also contained charcoal, and the upper fill (4) contain the remains of a collared urn, dating to the Early Bronze Age, between 1700 and 1500 BC (Manby – Appendix D).

### 1.1 Aims and objectives

The aim of the skeletal assessment was to identify the sex and age of the cremated individual, as well as to record any palaeopathological conditions observed on the skeletal remains.

### 1.2 Methodology

The cremated bone recovered both by hand and from bulk samples sieved by Palaeoecology Research Services (see Appendix F). The material submitted was sieved through a stack of sieves of 10mm, 5mm and 2mm mesh sizes. The bone recovered from each sieve was weighed and sorted into identifiable and non-identifiable bone. The identifiable bone was divided into five categories: skull, axial (excluding the skull), upper limb, lower limb and long bone (unidentifiable as to the limb).

All identifiable groups of bone were weighed. Bone colour, fragmentation, preservation and the rate of cracking and warping resulting from burning were recorded with the aim of obtaining information on cremation processes and subsequent funerary rituals.

## 2.0 OSTEOLOGICAL AND PALAEOPATHOLOGICAL ANALYSIS

Skeletal preservation depends upon a number of factors, including the age and sex of the individual as well as the size, shape and robusticity of the bone. Burial environment, post-depositional disturbance and treatment following excavation can also have a considerable impact on bone condition. Preservation of human skeletal remains is assessed subjectively, depending upon the severity of bone surface erosion and post-mortem breaks, but disregarding completeness.
Preservation was assessed using a grading system of five categories: very poor, poor, moderate, good and excellent. Excellent preservation implied no bone surface erosion,

whereas very poor preservation indicated complete or almost complete loss of the bone surface due to erosion and severe fragmentation.

The cremated bone from both fills of the pit was well preserved (Table E1; Appendix). The remains exhibited no surface erosion, suggesting that they had not been damaged through ploughing or adverse soil conditions.

***Table E1 Summary of osteological and palaeopathological results***

| Preservation | Completeness | Age | Sex | Colour | Pathology |
|---|---|---|---|---|---|
| Good | 6% | 18+ | Undetermined | White | None |

Following the cremation process, the skeleton remains largely intact (McKinley 1989, 66). As a result, human remains retrieved from modern crematoria tend to be comparatively large before being ground down for scattering or deposition in urns. However, bone is prone to fragmentation if moved while still hot (McKinley 1994, 340), whether in modern crematoria or ancient pyres. The cremated bone in this assemblage suffered moderately from cracking and warping during cremation, as indicated by distortion of bone fragments, concentric cracks on the long bone shafts and the separation of the inner and outer cranial tables.

It is possible that heat-induced cracking and disturbance of the pyre while the bone was still hot caused the extensive fragmentation of the cremated bone. Only 17% of bone from context 4 was larger than 10mm. The bone from context 4 was predominantly in the 5mm category, whereas the bone fragments from context 5 were exclusively in the 2mm category.

Cremated bone recovered from context 4 weighed 131.6g, while context 5 produced only 30.6g of bone. Even when added up (161.8g), the quantity of cremated remains was considerably lower than that produced by modern crematoria, which tends to range from 1600g to 3600g (McKinley 1989, 66). However, Wahl (1982, 25) found that archaeologically recovered remains of cremated adults tend to weigh much less (between 200g and 2500g), due to the fact that most burials include only a selection of the remains from the pyre, thereby representing a symbolic, or token, interment. This burial produced approximately 6% of the quantity of bone expected to remain following burning. The small quantity of bone in this burial was produced both by post-cremation selection of bone, and probably also by truncation of the burial through post-depositional processes or disturbance from a field drain.

The cremated bone from Melton was white, or very well calcined throughout the assemblage, suggesting a complete loss of the organic portion of the bone due to the adequate length and heat of the cremation process. According to McKinley (1989), a pyre needs to burn at a minimum temperature of 500°C for approximately seven to eight hours in order to cremate a body.

It was possible to identify 53% of bone fragments from context 4. Long bone fragments were most frequently represented, particularly those from the lower limb. Skull elements were also frequently found, a trend observed in most prehistoric cremation burials. Axial elements were common and consisted primarily of rib fragments and vertebral facets. Seven small finger bones (phalanges) were also recovered. This, together with the presence of six tiny tooth root fragments suggests that even small bone fragments were carefully selected from the pyre for burial. It was not possible to identify any elements from context 5.
Double cremation burials can be identified only if skeletal elements are duplicated, or if skeletons of different ages are represented in one burial. In this instance, a second individual was not identified.

Age was determined using standard ageing techniques, as specified in Scheuer and Black (2000a; 2000b) and Cox (2000a). Age estimation relies on the presence of the pelvis and uses different stages of bone development and degeneration in order to calculate the age of an individual.

In this burial, most of the criteria normally used to determine age were not preserved and as a result, it was not possible to determine age accurately. The full formation of the tooth roots and completeness and size of the right lunate (wrist bone) suggested that the individual was aged sixteen years or older.

None of the skeletal characteristics required for sex assessment were preserved and it was therefore not possible to estimate sex.

Manifestations of disease were not noted in any of the cremated bones or teeth.

## 3.0 DISCUSSION AND SUMMARY

A single cremation burial was recovered during archaeological work at Melton wastewater treatment works. The burial was interred in a simple pit together with charcoal, which may represent a deliberate inclusion within the burial. It is probable that the majority of the cremated bone had been interred in a Bronze Age collared urn, which was found in the upper fill of the pit. The presence of bone fragments as well as charcoal in the lower pit fill may suggest that the urn was inverted, a custom that has been observed in other Bronze Age burials in Yorkshire (Holst 2003), or that some bone and charcoal was placed in the pit, prior to deposition of the urn.

The burial contained 161.8g of cremated human bone. This suggests that the majority of bone surviving the cremation process had not been collected from the pyre for burial or had been lost through truncation of the pit. The cremated bone was moderately fragmented, suggesting that it was removed from the pyre while it was still hot and brittle.

The cremated remains recovered from the burial were well calcined, suggesting that the cremation temperature and length had been adequate to thoroughly cremate the body. Age estimation suggested that this individual was at least sixteen years old.

The osteological evidence suggests that this individual was cremated thoroughly. Bone was then carefully selected from the pyre for burial, together with some charcoal and was interred in an urn. The lack of further burials suggests that this individual had been interred in an isolated grave. However, further isolated Bonze Age burials are known from the area. These include a double burial of an inhumed woman and child on an exposed ridge, less than two miles from the cremation burial (Holst 2003b).

Considering the lack of comparative burials at the site, it is not considered necessary to carry out a full osteological analysis of the cremated remains.

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## APPENDIX: OSTEOLOGICAL AND PALAEOPATHOLOGICAL CATALOGUE

***Table E2 Summary of cremated bone fragment size***

| Context No | 10mm (g) | 10mm (%) | 5mm (g) | 5mm (%) | 2mm (g) | 2mm (%) | Total |
|---|---|---|---|---|---|---|---|
| 04 | 22.5 | 17 | 60.7 | 46 | 48.0 | 37 | 131.2 |
| 05 | 0 | 0 | 0 | 0 | 30.6 | 100 | 30.6 |

***Table E3 Summary of identifiable elements***

| Context No | Skull (g) | Skull (%) | Axial (g) | Axial (%) | UL (g) | UL (%) | LL (g) | LL (%) | UI LB (g) | UI LB (%) | Total ID (g) | Total ID (%) | Total UID (g) | Total UID (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04 | 9.0 | 13 | 11.8 | 17 | 6.6 | 9 | 2.1 | 3 | 40.0 | 58 | 69.5 | 53 | 61.7 | 47 |
| 05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30.6 | 100 |

Key:

g – grams

UL – upper limb; LL – lower limb; UI LB – long bone, limb not identified; ID – identifiable bone; UID – unidentifiable bone

# Appendix F

# MELTON WASTEWATER TREATMENT WORKS

# BIOLOGICAL REMAINS

**John Carrot and Deborah Jaques**

**(Palaeoecology Research Services)**

## 1.0 SAMPLE PROCESSING

Three samples from contexts associated with a cremation or cremations (contexts 4AA, 5AA and 7AA) were processed to 300 microns for the recovery of burnt human bone and prehistoric pottery. The lithologies of the samples were described, using a standard *pro forma*, prior to processing (see Table F1). In each case, all of the available sediment was processed.

Where present bone and pot fragments were removed during processing when seen. The dried residues were sieved to 4mm and the less than 4mm fractions were bagged separately to be returned to the excavator for delivery to the appropriate specialist. The greater than 4mm fractions were sorted for any additional fragments of human bone and pot and these were added to those recovered during processing. The sorted remains and the separately bagged remainders of the greater than 4 mm residue fractions were also returned to the excavator to be forwarded to the specialists.

***Table F1 Sediment descriptions***

| *Context* | *Weight (kg)* | *Description* |
|---|---|---|
| 4AA | 4.5 | Moist, varicoloured (a rather jumbled mix of light to mid red-brown to mid brown to mid to dark grey-brown to black), stiff to crumbly (working plastic and slightly sticky), ?ashy, slightly silty clay. Fragments of charcoal were abundant and burnt bone was present. |
| 5AA | 5 | As context 04AA above |
| 7AA | 6 | Moist, light to mid grey-brown, stiff (working plastic), clay. Stones (20 to 60 mm, including flint), charcoal (or other fine charred material) and a modern seedling were present. |

## 2.0 ANIMAL BONE

Fourteen fragments of burnt bone (18g) from context 4 were submitted to PRS for identification. The deposit, from which they were recovered, was associated with a cremation or cremations. These fragments had been sorted from amongst the human remains that made up the bulk of the material from this deposit.

Preservation of the remains was good, with the edges of the bones being distinct. The fragments had been intensively burnt and were white and calcined, with some evidence for shrinkage. Cracking of the bone was also apparent.

The texture and morphology of the remains suggest that these fragments are of animal origin. None could be identified to species, but most appeared to represent medium-sized mammals (assumed to be

sheep/goat, pig or small cervid). Most were shaft fragments, one of which being a radius. No further information can be retrieved from these fragments.

# Appendix G

# LOW COMMON LANE

# ROMANO-BRITISH POTTERY

**Peter Didsbury**

## 1.0 INTRODUCTION AND METHODOLOGY

A total of 693 sherds of pottery, weighing 17,108g, and having an average sherd weight (ASW) of 24.7g, was recovered from the excavations. With the exception of three post-medieval sherds, all the pottery was of Roman date, the overwhelming majority belonging to the later fourth century.

All material was quantified by the two measures of sherd count and sherd weight, according to fabric category within archaeological context. Data was entered onto an Access database, which is supplied as an integral part of this report, and which should be consulted on matters of detail where appropriate. Fabric terminology, with the codes employed in the database, is set out in the following section.

### 1.1 Fabric terminology and database codes

| *Database code* | *Common name* |
|---|---|
| DW | Dalesware, or Dales-*type* ware |
| GREB | Post-medieval brown-glazed red earthenware |
| HC | Huntcliff ware |
| NONCER | Non-ceramic |
| RCC | Colour-coated ware |
| RCG | Roman calcite-gritted ware (i.e. not attributable to a named type) |
| RG | Greyware |
| RG1 | Crambeck greyware |
| RM | Mortaria |
| RO | Roman oxidised ware |
| RSH | Roman shell-tempered ware (i.e. not attributable to a named type |
| RW | Roman whiteware |
| RW1 | Crambeck parchment ware |

## 2.0 DISCUSSION: THE ASSEMBLAGES

### 2.1 Phase 2

Only two contexts are accorded to this phase. A further three possible ones are discussed in the next section.

Fill 53 of linear feature 52 contained three rim and body sherds of one or more lid-seated Huntcliff jars. These are now believed to have been in production from the mid AD 350s (Evans 1996). The material from this context is thus of similar date to the majority from Phase 3 contexts.

Fill 133 of linear feature 132 contained only two sherds. A samian rim is tentatively identified, in advance of specialist opinion, as coming from a form 31 or 31R, with a

maximum date-range from *c.* AD 150 to the mid 3rd century. The other is a body sherd from a small, rather straight-sided jar with remains of burnished scroll decoration below a double girth-groove. Its sandy, light-firing, black-faced fabric is common in the Antonine period in this region, and its formal characteristics link it to a range of such small jars current from the Flavian period through the 2nd century in Lincolnshire, cf. May 1996, fig. 20.5, no. 827 (which, however, has lattice decoration); or *op. cit.* fig.20.13, nos. 996-1000). If contemporary, the two vessels would best fit a deposition date in the second half of the 2nd century.

## 2.2 Phase 2?

Small amounts of material were recovered from features of Group 197:

Sub-rectangular pit cut 138 contained seven small sherds of shell-tempered, colour-coated, calcite-gritted and grey wares. The greywares are apparently within the Holme-upon-Spalding Moor (HOSM) fabric range. The colour-coated fragment is either from a late 2nd to early 3rd century rouletted beaker such as Howe *et al.* 1980, nos 32-34, or from a 4th century rouletted pentice beaker, cf. *op. cit* nos 55-57. One of the shell-tempered sherds is almost certainly the shoulder of a Dalesware jar, a type which was current throughout the period *c.* AD 200-350. It may be that these dates reflect the entire date-range of the assemblage. Alternatively, if broadly contemporary, they may reflect a late 3rd and earlier 4th century period of deposition. It may be said that this assemblage would not stand out as unusual if attributed to Phase 3.

Fill 141 of sub-rectangular pit 140 contained two sherds of greyware, one an East Yorkshire fabric within the HOSM fabric spectrum, and the other Crambeck greyware. The latter fabric is usually held to have come into production *c.*AD 270, but it is unlikely to have been current in this part of East Yorkshire until the early 4th century (Evans 1989).

Fill 143 of posthole 142 contained a sherd from a greyware loop-handled jar, and a wheel-thrown rim from an everted rim jar in shell-tempered ware. It is difficult to see the latter as either a proto-Dalesware or Dalesware jar, though the fabric is similar. If the assemblage is of similar date to the others from Group 197, then a late 3rd or 4th century date might be appropriate.

## 2.3 Phase 3

***Group 163***

The only material from this western group of ditches came from fill 169 of north to south ditch 168. Unfortunately, the feature yielded only a single sherd. This is from an apparently handmade jar in shell-tempered fabric, with upright to slightly everted rim. It is probably to be regarded as a pre-Dalesware form, conceivably as early as the very late Iron Age, or as late as the 2nd century AD. There are carbonised deposits on the flat upper edge of the rim, and on the upper part of the interior.

***Group 183***

In the eastern ditch group, a small amount of pottery (7 sherds, ASW 11.1g) comes from fill 129 of ditch 128. The most chronologically diagnostic material is two sherds of Crambeck greyware including a Type 3 (Corder 1937) jar rim, in association with late East Yorkshire greywares and an undated oxidised ware. A 4th century date is indicated.

***Group 184***

A single sherd of undatable greyware comes from fill 23 of ditch 22. Fill 25 of ditch 24

contained 28 sherds (ASW 33.3 grams). This smallish assemblage is of typical late 4th century date, comprising East Yorkshire greywares, a Huntcliff lid and Crambeck greyware, parchment ware and a mortarium. The parchment ware is a red-painted Type 5B bowl. These wares are now held not to have been produced before *c.*AD 360/370 (Evans 1989). The database may be consulted for further details.

***Group 188***

A large assemblage of 278 sherds (ASW 29.1g) was recovered from general cleaning layer 15 and stone and *opus signinum* patch 71. The latter contained only one sherd, the rim of a Dalesware jar. The form is long lived, but is especially characteristic of the first half of the 4th century in south-east Yorkshire. Its presence suggests a *terminus post quem* for the emplacement of the layer in the first half of the 4th century. The remainder of the material, from 15, has what is probably a small residual component (represented by samian) but consists predominantly of HOSM greywares and Huntcliff ware. The latter includes rims from at least 18 lid-seated jars, and constitutes 36.7% of the assemblage by sherd number (HOSM-type greywares 46.0%, Crambeck greyware 7.9%). This layer may be regarded predominantly as deriving from assemblages of (or ending in) the second half of the 4th century.

***Group 193***

This group yielded material from stone and tile rubble layers and surfaces 54, 55 and 107, and a linear feature (fill 123 of cut 122). The aggregated assemblage was 62 sherds (ASW 14.0g). The assemblages are characterised by the association of East Yorkshire greywares in HOSM forms, Crambeck greyware, and Dalesware. The latter is a diagnostic rim sherd included among a total of four shell-tempered sherds. There are rather more calcite-gritted wares present (nine sherds), but none with distinctive Huntcliff diagnostic characteristics. Since calcite-gritted fabrics of this type were current throughout the 4th century, a date in the second half cannot be regarded as certain. The material from this group may be confidently regarded as reflecting activity in the first half of the 4th century, with the proviso that it may continue into the second half. It will be noted that the stamped tile of *legio VI* from this group is therefore residual in its context and has presumably been redeposited.

***Group 37***

This group yielded assemblages from fill 39 of the kiln flue, and from burnt clay and mortar deposit 147. Both are very different in nature.

Deposit 147 yielded a small low-weight assemblage of three sherds (ASW 6.0g), consisting of fragments of shell-tempered ware, greyware, and probable Crambeck greyware. The first two of these may represent a 2nd century component, but the Crambeck greyware (if correctly identified) suggests an early 4th century date.

Fill 39 of the kiln flue contained 16 sherds, with the much larger ASW of 46.9g. These contained several HOSM-type greywares, the 'complete' base of a jar in a gritty greyware fabric known to have been used for Huntcliff jar equivalents, and sherds of calcite-gritted ware without formal diagnostic features but within the Huntcliff fabric spectrum. Filling after the middle of the fourth century appears to be indicated.

***Group 194***

Material from this group, described as 'inundation material around road', came from two contexts, viz. 67 and 106. These respectively have 29 and 14 sherds (ASWs 11.3g and 11.6g). Both are of similar composition, each mainly consisting of Crambeck and East Yorkshire greywares, and Huntcliff ware. The latest material thus belongs to the second half of the 4th

century. It is appropriate here to note the presence, in 67, of a greyware body sherd of intrinsic interest, in that it is decorated with an applied pair of smith's tongs. Such 'Smith's Tools' sherds are now known from several locations in eastern Yorkshire, such as Norton, Wharram Percy and Bielby Beck (Didsbury 1984). They are associated with the worship of a Romano-Celtic deity, Sucellos, the equivalent of Vulcan.

***Ungrouped contexts***

Fill 35 of robber trench 34 contained a single sherd of possible late 4th century Huntcliff ware, and an undated greyware sherd.

Fill 93 of pit 92 contained eight sherds (ASW 15.1g), comprising shell-tempered, calcite-gritted and greyware bodies. A 4th century date is probably indicated.

Primary fill 109 of pit 98 contained six body sherds (ASW 13.1g), of similar composition to the assemblage from pit 92. In this case, there is also a body sherd of Crambeck greyware, confirming a 4th century date.

## 2.4 Phase 4

The only material from this phase comprised three low-weight fragments (ASW 4.7g) of calcareously tempered wares and greyware from fill 95 of grave 94, Group 189. These are not closely datable, and serve only to give a *terminus post quem* for the burial within the Roman period.

## 2.5 Phase 5

The only material from this phase came from fill 17 of ditch 16. It comprised three sherds of post-medieval glazed red earthenware. A 19th century date would be most appropriate.

## 2.6 Unphased contexts

Material was recovered from a number of unphased contexts. The majority belong to assemblages characterised by Huntcliff ware, in association with HOSM greywares, Crambeck greyware, and late colour-coated (non-beaker) vessels. The following groups may be accorded to this post-Huntcliff horizon:

Topsoil 1; fill 21 (linear 20); layer 77 (east of stones 76); cut 78; fill 91 (pit 90); fill 111 (bole 110); and layer 149.

The database may be consulted for details of these assemblages, but it is appropriate here to note that 77 contains the rim of a regional import from Lincolnshire, being the rim of a large, double lid-seated jar in shell-tempered ware. These also belong to the second half of the 4th century (cf. Darling 1977). Small amounts of residual earlier material are occasionally present, e.g. a probable Antonine greyware in 21, and samian in 77.

The following contexts cannot be dated: fill 47 (pit 46), and fill 159 of pit 159 (Group 196).

# 3.0 CONCLUSIONS AND RECOMMENDATIONS

One of the two contexts attributed to Phase 2, linear feature 132, has a small assemblage of probable later 2nd century date. Other slight signs of site activity of this period occur as residual sherds, notably samian, in a small number of contexts. The other context, linear feature 52, has an assemblage contemporary with the late 4th century assemblages from Phase 3.

A small number of contexts attributed to 'Phase 2?' would all appear to belong to at least the late 3rd to mid 4th century. They may, therefore, represent a real chronological phase later than Phase 2, but earlier than Phase 3 as dated below.

The vast majority of the site assemblage, that from Phase 3, dates from the second half of the 4th century, the latest diagnostic material dating to after *c.*AD 360/370. Phase 3 contexts have typical regional assemblages of this date, comprising East Yorkshire greywares, Crambeck products, and Huntcliff ware.

Two vessels in particular are, however, of some intrinsic interest. The first is a Lincolnshire import, a double lid-seated jar attesting to socio-economic contacts across the Humber in the second half of the 4th century. The other is the 'Smith's Tools' sherd noted above. The latter ought to form the subject of a short illustrated note in an appropriate journal.

No further work is deemed particularly necessary on this material, though any final publication could usefully be accompanied by a short illustrated discursive account of the pottery. All material should be retained in an appropriate museum in the interests of further ceramic research in the region.

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# Appendix H

# LOW COMMON LANE

# CERAMIC BUILDING MATERIALS

**J Tibbles and S E Tibbles**

## 1.0 Summary

*The majority of the ceramic building material assemblage is of a Romano-British date and represents the residual elements of Romano-British activity. Its presence among the finds assemblage could reflect a high status building within the vicinity. Although a range of ceramic building material normally associated with various aspects of Romano-British building construction was noted, the paucity suggests that the assemblage is likely to represent re-deposition.*

*The remainder of the assemblage is of post-medieval date; examples of land drains, most likely to represent casual deposition and/or agricultural activity.*

## 2.0 INTRODUCTION AND METHODOLOGY

An assemblage of 652 fragments of ceramic building material with a total weight of 53,383 g from twenty-five contexts was submitted for assessment. The assemblage was examined using a x15 magnification lens where applicable to aid dating, though fabric analysis was not undertaken as this was considered beyond the scope of this assessment. Information regarding the dimensions, shape and fabric (where applicable) was recorded and catalogued accordingly and a Munsell colour code incorporated where appropriate. The presence of the original surfaces was also taken into consideration to aid identification

It should be noted that the diversity of size and colour within the brick and tile caused during the manufacturing process must be taken into consideration when comparing examples within collected assemblages and typologies. The varying sizes and colours can be attributed to the variation in the clays used, shrinkage during drying, firing within the kiln or clamp and the location of the brick/tile within the kiln.

The dating of brick and tile can be highly contentious due to its re-usable nature and therefore the date range given is that of known dates where material has been recorded.

## 3.0 THE ASSEMBLAGE

Of the assemblage, 99% of the fragments were of Romano-British forms and/or fabrics and included one fragment of *opus* s*igninum*. The remainder comprised ceramic building materials of post medieval date, burnt stone and vitrified slag.

**Table H1: Assemblage**

| Period | Quantity | Weight |
|---|---|---|
| Romano-British | 649 fragments | 53,228 g |
| Post medieval | 3 fragment | 155 g |
| Opus signinum | 1 fragment | 225 gs |
| Burnt stone | 5 fragments | 85 g |
| Vitrified slag | 1 fragment | 5 g |
| | | |
| Total | 659 | **53698g** |

The majority of the assemblage of Romano-British ceramic building material (76%) comprised *box flue* tiles, roof tiles, bricks and possible *box-flue* tiles or hollow voussoirs (t*ubulus cuneatus*) or 'springers'. The remainder was unidentifiable by form.

**Table H2: Romano-British assemblage**

| Form | Quantity | Weight |
|---|---|---|
| Bessales/bessales? | 21 fragments | 4,323 g |
| Pedales/pedales? | 6 fragments | 1,406 g |
| Bricks (form unidentifiable) | 3 fragments | 50 g |
| Tegulae/tegulae? | 256 fragments | 27,474 g |
| Imbrices/imbrices? | 143 fragments | 9,233 g |
| Imbrices/ridge? | 6 fragments | 1,205 g |
| Ridge? | 8 fragments | 1,230 g |
| *Box-Flue* Tiles/*box-flue* tiles? | 41 fragments | 3,680 g |
| *Box-Flue* Tiles/hollow Voussoirs/springers*?* | 6 fragments | 1,940 g |
| Hollow voussoir/springer? | 1 fragment | 140 g |
| Tiles (form unidentifiable) | 47 fragments | 1,368 g |
| Tile/brick (form unidentifiable) | 1 fragment | 260 g |
| Form unidentifiable | 110 fragments | 919 |
| | | |
| Total | **649 fragments** | **53,228g** |

***Bricks***

*Bessales* were the smallest of the Roman bricks, with an average dimension of 198mm square, equivalent to 8 Roman inches or *unicae* (Brodribb 1987, 34). They were mainly used to construct hypocaust pillars (*pilae*), but they were used in other aspects of building construction such as archways and flooring. *Pedales* – used mostly used for the base or capping of the *pilae* – were around 297mm square, conforming to one square Roman foot (*ibid.* 36). Largest were *tegulae bipedales* – 2 foot square (5914mm) – used primarily as part of the hypocaust system to bridge the gap between the pillars, but other uses included wall revetments, archways and floors (*ibid.* 42).

Of the thirty fragments of brick within the assemblage, none displayed diagnostic features. Seventeen fragments were identified as *bessales*; with a thickness range of 27mm to 38mm and four fragments were possible *bessales?* (27mm to >31mm). Two fragments of *pedales*

(43mm and 47mm) were recorded and four were possible *pedales?* (>48mm to 55mm). Three fragments; though unidentifiable by type, were provisionally identified as Romano-British bricks. Heat discolouration and post-breakage burning was noted on the majority of the assemblage and the fabric colour range of Yellowish Red (5YR/5/6) to Brown (7.5YR/5/4) was recorded.

***Roof tiles***

*Tegulae* are the fundamental building material in the construction of the roof. They have particular features in the form of flanges on one face and upper and lower cut-aways which were required to allow the tile to slot into each other (ibid 16). *Tegulae* were set with the flanged surface uppermost and *imbrices* were used to overlap the two adjoining flanges to produce a solid roof. Ridge tiles were used on the apex of the roof, where the *tegulae* met the apex (Brodribb 1987, 27).

Two hundred and fifty-six fragments of *tegulae* were identified, of which 100 bore diagnostic features in the form of nail holes, finger smoothed flanges and/or knife-trimmed lower cut-aways. Four flange types; Type 2, 3, 4 and 6, and two sub-variants Type 2a and Type 3a, were evident as seen elsewhere within the region (Tibbles and Tibbles 2003(a) Tibbles and Tibbles 2003 (b); Tibbles (a) *forthcoming;* Tibbles (b) *forthcoming*).

Two forms of lower cut-away were recorded, Type 1 and Type 5 (Brodribb 1985, 16). The presence of a lower cut-away sub-variant (type 1a) was worthy of note, a form 'flush' with the side of the flanged surface unlike the 'stepped' Type 1 (*ibid* fig.7, 16). Nineteen fragments displayed knife trimmed and/or finger smoothed upper cut-aways and both upper and lower cut-aways were recorded on nine fragments. Nail holes were evident on five fragments with a diameter range of 6mm to 10mm. *Tegulae* secured by nails were likely to have been used for the lower tile courses above the eaves of the roof (Betts 1990, 166).

Five fragments bore remnants of finger grooves, tentatively identified as signatures; considered personal marks made by individual tilers (Brodribb 1979, 215). Three types were recorded and all were formed by a single finger stroke; vertical stroke; diagonal stroke and curved stroke. Although considered to be relatively rare on Roman ceramic building materials (Betts 1990, 170) rain pitting was evident on three *tegulae* fragments.

The thickness of the *tegulae* ranged from 13mm to 29mm with a fabric colour range of Red (2.5YR/5/5) to Yellowish Red (5YR/5/6) and although incomplete, the widths and lengths were recorded of four *tegulae,* indicating dimensions of the original size: L: >345mm; L: >290mm; W: 197mm and approximately ½ a tile L: >364mm W: >260mm.

One hundred and forty-three fragments of *imbrices/imbrices?* were identified with a thickness range of 10mm to 21mm. The majority displayed finger striations from the method of manufacture and a fabric colour ranged of Reddish Yellow (5YR/6/6) to Brown (7.5YR/5/4).

Three fragments bore evidence of a Dark Grey slip? (2.5YR/4/1). The use of colour washes or slips on roof tiles has been noted in other assemblages at Piddington, Towcaster, Peterborough (Brodribb 1987, 137) Catton (Tibbles (a)) and Brompton (Tibbles and Tibbles 2003 (c)) and may have been used as a form of external decoration.

Seven joining fragments of *imbrex*; recorded as AA, displayed an incomplete stamp depicting:
(…) VIC ·AN (T)
(*Leg*(*io*) *sexta*)) *Vic* (*trix*) *An*(*toniniana*)
"The Sixth Legion, Victrix, Antonius's Own" (Frere and Tomlin 1992, 162)

No ansate: a sideways 'V' pattern found on some legionary stamps (Brodribb 1997, 120), was evident on the 'complete' end, indicating the use of a plain rectangular stamp with the dimensions of: length: >84mm and width: 18mm. The surface is slightly abraded though the letters; in relief, are clearly delineated. Although incomplete, the tile had a length >291mm. Legionary stamping was common practice in Britain during the 2nd and 3rd centuries AD (Brodribb 1987, 118) and were not only used as a sign of authority but also as a preventative measure against the risk of theft from legionary stores (*ibid* 117).

The legion VI Victrix was eventually based in York (*Eboracum*) after coming to Britain "with Hadrian and Nepos in AD 122" (McWhirr 1979, 257). The stamped tile dates from A.D 213, when " the cognomen *Antoniniana* was granted by Caracalla… (and) continued in use by his successor Elagabalus (AD 218-222) (Frere and Tomlin 1992, 162). York may be the original source of the tile as a *tegulae* bearing a stamp of very similar ilk was recovered at York Minster (Wright 1976, 229-233, fig 4).

It should also be noted that stamps of the sixth legion were noted within the ceramic building material assemblages elsewhere within the East Yorkshire region at Leven and Long Riston (Tibbles 1993; Tibbles and Tibbles 2003 (b)).

Of the remainder of the assemblage, six *imbrices*/ridge? and eight ridge? fragments were tentatively identified. The *imbrices/*ridge? tiles had a thickness range of 15mm to 25mm, the ridge? fragment tapered form 19mm to 27mm.

***Box flue-tiles (tubulus)***

*Tubuli* were square pipes set within the walls as part of the hypocaust heating system of Roman buildings. They have characteristic combing or scoring of two surfaces as a keying element for plaster or mortar. They also often have a lateral vents at opposing sides to allow the warm air to circulate (*ibid* 75).

Of the 41 box-flue tiles, twenty-five fragments were diagnostic. The characteristic feature of combing was noted on one fragment and comprised one diagonal and one vertical/horizontal stroke of a comb of 4 tines. One fragment also displayed two vertical ?strokes formed by three fingers. Their uniform appearance suggests that they possibly served the adhesive function as with combing. This 'keying' feature has also been noted at Stamford Bridge (Tibbles and Tibbles 2003 (a)).

Four diagnostic fragments bore evidence of knife trimmed or finger smoothed vents with height, width and depth range of >42mm to 55mm, >41mm to 43mm and 18mm to 20mm respectively.

The thickness range of the fragments was of 10mm to 25mm and a fabric colour of Yellowish Red (5YR/5/6) to Light Red (2.5YR/6/8).

***Hollow voussoir (tubulus cuneatus)***

These tapering, 'wedge-shaped' hollow 'box' tiles were used for archways. Their cut out vent allowed for warm air to circulate (Brodribb 1987, 79).

***Springer***

A form of voussoir, 'springers' are hollow 'box' tiles with one tapering edge. They were possibly used for the base of an arch in conjunction with *box-flue* tiles and hollow voussoirs (*ibid*, 83; Betts 1990, 167)

Six fragments of box-flue tile/hollow voussoir/springer? (thickness range 17mm to 25mm) and one hollow voussoir/springer? were provisionally identified. Of the six B-F/HV/S, two bore knife trimmed ?vents; height: >34mm and >48mm, depth: 20mm and 21mm. Indications of original dimensions was recorded on two examples, a height of >190mm and widths of >121mm and >134mm. All of the fragments were plain faced. A feature worthy of note was a circular hole of 7mm diameter evident on the 'top' surface of one example. This may have possibly been used for a clamp or holdfast to fix the tile into place.

The hollow voussoir/springer? displayed a knife trimmed vent; height: >24mm, depth: 16mm, and a thickness of 17mm to 23mm.

Although considered rare (Betts 1990, 167) examples of hollow voussoirs and springers were recorded at Dalton Parlours (*ibid*) and eight other sites including Winchester and Colchester (Brodribb 1987, 83).

***Unidentifiable by form***

One hundred and fifty-eight fragments within the assemblage could not be identified by form at this level of assessment. However, the thickness, were applicable, ranged from 14mm to 25mm suggesting 47 fragments were tiles. One fragment with a thickness >28mm was catalogued as a brick or tile. One hundred and ten fragments were of Romano-British fabrics. The assemblage had a fabric colour range of Light Red (2.5YR/6/8) to Reddish Brown (5YR/5/4).

## 4.0 DISCUSSION BY PHASE

***Phase 2/2? Roman***

Total no of fragments: 5 Weight: 110g

Of the total assemblage, five fragments (0.8%) were recovered from four Phase 2/2?contexts: 53 (fill of linear feature 52); 133 (fill of linear feature 132); 139 (fill of sub-rectangular pit 138) and 143 (fill of post hole 142). The ceramic building material was identified as Romano-British and comprised of *tegulae* (2)*, imbrex* (1) and *box-flue* tiles (2). The stratigraphic location presents little evidence to its deposition. It is likely that the material was re-deposited.

***Phase 3 Roman***

Total no of fragments: 610 Weight: 46,675g

The majority of the assemblage (93%) was recovered from this phase and comprised 603 fragments of Romano-British building material, five fragments of burnt stone (85g), one fragment of *opus signinum* (225g) and one fragment of vitrified slag (5g) (92%, 0.8% and 0.2% of the overall assemblage respectively).

Of the Romano-British ceramic building material sixteen forms were recorded; *tegulae* (242) *imbrices* (123) *imbrices?* (13) i*mbrices*/ridge? (6) ridge? (8) *bessalis* (17) *bessales?* (4) *pedales* (2) *pedales?* (3) box-flue tiles (16) box-flue tiles? (18) box-flue/hollow voussoir/springer? (4) brick (form indeterminable) (3) brick/tile? (1) and tile (form indeterminable) (40). The remaining 103 fragments were not identifiable by form and were possibly of Romano-British fabric.
Ceramic building material was recovered from 15 contexts, the majority of which; 297

fragments (45%) was recovered from cleaning layer 15. The remainder was recovered from ditch fills 23, 129, 169 (fill of linear feature 122), stone and tile rubble layers 54, 55, 72, a dark layer between 54 and 55, 67, a stone and *opus signinum layer* 71, stone surface 107, dark brown layer 106, the primary fill of pit 109, fill of robber trench 35 and a deposit of burnt clay and mortar 147.

The *opus signinum* was of a Pink (7.5YR/7/3) fabric colour with frequent inclusions of crushed red ceramic material. What is worthy of note is that the fragment displayed one flat surface, two edges at 90 degree angles and a thickness of >55mm. The interpretation of context 71; a stone and *opus signinum* layer suggests that it was used as packing, the flat surface may have been from original use within construction.

The quantity of the material recovered does not substantiate the presence of a building within the immediate locale, although it may represent residual or re-used material from a structure within the vicinity. The interpretation of a civil settlement with the presence of a road surface 193 and a possible corn drying kiln 37 therefore suggests that the ceramic building material may have been used within the kilns' construction and for metalling and or repairs within the road surface. The material recovered from the stone and rubble layers/surfaces may have been incorporated within? hardstanding surfaces due to its re-useable and robust nature as evident by the presence of the legionary stamped *imbrex* recorded within a layer of stone and tile rubble 54.

Due to insufficient stratigraphic data, little information regarding the deposition of the Romano-British material within cleaning layer 15 can be given. At this level of assessment, it cannot be ascertained if this material was re-deposited or associated with the road or ? hardstanding contexts.

***Phase 5 Modern***

Total no of fragments: 3 Weight: 155g

No Romano-British ceramic building material was noted within Phase 5 contexts. The ceramic building material recovered represented post-medieval agricultural activity in the form of three non-diagnostic fragments of land drain (0.5% of the overall assemblage) from a fill of ditch 17.

The noticeable paucity of Romano-British material tentatively suggests little disturbance of the archaeology pertaining to this period by later activity.

***Unphased***

Total no of fragments: 41 Weight: 6,358g

Forty-one fragments of Romano-British ceramic building material were recovered from five contexts: (1) topsoil; 21, the fill of a linear; 77, layer of material E of stones; 79, fill of posthole/gully and the fill of a pit 91. This material made up 0.8% of the overall assemblage. Of the 41 fragments, six forms were recorded; *tegulae* (11) *imbrices* (6) *pedalis* (1) box-flue tiles (5) box-flue tile/hollow voussoir/springer? (2) and hollow voussoir/springer? (1). The remainder; 15 fragments, were unidentifiable by form, though seven were identified as possible tiles.

It is likely that the material was re-deposited.

## 5.0 OVERALL DISCUSSION

Overall, the assemblage did not appear to represent lower quality materials. The diverse range of forms recorded suggests that the material originated from a building of high status, with particular reference to the stamped *imbrex.*

There is very little evidence of abraded surfaces, the majority of the assemblage displayed fresh and/or crisp breaks. Joining fragments; though no inter-contextual joins were noted at this level of assessment, was also recorded. This evidence suggests that the material comprised possibly larger fragments upon deposition and that the material was subject to minimal disturbance by later activity. This is supported by the *tegulae* recovered from context 21, which was approximately half of a complete tile.

A significant quantity displayed post-breakage burning and heat discolouration that implies possible high temperature activity either during re-use or at original source. Mortar was also noted on the original surfaces and over broken edges. This strongly suggests the re-use of the material post-breakage, possibly for smaller components of the settlement for example, within construction of the corn drying kiln and for use as possible repairs/metalling of the road and ?hardstanding.

Ceramic building material was considered to be of high-status and a valued re-useable commodity. Its presence among the finds assemblage could reflect a high status building within the vicinity. However, there is insufficient evidence for large Romano-British structures within the area of investigation and the paucity of the range of building materials required within the various aspects of construction would suggest that the assemblage represents re-deposited material from Romano-British building/s within the vicinity. This may also include a military presence as inferred by the stamped *imbrex*.

Although the potential is limited at this level of analysis, the information gleaned is of regional significance. It can add to the corpus of evidence of activity during this period for the area and with particular reference to legionary presence within East Yorkshire.

## 6.0 RECOMMENDATIONS

The stamp is worthy of publication with particular reference to the corpus increasing number of legionary stamps recently recovered within the East Yorkshire region (Tibbles 1993; Tibbles and Tibbles 2003b).

Fabric analysis should be completed, provisionally by visual examination to refine identification of the queried (?) forms and dating. This should also be undertaken for comparative purposes with other Romano-British ceramic building assemblages within the region to try to ascertain source.

Further scientific analysis should be undertaken if deemed worthy after further study. Should further work be undertaken, the programme of work should include the integration of data and the reconstruction of materials (where possible) to aid and refine dating, identification and to allow the possibility of complete examples to be recorded within the assemblage.
Illustrations of the ceramic building material including the stamp and a selection of forms that display diagnostic features such as representative examples of types of flange and lower-cut-away, vents, combing. The number of illustrations cannot be determined at this stage as any additional examples of interest from further work and reconstruction should also be included.

It is recommended upon completion of work on the Melton waste treatment works ceramic building material assemblage, samples of fabrics should be retained and a selective discard policy implemented prior to deposition of the finds assemblage as whole within the appropriate museum.

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# Appendix J

# LOW COMMON LANE

# SLAG MATERIAL

**Jane Cowgill**

## 1.0 INTRODUCTION

The site was discovered during a routine watching brief conducted by Northern Archaeological Associates during the insertion of a pipeline between the pumping station at Brough-on-Humber and the new water treatment works at Melton. Only a ring ditch can be definitely phased to the pre-Roman period although other features may also be of this date. Most of the archaeology exposed is Roman and several phases of activity can be identified. Features recorded include ditches, a road, T-shaped kiln, a crouched inhumation and fragmentary indications of rudimentary structures. Many deposits on the site had been truncated.

## 2.0 RECORDING METHODOLOGY

A total of 987g (16 pieces) of slag and associated materials were submitted for recording. The slag was washed, dried and identified solely on morphological grounds by visual examination, sometimes with the aid of a ×10 binocular microscope. It was recorded on *pro forma* recording sheets and this information was entered directly into the catalogue below. A note of probable fuel type has been recorded when fragments or imprints were incorporated within the slag. The soil in the bags containing the slag was checked with a magnet for hammerscale.

## 3.0 CATALOGUE

| Context | Type | Count | Weight | Comments |
|---|---|---|---|---|
| 15 | IRON STONE | 1 | 16g | Discard. |
| 15 | SLAG | 1 | 17g | Totally encrusted; iron object? |
| 15 | SLAG | 1 | 31g | Fesmith; encrusted; thin HB fragment: partially magnetic. |
| 21 | HB | 1 | 188g | Fesmith; abraded? Charcoal fuel; knobbly; very glassy cream (greenish) top. |
| 47 | SLAG | 1 | 8g | Fesmith; HB/SSL fragment; charcoal fuel. |
| 55 | IRON STONE | 1 | 5g | Discard. |
| 77 | SLAG | 1 | 9g | Iron Age Grey slag? White; bubbly; mainly silica. |
| 79 | HB | 1 | 110g | Fesmith; charcoal fuel; quite small; part knobbly; top blue/glassy. |

| Context | Type | Count | Weight | Comments |
|---|---|---|---|---|
| 79 | IRON | 1 | 205g | Object. |
| 106 | STONE | 1 | 6g | Vitrified. |
| 106 | SSL | 1 | 7g | Fesmith; magnetic. |
| 106 | HB | 1 | 93g | Fesmith; slagged tuyere; knobbly; partially magnetic. |
| 106 | HB | 1 | 111g | Fesmith; coal fuel; hearth lining attached; knobbly; quite small. |
| 107 | STONE | 1 | 9g | Vitrified. |
| 169 | HB | 1 | 145g | Fesmith; HB + tuyere; coal fuel; knobbly; quite small. |
| 169 | SLAG | 1 | 27g | Totally encrusted; iron object? |

### 3.1 Codes used in the above catalogue

| | |
|---|---|
| FESMITH | Evidence of iron smithing |
| HB | Plano-convex slag accumulation (commonly known as hearth bottom) |
| SSL | Smithing slag lump |

## 4.0 DISCUSSION

Only ten of the pieces (746g) submitted for recording are probable slags and most of these are the by-products of iron smithing – the manufacture, repair or recycling of iron objects. Most are plano-convex slag accumulations (commonly known as hearth bottoms) or fragments of them. The slag is generally in a fresh condition although no hammerscale was noted when the slag was washed. Both charcoal and coal was used as a fuel in the smithing hearth, the latter probably imported from the Durham coal fields via the Humber Estuary. It is unlikely that a single smith would use both fuels (H Cole pers. comm.) because they burn so differently in the hearth. The slag from contexts 106 and 169 are visibly very similar in appearance and are likely to be the by-products of a single smith. The others (contexts 16, 21, 46 and 79) are less obviously so and, as charcoal was the fuel used, may form a second separate group (if they are indeed related).

There is a single large iron object from posthole/gully 78 and two other possible objects (contexts 15 and 169) but both are now totally encrusted with iron-corrosion products and any iron within them may now have become 'ghosted'. There is one possible piece of 'Iron Age Grey' slag from context 77. This identification is tentative because the piece is very white and resembles the glassy layer on the top of the hearth bottom from linear feature 20.

The smithing assemblage from this site is too small to suggest that a smithy actually operated there. This group perhaps represents the by-products of an itinerant smith passing through the settlement/farmstead.

# Appendix K

# LOW COMMON LANE

# SMALL FINDS CONSERVATION

**Julie Jones**
**with notes on the wood by Steve Allen**

**(York Archaeological Trust)**

## 1.0 AIMS AND OBJECTIVES

This report aims to meet the requirement to produce a stable site archive (MAP2 Phase 2: Fieldwork). This has involved X-radiography and an assessment of the condition, stability and packaging of the finds.

The potential of the assemblage for further analysis and research is also discussed (MAP2 Phase 3: Assessment). The condition of the various classes of material is summarised and indicators of unusual preservation are noted. There are recommendations for investigative conservation, for additional specialist support, and topics for further research are raised.

## 2.0 PROCEDURES

The iron and copper alloy were X-rayed using standard YAT procedures and equipment. One sheet of film was used, and each plate was given a reference number in the YAT conservation laboratory series. The X-ray number was written on each recorded find bag. Each image on the radiograph was labelled with its recorded finds number. The plates were packaged in archival paper pockets.

All finds were examined under a binocular microscope at ×20 magnification. The material identifications were checked and observations made about the condition and stability of the finds, these are recorded in section 4 below.

The piece of wood was delivered to the Wet Wood Laboratory wet packed. It was removed from its packaging, washed under cold running water to remove adhering burial deposits and returned to its packaging after examination and species identification. The latter was carried out under ×40 and ×100 magnification.

## 3.0 QUANTIFICATION

A total of 51 finds were assessed and 4 X-ray plates produced. The number of objects in each material category is listed below:

| | |
|---|---|
| Bone | 1 |
| Copper alloy | 8 |
| Lead alloy | 5 |
| Iron | 35 |
| Shale | 1 |
| Wet-packed wood | 1 |

## 4.0 ASSESSMENT

The assessments are listed in tables below by material type and in find number order. **Recommendations for further investigation and new observations are highlighted in bold type**. Unless further treatment and stabilisation has been recommended, the finds should remain stable and require no further work at this stage. Additional work may be required if objects are selected for drawing, photography or display, this is not routinely included below:

### 4.1 Iron

Store dry at less than 15%RH.

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| 5917 | 15 | AC | Bag labelled "Fe obj." One piece, an **iron bar**, complete?<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with inclusions (white minerals). Longitudinal cracking is visible in two places.<br>X-ray: significant survival of metal core, one end more corroded than the other.<br>Proposed treatment: none**. If required for research**, the cross-section and shape of the ends could be revealed (est 2 hours) |
| 5917<br>5918 | 15 | AH | Bag labelled "Fe nail?" One piece, a tapering strip with rectangular cross-section, bent at the end. There is no trace of a head, so cannot confirm as a nail shank<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with buff-coloured surface areas visible in places. Some surface cracking is visible.<br>X-ray (in two planes): Pitted metal core, wide end more corroded than the tip.<br>Proposed treatment: none**. If required for research**, the shape of the wide end could be revealed (est 2 hours) |
| 5917<br>5918 | 15 | AI | Bag labelled "Fe obj." One piece, possibly complete.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with chalk inclusions.<br>X-ray (in two planes): reveals a completely corroded object which looks like a **looped hasp**. This consists of a circular link attached to a looped fitting.<br>Proposed treatment: none**. If required for** |

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| | | | **research**, the shape of the looped links and their cross-sections could be revealed (est 4 hours) |
| 5917 | 15 | AJ | Bag labelled "Fe/flint" One piece, an iron lump corroded to a flint nodule.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with large chalk and flint inclusions. The large void represents the broken end of an **iron strip or bar with rectangular cross-section (nail shank?) which has completely corroded**.<br>X-ray: shows a completely corroded object, identification uncertain.<br>Proposed treatment: none. |
| 5917 | 15 | AK | Bag labelled "Fe nail" One piece, possibly complete.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with chalk and flint pebbles, charcoal and fired clay inclusions. A rectangular cross-section is visible at the broken end. There is no trace of a head, so cannot confirm as a nail shank.<br>X-ray: shows some surviving metal core, major crack c1cm from the end.<br>Proposed treatment: none. |
| 5917 | 15 | AL | Bag labelled "Fe ?nail". One piece, possibly complete.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion. A square cross-section is visible at the broken end. There is no trace of a head, so cannot confirm as a nail shank.<br>X-ray: shows hollow core, no metal remaining.<br>Proposed treatment: none. |
| 5917 | 15 | AM | Bag labelled "Fe wire (2 frags)." Two pieces of wire (which do not join), the larger one curved, and many small loose flakes.<br>Condition: sand, silt and mixed orange-brown iron corrosion which is laminating, cracking and spalling off at many active pitted sites where bright orange chlorides are visible. The cross-section is not clear but appears to be circular. No sign of MPOs.<br>X-ray: the wire is not twisted or plated.<br>Proposed treatment: **corrosion is active, dry storage is essential.** |
| 5917 | 15 | AN | Bag labelled "Fe nail." One piece, possibly complete.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with small chalk and charcoal inclusions. A hollow rectangular cross-section is visible at the |

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| | | | broken end, this curves and tapers to a point.<br>X-ray: shows a curved strip, possibly a nail shank. There is no trace of a head, so cannot confirm this.<br>Proposed treatment: none. |
| 5917 | 15 | AO | Bag labelled "Fe". One piece, a lump of iron corrosion and pebbles.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with chalk and flint pebble inclusions. No magnetic response.<br>X-ray: shows possibly the hollow shape of a completely corroded nail and nailhead.<br>Proposed treatment: none |
| 5918 | 15 | AP | Bag labelled "Fe nail". One piece, possibly complete.<br>Condition:Sand, silt and bulky mixed orange-brown iron corrosion with chalk and oolitic inclusions.<br>X-ray: shows some surviving metal core. There is no trace of a head, so cannot confirm as a nail shank.<br>Proposed treatment: none |
| 5918 | 15 | AQ | Bag labelled "Fe nail". One piece, complete.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with chalk, flint and charcoal inclusions.<br>X-ray: shows severe corrosion, with little or no surviving metal core. The outline of the mineralized surface represents a complete nail, the shank is curved, there is a crack 12 mm in from the head.<br>Proposed treatment: none |
| 5918 | 15 | AR | Bag labelled "Fe nail". One piece, complete. There is no trace of a head, so cannot confirm this as a nail.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with chalk, flint and charcoal inclusions.<br>X-ray: shows severe corrosion, with little or no surviving metal core in the centre. The outline of the mineralized surface represents a curved and tapering strip, possibly a nail shank.<br>Proposed treatment: none |
| 5918 | 15 | AS | Bag labelled "Fe nail". One piece, complete.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with chalk inclusions.<br>X-ray: shows severe corrosion, with little or no surviving metal core. The outline of the mineralized surface represents a complete nail. |

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| | | | Proposed treatment: none |
| 5918 | 15 | AT | Bag labelled "Fe nail". One piece, incomplete: the broken end reveals a corroded (now hollow) circular cross-section.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with large flint inclusions.<br>X-ray: reveals a **possible knife fragment?**: tang, shoulder and possible blade visible, but both ends are missing.<br>**Proposed treatment: investigative corrosion removal to reveal shape of cross-section at both ends and identify object (3 hours)** |
| 5919 | 17 | AA | Large bag labelled "Fe blade (P. Med)". One piece, complete.<br>Condition: sand, silt and bulky orange-brown iron corrosion with inclusions. The corrosion is cracking and laminating, some areas of the back of the blade have spalled off to reveal active orange powdery pits.<br>X-ray: the curved edge is thinner, the cutting edge. The blade is pitted throughout. The shoulder is thickened.<br>Proposed treatment: none. **Dry storage is essential.** |
| 5918 | 21 | AA | Bag labelled "Fe obj(s)". One piece, incomplete: the broken end reveals the square cross-section (now hollow) resembling a nail shank.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with chalk inclusions.<br>X-ray: shows a **nail head and part of the shank**. Corrosion is extensive, with little or no surviving metal in the shank, but some remaining in the head.<br>Proposed treatment: none |
| 5918 | 23 | AC | Bag labelled "Fe nail". One piece, complete.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with chalk inclusions.<br>X-ray: shows severe corrosion, with some surviving metal core at the head. The outline of the mineralized surface represents a complete nail.<br>Proposed treatment: none |
| 5918 | 55 | AC | Bag labelled "Fe nail". One piece, complete.<br>Condition: sand, silt and bulky brown iron corrosion with chalk and flint inclusions.<br>X-ray: shows good surviving metal core, except at tip. The image represents a |

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| | | | complete nail.<br>Proposed treatment: none |
| 5918 | 55 | AD | Bag labelled "Fe". One piece, incomplete: the broken end reveals the square cross-section (now hollow) resembling a nail shank.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with chalk and flint inclusions.<br>X-ray: shows a **nail head and part of the shank**. Corrosion is extensive, with little or no surviving metal in the shank, but some remaining in the head. The projection from the head appears to be corrosion and not a second nail shank.<br>Proposed treatment: none |
| 5918 | 55 | AE | Bag labelled "Fe ?(2 joining frags)". Two main pieces (plus small fragments in bag), incomplete: the broken end reveals the cross-section (now hollow) of a **rectangular plate or strip, 20mm wide x3or4mm thick**.<br>Condition: sand, silt and very bulky mixed orange-brown iron corrosion with chalk and flint pebble inclusions.<br>X-ray: corrosion is extensive, with little or no surviving metal. Not informative.<br>Proposed treatment: none |
| 5918 | 58 | AA | Bag labelled "Fe ?nail". One piece, incomplete, the broken end reveals the square cross-section (now hollow) resembling a nail shank.<br>Condition: sand, silt and bulky mixed orange-brown iron corrosion with chalk, flint and oolitic inclusions.<br>X-ray: shows severe corrosion, with little or no surviving metal core. The outline of the mineralized surface represents a nail fragment complete with head.<br>Proposed treatment: none |
| 5919<br>5920 | 67 | AA | Large bag labelled "Fe handle". One piece, possibly complete.<br>Condition: sand, silt and very bulky orange-brown iron corrosion with chalk pebble, flint and stone inclusions.<br>X-ray (in two planes): shows a (-shaped object with surviving metal core. There are no loops or fittings for attachment and both ends taper to a point. X5920 suggests a rectangular cross-section on the left-hand arm, the right-hand side is not clear. **This could perhaps be a large staple or tie?**<br>Proposed treatment: none. **If required for research**, the cross-section and shape of one |

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| | | | end could be revealed (est 5 hours) |
| 5918 | 67 | AB | Bag labelled "Fe obj?". One piece, complete?<br>Condition: sand, silt and bulky orange-brown iron corrosion with chalk inclusions.<br>X-ray: shows **a nail fragment** with some surviving metal at the head, little along the shank, the tip is missing.<br>Proposed treatment: none |
| 5918 | 67 | AC | Bag labelled "Fe nail". One piece, incomplete, the broken end reveals the **circular cross-section** (now hollow).<br>Condition: sand, silt and bulky orange-brown iron corrosion with chalk inclusions.<br>X-ray: shows severe corrosion, with little or no surviving metal. The outline of the mineralized surface represents a curved and tapering strip, **there is no head, so cannot confirm this as a nail**<br>Proposed treatment: none |
| 5919 | 77 | AB | Large bag labelled "Fe nail". One piece, possibly complete.<br>Condition: sand, silt and bulky orange-brown iron corrosion with large flint and chalk inclusions.<br>X-ray: shows an L-shaped fitting (**possibly a hinge pivot?)** with severe corrosion on the shank.<br>Proposed treatment: none. **If required for research**, the cross-section of both arms could be revealed (est 4 hours) |
| 5918 | 77 | AD | Bag labelled "Fe nail". One piece, complete.<br>Condition:Sand, silt and bulky brown iron corrosion, cracking at the tip, and with chalk and charcoal inclusions.<br>X-ray: shows excellent surviving metal core; a complete nail.<br>Proposed treatment: none |
| 5919 | 78 | AA | Bag labelled "Fe nail (2 joining frags)". Two main pieces (plus small fragments in bag), a complete nail. The broken ends reveal the **square cross-section** (now hollow) of the shank.<br>Condition: sand, silt and very bulky mixed orange-brown iron corrosion with a cracked black glassy (slag, coal or charcoal?) inclusion at the head.<br>X-ray: corrosion is extensive, with little or no surviving metal. The image represents a complete nail.<br>Proposed treatment: none |
| 5919 | 91 | AB | Bag labelled "Fe nail". One piece, complete.<br>Condition: sand, silt and bulky orange- |

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| | | | brown iron corrosion with chalk pebble inclusions.<br>X-ray: shows some surviving metal core at the head; the image of a complete nail.<br>Proposed treatment: none |
| 5919 | 106 | AA | Bag labelled "Fe ?nail (2 joining frags)". Two pieces: The broken end of the small fragment reveals a **square cross-section** (now hollow) perhaps a nail shank. This does not appear to join the larger fragment.<br>Condition: sand, silt and very bulky mixed orange-brown iron corrosion with chalk inclusions.<br>X-ray: corrosion of the small fragment is extensive, with little or no surviving metal. The image of the larger fragment is not clearly identifiable, but it has more metal content.<br>Proposed treatment: none**. If required for research**, the shape of the large fragment could be investigated (est 2 hours) |
| 5919 | 106 | AB | Bag labelled "Fe nail?". One piece, complete.<br>Condition: sand, silt and bulky orange-brown iron corrosion with chalk and flint pebble inclusions.<br>X-ray: shows some surviving metal core at the head and tip; the image of a complete nail.<br>Proposed treatment: none |
| 5919 | 123 | AB | Bag labelled "Fe nail". One piece, complete.<br>Condition: sand, silt and bulky orange-brown iron corrosion with inclusions.<br>X-ray: shows very little surviving metal core; the image is of a complete nail.<br>Proposed treatment: none |
| 5919 | 138 | AA | Bag labelled "Fe nail". One piece, complete?<br>Condition: sand, silt and bulky orange-brown iron corrosion with chalk pebble inclusions.<br>X-ray: shows little surviving metal core; the image confirms this as a nail, the tip appears to have been truncated but there is no recent break.<br>Proposed treatment: none |
| 5920 | 169 | AB | Large bag labelled "Fe". One piece, possibly complete?<br>Condition: sand, silt and very bulky orange-brown iron corrosion with roots, coal, charcoal, flint and chalk pebble inclusions.<br>X-ray: shows little surviving metal core; the image is irregular in shape and not diagnostic. |

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| | | | Proposed treatment: none**. If required for research**, a small area could be investigated further to determine whether this is a totally corroded object, a concretion or slag (est 2 hours) |
| 5919 | 169 | AC | Bag labelled "Fe ?nail". One piece, complete?<br>Condition: sand, silt and bulky orange-brown iron corrosion with inclusions.<br>X-ray: is not informative, possibly a corroded nail shank but no head or tip to confirm this. Little or no metal survives.<br>Proposed treatment: none |
| 5920 | 169 | AD | Large bag labelled "Fe obj". One piece, possibly complete?<br>Condition: sand, silt and very bulky orange-brown iron corrosion with roots, charcoal, slag(?), large flints and chalk pebble inclusions.<br>X-ray: shows little surviving metal core; the image is irregular in shape and not diagnostic.<br>Proposed treatment: none**. If required for research**, a small area could be investigated further to determine whether this is a totally corroded object, a concretion or slag (est 2 hours) |

## 4.2 Copper Alloy

Store dry at less than 35%RH.

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| 5917<br>5918 | 1 | AA | Bag is labelled "**Cu alloy handle**". One piece, a pivoting handle made in four parts (handle loop, base, pivot (axle) and attachment) complete.<br>Condition: sand and silt over a.blackish crust which lies above the core and is pitted, exposing pale green powdery corrosion and red cuprite. The X-ray shows a solid metal core, very dense to X-ray-so probably high lead content. The side view shows the stop cast in one with the handle loop.<br>**Proposed treatment: the object will remain stable without any further work if stored correctly,** but the powdery green corrosion is potentially unstable. If the object is not modern and is required for research I would recommend: full corrosion removal, investigate underside for evidence of attachment and any traces of MPOs (none visible now) stabilisation, consolidation (2.5 hours). |
| 5917 | 1 | AB | Box is labelled "**Cu alloy coin**". One piece, complete, **copy of a mid-fourth century Roman coin.**<br>Condition: sand and silt over an olive patina, reverse varies from black to pale green with a few powdery patches.<br>Obv: bust facing right. Legend is an illiterate copy<br>Rev: copy of either fallen foe or she-wolf (see Reece fig 160 or 163).<br>The X-ray shows a reasonable core, not heavily pitted.<br>**Proposed treatment:** the object will remain stable without any further work if stored correctly, but the powdery green corrosion is potentially unstable**. Refer to numismatist**; If required for research, full mechanical corrosion removal (2 hours). |
| 5917 | 15 | AA | Box is labelled "**Cu alloy stylus**". Nearly complete, bent and in two pieces.<br>Condition: the stylus is very heavily corroded. Sand and silt lie over green corrosion, which varies from a fine olive patina on the scraper face, decorated shoulder and areas of the surrounding shank to totally disruptive warty corrosion exposing pale green powdery corrosion and red cuprite. The original surface has been |

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| | | | lost in these areas and cannot be retrieved. There is a small area of what looks like white metal at the broken end of the stylus, this could be one of the alloying constituents. The two fragments do not now join.<br>The X-ray shows a reasonable metal core, pitted spatulate end and tip fragment, with heavy crust on the central shank. There is no sign of non-ferrous plating.<br>**Proposed treatment: the object is unstable. It requires full corrosion removal, stabilisation, consolidation (2.5 hours**). |
| 5917 | 15 | AB | Box is labelled "**Cu alloy coin**". One piece, incomplete, the edge is broken and missing. **Roman coin AD 364-78.**<br>Condition: the coin had been brushed (polished with glass bristle brush?). Some sand and silt lies over a crust which varies from olive to pale green with a few powdery patches. The edge is laminating, some areas of the reverse surface have spalled off to reveal a powdery grey-green core.<br>Obv: bust facing right.<br>Legend:VALEN…(see Reece fig 143, AD 364-78)<br>Rev: (alignment upside-down) Victory facing left Legend: (SECVRITAS REI)PV(BL)ICAE in field (?P) on right and 'L' on left (see Reece fig 141). In ex: illegible but possibly (L)VG(??)<br>The X-ray shows a corroded core with a ragged edge, but a very dense area in the centre…possibly inhomogeneous composition.<br>**Proposed treatment: refer to numismatist; recommend stabilisation, consolidation and if required for research, mechanical corrosion removal (2.5 hours).** |
| 5917 | 15 | AF | Bag is labelled **"Cu alloy ring**". One piece, complete.<br>Condition: the ring is very heavily corroded. Sand and silt lie over corrosion, which varies from a fine dark brown patina to totally disruptive warty corrosion exposing pale green powdery core and red cuprite. The original surface has been lost in these areas and cannot be retrieved.<br>The X-ray shows a reasonable metal core, pitted on the thicker edge. There is no sign of non-ferrous plating.<br>**Proposed treatment: the object is** |

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| | | | **unstable. It requires full corrosion removal, stabilisation, consolidation (2.5 hours).** |
| 5917 | 23 | AA | Box is labelled "**Cu alloy frags. ×12**".<br>Condition: the box contains very heavily corroded fragments of thin sheet. There is evidence of active bright green bronze disease. Some of the fragments join (the two long pieces form a Z- folded sheet, perhaps scrap metal?)<br>The X-ray shows fragments with heavily pitted cores, the pale areas are bent or folded edges. The long fragment is a folded sheet and shows two thicknesses of metal. No decoration or inscription is visible on X-ray.<br>**Proposed treatment: the object is extremely unstable. If it is to be retained for study it requires stabilization and consolidation, possible joins could be reconstructed (2.5 hours).** |
| 5917 | 91 | AA | Box is labelled "**Cu alloy coin**". One piece, complete, **Roman coin of Magnentius, AD 350-353.**<br>Condition: sand and silt over a pale olive patina, obverse has patches of black crust but otherwise surface is powdery. The reverse shield and victory had previously been brushed and burnished.<br>Obv: Bare Headed bust facing right. Legend :DNMAGNEN TIVSPFAVG (very worn at the edge) 'A' in the field to the left (see Reece fig 131)<br>Rev: aligned upside down, Two victories holding shield with VOT V MVLT X; legend: VICTORIAE…right edge is missing. In ex: three letters look like TRS but flaking and wear have lost lower parts of these letters (see Reece fig 129). The X-ray shows a reasonable core, not heavily pitted.<br>**Proposed treatment:** the object will remain stable without any further work if stored correctly. **Refer to numismatist**; If required for research, full mechanical corrosion removal (2 hours). |
| 5917<br>5918 | 93 | AA | Bag is labelled "**Cu alloy stud**". One piece, a circular domed stud with concentric ridges.<br>Condition: sand and silt lie heavily over mixed green corrosion, some of it powdery and active. The interior retains blackish soil--perhaps mineralised or carbonised organic remains. The X-ray in plan shows a pitted edge, the central stud is very dense either high lead content or very thick. The side |

| X-ray no | Context no | Finds code | Assessment |
|---|---|---|---|
| | | | view shows the fragile edge and conical interior attachment.<br>**Proposed treatment: the powdery green corrosion is unstable**. If the object is not modern and is required for research I would recommend: full corrosion removal, investigate underside for evidence of MPOs, stabilisation, consolidation (3.5 hours). |

### 4.3 Lead Alloy

Store dry at less than 35%RH.

| Context no | Finds code | Assessment |
|---|---|---|
| 15 | AD | Bag labelled "Pb obj.". A perforated lead sheet, bent, one piece, probably complete.<br>Condition: sand and silt over a pale buff fairly smooth surface, with a few dents and contours. The interior is still full of soil, and there are no mineralized organic remains visible there.<br>Proposed treatment: none: If the fragment is to be retained for research, we could remove the adhering soil to reveal any surface detail, also removing potential source of further corrosion (est 0.5 hour) |
| 15 | AE | Bag labelled "Pb obj?". An irregularly shaped lump of lead (probably casting waste), one piece, probably complete.<br>Condition: sand and silt over a pale buff powdery surface, there are areas where this has spalled off to reveal grey metal core; the bright white powdery areas are potentially unstable.<br>Proposed treatment: none: If the fragment is to be retained for research, we could remove the adhering soil, also removing potential source of further corrosion (est 0.5 hour). |
| 55 | AA | Bag labelled "Pb waste". An irregularly shaped lump of lead (roughly plano-convex and horn-shaped), one piece, with folds and cuts, probably complete.<br>Condition: sand and silt over a pale buff powdery surface, charcoal, chalk, and fired clay inclusions noted in the sand-filled interstices.<br>Proposed treatment: none: If the fragment is to be retained for research, we could remove the adhering soil, also removing potential source of further corrosion (est 0.5 hour) |
| 55 | AB | Bag labelled "Pb waste". An irregularly shaped lump of lead (plano-convex casting waste), one piece, probably complete.<br>Condition: sand and silt over a bumpy white to pale buff powdery surface, potentially unstable.<br>Proposed treatment: none: If the fragment is to be retained for research, we could remove the adhering soil, also removing potential source of further corrosion (est |

| Context no | Finds code | Assessment |
|---|---|---|
| | | 0.5 hour) |
| 77 | AA | Bag labelled "Pb". A large irregularly shaped thick sheet of lead with many nicks and cuts, one piece, probably complete. One edge is straight and the right-angle at the corner leads along to a semicircular indentation along that edge.<br>Condition: sand and silt over a fairly smooth white to pale buff powdery surface, potentially unstable. There is soil still in the interstices. Several recent scrapes on one face (from the teeth of a mechanical digger?) expose the grey metal core.<br>Proposed treatment: none: If the fragment is to be retained for research, we could remove the adhering soil, also removing potential source of further corrosion (est 0.5 hour) |

### 4.4 Bone/Antler

Storage: Avoid extremes of temperature and humidity, target RH 50-55%, 150 lux

| Context No | Finds Code | Assessment |
|---|---|---|
| 23 | AB | Clear plastic box labeled "**Fragmented bone/antler comb**".. Five fragments of tooth plate (including both end-pieces), three of these have fragments of a decorated cross-bar attached (by Fe rivets). Three additional fragments of decorated cross-bar. One fragment of concreted soil (discarded) and a small envelope of tissue containing 22 comb teeth and 1 fragment of bone.<br>Condition: all fragments show some pitting and some grey staining. There is orange-brown staining near the iron rivets. Several fragments are cracked and fragile.<br>**Proposed treatment: digital photography. Remove soil (air abrasive with air or sodium bicarbonate). Repack. (3 hours) Refer to specialist to confirm ID, antler or bone? If required for display, this comb could perhaps be reconstructed; estimate could be provided after the comb has been cleaned and joins determined.** |

### 4.5 Shale

Storage: Avoid extremes of temperature and humidity: target RH 45-60%.

| Context no | Finds code | Assessment |
|---|---|---|
| 15 | AG | Clear plastic box labeled "**Shale pendant**". One ring, fairly complete but worn across one area of the narrow side.<br>Condition: the find is light in weight and a smooth matte black surface is present. Silt remains in the many lateral cracks and interstices. There is a small patch of a white deposit on the internal face (a salt?).<br>**Proposed treatment: confirm ID as shale (might be worth an X-ray). If required for display, remove the silt (1 hour).** |

### 4.6 Wood

Species identification follows Schweingruber (1982)5.

| Context No | Assessment | Species. ID |
|---|---|---|
| 14 | Double bagged in self seal plastic bags and delivered in a small Stewarts box. Radially faced Heartwood chipping. 73 l, 22 w, 15 th.<br>Condition: highly eroded, all surfaces abraded.<br>**Proposed treatment: unless from a very significant context or association, the object should be discarded. If to be retained, it will require stabilisation by peg. consolidation followed by freeze drying.** | Quercus sp. |

## 5.0 CONDITION

### 5.1 Iron

The ironwork was covered in sand and silt above very bulky orange-brown corrosion with large inclusions of chalk pebbles, flint, and occasional oolitic stone. The iron is in **very poor condition**: Many X-ray images reveal virtually hollow cores, where the metal has completely corroded away.

### 5.2 Copper alloy

Five of the eight finds require stabilization, others show signs of potentially active corrosion and dry storage is essential for the long term.

### 5.3 Lead Alloy

Four of the five finds are irregular lumps, probably casting debris or waste. The lead shows signs of instability and requires dry storage at <35%RH, and away from paper or other sources of organic acids.

**The metals were generally in poor condition,** many of them unstable. The site provides an aggressive environment for metal finds. The excavated iron will require dry storage at less

than 15%RH for the long term. The non-ferrous finds will require dry storage at less than 35%RH for the long term.

### 5.4 Bone/antler

The osseous material is somewhat weak, there are pits and soft areas, and most of the comb teeth have broken. The iron rivets have corroded and expanded, cracking the surrounding organic matrix.

### 5.5 Shale

The shale is in good condition but lateral cracking was observed**.**

### 5.6 Wood

The wood was structurally in a good state of preservation. Waterlogged anoxic conditions were maintained in the context in which the material survived up to the time of excavation. The material remains in wet storage to await your decision, (see recommendations in section 6.5 below)

## 6.0 STATEMENT OF POTENTIAL

This report was written without seeing the site, and without the benefit of discussion with other members of the project team.

### 6.1 Dating evidence

Initial examination of the Roman coins suggests a provisional dating to the mid 4th century: 1AB is a 4th century copy of a Roman coin; 15AB is also Roman (AD 364-378), 91AA is coin of Magnentius AD 350-353. The coins and their X-radiographs should be referred to a numismatist, in order to confirm dating and suggest any further cleaning required for identification. They are stable for the long term in desiccated storage (<35% RH) without any further intervention.

### 6.2 Indicators of preservation

There was extensive metallic corrosion, suggesting that the excavated areas provided an aggressive burial environment. The corrosion products did not reflect waterlogged anoxic environments which would favour organic preservation; however the presence of the waterlogged wood fragment from context 14 shows that these conditions were present in some areas of the site.

### 6.3 High temperature processes

The once-molten lead waste fragments have only had to reach a temperature above 327 degrees C; the melting could have been accidental and does not on its own constitute evidence for leadworking.

Finds 169AB and AD contained large fragments of charcoal, with one area of 169AD resembling slag. The X-rays are inconclusive; these could be concretions or very corroded iron. Slag fragments were often disposed of or used as landfill/hardcore in the past, so without further evidence of structures or tools it is not possible to conclude that iron was produced here. If these are slag, they may be a random inclusion on this site.

### 6.4 The wood

The object indicates that woodworking was being practiced somewhere in the vicinity, but its abraded condition has removed any further evidence of woodworking technology. The object has either been abraded before ending in its burial context or has been eroded by running water whilst buried. Unless the material is of especial local importance or required for C14 dating, it should be discarded.

## 7.0 RECOMMENDATIONS

Recommendations for further work are highlighted in bold in the tables.

### 7.1 Further investigative conservation

**7.1.1** Further treatment is recommended for

Stylus 15AA, coin 15AB, ring 15AF, sheet fragments 23AA, and stud 93AA. Cleaning and investigation of 23AB, the osseous comb and 15AT, the possible knife blade are also suggested.

#### 7.1.2 Investigative work

Has been recommended only if required for research on the following: Cu alloy handle 1AA, and coins 1AB and 91AA; iron finds 67AA handle or staple, 77AB possible hinge pivot, 106AA object, and 169AB and AD possible slag or concretion. Cleaning is recommended for the shale ring 15AG only if it is required for publication photograph or display. The lead will remain stable if it is stored well, but the adherent soil could be removed if unobscured surface detail is required for research.

Conservation records for each object treated will be supplied on archival paper, a copy will remain in our laboratory. The records are produced in MSWord files, and copies can be provided on disc if requested.

Further cosmetic work or physical support may be required if any finds are selected for photography, illustration or display. Please notify the conservator if this is required.

### 7.2 Analysis and specialist support

*Suggestions for further analysis and specialist support have been made.*

#### 7.2.1 Numismatics

We are in touch with Craig Barclay, now at Hull Museum, and can arrange for him to assess your coins if your receiving museum does not have a numismatist.

#### 7.2.2 Bone/antler ID for RF23AB

Can be arranged in house or at Bradford University.

#### 7.2.3 Shale/jet ID for RF15 AG

We could X-ray this and consult Ian Panter, our Regional Scientific Advisor at EH if secure

identification is important to you.

### 7.3 Storage

#### 7.3.1 Packaging on arrival at the lab

The metalwork had been packed in perforated mini-grip bags; fragile pieces were packed in clear plastic boxes with acid-free tissue packing. The non-ferrous metals were stored in a desiccated plastic box labelled "1 of 3". The iron was stored in a desiccated plastic box labelled "2 of 3".

The remaining finds were in a plastic sealed box labelled "3 of 3". The wet-packed wood was double bagged with a small amount of water in the inner bag, and the shale and bone were packed in clear plastic boxes with acid-free tissue packing

#### 7.3.2 Long term storage

The finds have been packaged appropriately for long term storage. All materials used are archive stable and acid-free. Plastic bags have been pierced to allow airflow, reducing the risk of condensation and mould growth.

**We would recommend the use of 'Jiffy', (polythene) foam inserts for polythene bags to provide additional support and protection against mechanical damage during transit.** Any replacement of packaging materials should be carried out in consultation with a conservator. Avoid paper or card labels in association with metals, especially lead and lead alloys. Acid vapours will cause active corrosion, (Cronyn 1990).

Metals are packed in a 'Stewart' polythene box with sufficient airflow to allow the silica gel to provide a dry micro-environment of less than 15% Relative Humidity which should prevent further corrosion of iron finds, (Knight 1990). **The 100g bag of silica gel in Box 2 was not adequate to maintain this volume at <15%RH, so it was replaced with a 500g bag**. An Indicator strip can be viewed through the plastic. If any part of the strip turns pink the box is no longer desiccated sufficiently and the gel will need to be regenerated.

The shale and bone/antler have been returned to the small Stewart box. Ideally they should be transferred to an unsealed archival storage box (or to a sealed box conditioned to RH 50-55%) for permanent storage.

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# Appendix L

# LOW COMMON LANE

# METALWORK

**M C Bishop**

## 1.0 INTRODUCTION

Small finds at Low Common Lane mostly came from excavated contexts, although those from the general cleaning layer 15 represent material at the bottom of the plough soil and thus possibly worm-sorted to a great or lesser extent. Examination of the spoil heaps 001 by metal detector failed to produce much beyond post-medieval and modern items and one Roman coin.

## 2.0 CATALOGUE

### 2.1 Copper alloy

1. Coin of Magnentius (AD 350–3). D: 20mm. BMP03 091AA

2. Coin (4th century). D: 18mm. BMP03 015AB

3. Coin (4th century). D: 14mm. BMP03 001AB

4. Circular-sectioned stylus with a broad spatulate terminal and a simple point at the other, the shaft being bent in two places to form a broad U-shape. There is simple moulded decoration at the junction of the shaft and the spatulate terminal. Cf an example from Alborough (Bishop 1996, 34, Fig.19, 199). L: 85mm; W: 11mm; D: 4mm. BMP03 015AA

5. Bell-shaped stud. Cf Allason-Jones 1985. D: 36mm; H: 18mm. BMP03 093AA

6. Circular-sectioned ring. D: 17mm; Th: 4mm. BMP03 015AF

7. Peltate handle with moulded decoration and circular base, probably from furniture. Post-medieval. H: 47mm; W: 42mm; Th: 7mm; Diam base: 26.5mm. BMP03 001AA

8. Fragments of sheet. BMP03 023AA

### 2.2 Iron

9. Spade sheath of Manning's (1985) Type 2, the straight-mouthed form. Cf Manning 1985, Fig.11. L: 155mm; H: 55mm. BMP03 067AA

10. Curving rod. Modern? L: 190mm; D: 4mm. BMP03 015AM

11. Blade. Post-medieval? L: 180mm; W: 26mm. BMP03 017AA

12. Nail. L: 52mm. BMP03 015AH

13. Nail. L: 45mm. BMP03 015AK

14. Nail. L: 35mm. BMP03 015AL
15. Nail. L: 23mm. BMP03 015AN
16. Nail. L: 41mm. BMP03 015AP
17. Nail. L: 51mm. BMP03 015AQ
18. Nail. L: 62mm. BMP03 015AR
19. Nail. L: 48mm. BMP03 015AS
20. Nail. L: 54mm. BMP03 015AT
21. Nail. L: 37mm. BMP03 021AA
22. Nail. L: 38mm. BMP03 023AC
23. Nail. L: 68mm. BMP03 055AC
24. Nail. L: 38mm. BMP03 055AD
25. Nail. L: 36mm. BMP03 058AA
26. Nail. L: 52mm. BMP03 067AB
27. Nail. L: 53mm. BMP03 067AC
28. Nail. L: 90mm. BMP03 077AB
29. Nail. L: 73mm. BMP03 077AD
30. Nail. L: 60mm. BMP03 078AA
31. Nail. L: 56mm. BMP03 091AB
32. Nail. L: 58mm. BMP03 106AA
33. Nail. L: 32mm. BMP03 106AB
34. Nail. L: 42mm. BMP03 123AB
35. Nail. L: 31mm. BMP03 138AA
36. Nail. L: 28mm. BMP03 169AC
37. Fragment of object, possibly a nail. L: 64mm. BMP03 055AE
38. Fragment of object. L: 65mm. BMP03 015AI
39. Fragment of object. L: 44mm. BMP03 015AC
40. Fragment of object. L: 23mm. BMP03 015AJ

41. Fragment of object. L: 48mm. BMP03 015AO

42. Fragment of object. L: 90mm. BMP03 169AD

43. Fragment of object. L: 88mm. BMP03 169AB

### 2.3 Lead alloy

44. U-sectioned triangular piece of binding pierced by a single nail hole. The nail hole appears to have been punched through before the sheet was bent as the edge is peened over. L: 27mm; W: 14mm; H: 22mm; Max th: 2mm. BMP03 015AD

45. Piece of sheet, folded over on itself. L: 94mm; W: 83mm; Max th: 9mm. BMP03 077AA

46. Piece of sheet, folded over on itself, possibly waste from production. L: 89mm; W: 41mm; Th: 10mm. BMP03 055AA

47. Amorphous lump, possibly waste from production. L: 54mm; W: 48mm; Th: 11mm. BMP03 055AB

48. Amorphous lump, possibly waste from production. L: 28mm; W: 16mm; Th: 9mm. BMP03 015AE

### 2.4 Bone

49. A double-sided composite bone or antler comb with several damaged teeth. The comb, which consists of four plates fastened together through two side plates using iron rivets, has simple undecorated end plates. As is common with Roman combs of this type, the teeth are finer on one side than the other. The side plates are decorated with double diamond-shaped lattice incisions. Composite combs are generally held to date from the 3rd century AD or later (MacGregor 1985, 92, Fig. 51a–c). L: 94mm; W: 34mm; Th: 4mm. BMP03 023AB.

### 2.5 Shale

50. Oval-sectioned annular shale pendant. Wear marks indicate the point of suspension and there is some areas of fracturing which have been worn smooth. Cf an example from Coventina's Well, Carrawburgh (Allason-Jones and McKay 1985, 34, No. 101). D: 53mm; Int d: 22mm; Th: 14mm. BMP03 015AG.

## 3.0 DISCUSSION

The three coins help to confirm a 4th century date for the site. A copper alloy stylus is synonymous with literacy and might be expected on any Roman site where clerical skills might be anticipated whilst bell-shaped studs come from a wide variety of sites, including military ones.

The iron nails are indicative of timber construction and are a common find on Roman sites of all types, whilst the iron spade sheath might be thought to derive from horticultural or agricultural activities, although in reality it may have had a much wider range of uses.

Pieces of lead alloy, along with signs of lead working, are again characteristic of most Roman sites and thus not particularly diagnostic.
The bone comb and the shale pendant, by contrast with the other artefacts, are personal items

and domestic in nature.

Thus the small finds provide a mixed picture of industrial, agricultural or horticultural, and domestic activities on the site at Low Common Lane.

## 4.0 RECOMMENDATIONS

No further work on the small finds should be necessary with the exception of the coins which should be examined by a numismatist specialising in the Roman period.

An illustrated catalogue of the identifiable Roman small finds should be published, although the presence of certain categories of find (such as nails or lead alloy waste) need only be summarised in tabular form.

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# Appendix M

# LOW COMMON LANE

# SKELETAL REMAINS

**Joanna Higgins**

## 1.0 ASSESSMENT OBJECTIVES

The objectives of this report are to assess the quantity, nature and condition of the assemblage of human remains, and to establish the potential of the material for further study. The nature and extent of additional study, if required, will be specified. These objectives are in accordance with English Heritage guidelines on the production of assessment documents for human bones from archaeological sites (Mays *et al.* 2002).

## 2.0 INTRODUCTION

Archaeological excavations prior to the insertion of a water pipeline between Brough-on-Humber and Melton, East Yorkshire, revealed a sequence of archaeological features. Several phases of activity were identified, including a substantial Romano-British ditched enclosure containing some evidence of occupation, as well as a T-shaped kiln, possibly used for grain drying.

A single flexed inhumation within an oval grave was situated immediately adjacent to the kiln. The skeleton was orientated north-east to south-west, and there were no accompanying grave goods.

A small amount of disarticulated human bone was found in three additional contexts.

## 3.0 NATURE AND CONDITION OF THE ASSEMBLAGE

The single skeleton 96 was non-adult, and was of good general preservation, over 75% complete, and moderately fragmented. The cranium was highly fragmented.

The disarticulated remains consisted of well-preserved infant bone fragments (149 and 159) except for those found in the kiln flue fill 39, which may be associated with skeleton 96.

## 4.0 POTENTIAL FOR FURTHER STUDY

The single inhumation is of limited value for bioarchaeological population studies, as one inhumation cannot represent the whole population, or reflect variation within that population. However, the dispersed character of rural Romano-British burials and the present day tendency towards partial excavation has led to difficulties in acquiring a sample of sufficient size for the study of burial custom and skeletal biology of rural populations. It is therefore important to fully record individual burials when encountered.

The disarticulated remains have very limited potential for bioarchaeological study, unless they exhibit unusual pathologies or other abnormal variation.

## 5.0 RECOMMENDATIONS FOR FURTHER WORK

Skeleton 96 should be subject to full basic analysis. Age, sex, pathologies, metric and non-metric data should be recorded where possible. Comparisons with contemporary inhumations may be drawn to demonstrate any unusual findings.

The disarticulated bone from additional contexts should be identified, and unusual pathologies or other abnormalities should be noted.

The skeletal remains should be retained in a suitable location subsequent to analysis, for future research purposes.

## REFERENCES

Mays, S., Brickley, M., and Dodwell, N. (2002), *Human Bones from Archaeological Sites. Guidelines for Producing Assessment Documents and Analytical Reports*, English Heritage Publications.

# Appendix N

# LOW COMMON LANE

## BIOLOGICAL REMAINS

**John Carrott, Allan Hall, Deborah Jaques, Kathryn Johnson and Harry Kenward**

**(Palaeoecology Research Services)**

## 1.0 INTRODUCTION

The site at Low Common Lane was discovered in the course of a watching brief during stripping prior to insertion of a pipeline between the pumping station at Brough-on-Humber and the new wastewater treatment works at Melton, East Riding of Yorkshire (SE 963 254). The site was situated just to the north of a slight eminence in an otherwise low-lying area on the north bank of the Humber and ground water was encountered at about 0.7m below the stripped surface. Truncation of the archaeological deposits was evident, not least through the partial removal of the southern end of the Roman road.

Three phases of Roman activity (Phases 2 to 4, with Phase 3 accounting for the greatest number of features) were identified. A later phase of modern activity (Phase 5) and an earlier, pre-Roman, phase (Phase 1) were also detected. A number of features remained unphased.

Sediment samples ('GBA'/'BS' *sensu* Dobney *et al*. 1992) from 27 contexts, a small quantity of hand-collected shell (approximately 8 litres) and four boxes of hand-collected bone, were recovered from the deposits and submitted to PRS for an evaluation of their bioarchaeological potential.

## 2.0 METHODS

### *Sediment samples*

The sediment samples were inspected in the laboratory. Seven were selected for evaluation (selection of the samples and subsequent processing was undertaken in advance of the archaeological information being available and, as a result, one subsample was taken from a modern context, context 12) and their lithologies recorded using a standard *pro forma*. Subsamples were processed, following the procedures of Kenward *et al*. (1980; 1986), for the recovery of biological remains.

The washovers resulting from processing were examined for plant and invertebrate macrofossils. In all cases, the washovers were examined wet; all but one then being dried before being re-checked. The residues were dried and examined for larger plant macrofossils and other biological and artefactual remains.

### *Hand-collected shell*

Brief notes were made on the preservational condition of the hand-collected shell and the remains identified to species where possible. For oyster (*Ostrea edulis* L.) shell additional notes were made regarding: numbers of left and right valves; evidence of having being opened using a knife or similar implement; measurability of the valves (though measurements were not taken as part of this evaluation); damage from other marine biota (polychaet worms and dog whelks); encrustation by barnacles. Preservation was recorded subjectively on two

four-point scales for erosion and fragmentation as: 0 – none; 1 – slight; 2 – moderate; 3 – severe.

***Hand-collected vertebrate remains***

For the hand-collected vertebrate remains that were recorded, data were entered directly into a series of tables using a purpose-built input system and *Paradox* software. Records were made concerning the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity'). Other information, such as fragment size, dog gnawing, burning, butchery and fresh breaks, was noted, where applicable.

Fragments were identified to species or species group using the PRS modern comparative reference collection. The bones which could not be identified to this level were described as the 'unidentified' fraction. Within this fraction fragments were grouped into a number of categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal (assumed to be caprovid, pig or small cervid), and totally unidentifiable. These last groups are represented in Table 3 by the category labelled 'unidentified'.

## 3.0 RESULTS

***Sediment samples***

The results of the investigations of the sediment samples are summarised in Table N1.

As far as the plant macrofossils are concerned, small amounts of charred (and in some cases silicified) cereal remains were present in all but one of the samples, though preservation of charred grains and chaff was rarely very good.

The traces of insect remains and the remains of the burrowing land snail *Cecilioides acicula* are most likely all to be modern. Two samples from Roman (Phase 3) deposits (contexts 39 and 146) also gave small assemblages of other land snails. These other snails (and one or two individuals from three further contexts) are rather less likely to be intrusive and perhaps offer some information on the past ecology of the site.

***Hand-collected shell***

A small quantity of hand-collected shell (approximately 8 litres) was submitted. With the exception of a single periwinkle (*Littorina littorea* (L.)) from context 15, all of the small quantity of shell was oyster valves recovered from 16 contexts (two unphased and 14 from Roman deposits – three Phase ?2 and 11 Phase 3). Individual context assemblages were, in the main, of only a few valves, the exceptions being those from context 15 (1160g, a general cleaning layer of Phase 3) – which accounted for almost half (by weight and counts) of the shell from the site – and context 77 (576g, unphased layer). Most of the valves were rather poorly preserved being both eroded (average context erosion score 2.7) and moderately fragmented (average fragmentation score 1.6). The presence of small flakes of shell in many of the bags shows that the material is continuing to deteriorate.

Approximately 94% of the valves could be identified as either left or right valves but less than 17% of the valves for which 'side' could be determined were measurable (though measurements were not taken as part of this assessment). Evidence of the oysters having been opened using a knife or similar implement (as shown by 'V'- or 'W'-shaped notches on the shell margins) was noted on up to 20% of the valves. There was very little evidence of damage to the valves (e.g. polychaet worm burrows, dog whelk holes) or encrustation (e.g. by

barnacles) by other marine biota. Up to 24% of the valves showed some fresh breakage presumably caused during excavation.

Summary information for the hand-collected shell assemblage is presented as Table 2.

***Hand-collected vertebrate remains***

Four boxes of hand-collected bone (each box of approximately 18 litres) were submitted for evaluation. Vertebrate material was recovered from 33 contexts and amounted to 1228 fragments. A large proportion of the remains (1038 fragments) were from deposits of Roman date, representing two of the phases (Phases 2 and 3) of activity dating to this period. The additional 190 fragments were from nine contexts which could not be phased because of an absence of stratigraphic and/or artefactual evidence.

Material from context 15, a general cleaning layer, accounted for two of the boxes of bones, and just over half of the total number of fragments recovered. This assemblage was assigned to Phase 3 and, according to the archaeological information supplied by the excavator, the assemblage was associated with structures and occupation deposits.

Preservation of the bones was recorded as good or fair, with only material from a single deposit (context 77) being recorded as of variable preservation and angularity (nature of the broken edges). Fresh breakage was evident throughout, but was particularly noticeable within material from context 15. Generally, fragmentation was low, with most fragments being between 50 and 200mm in maximum dimension. Burnt bones were rarely encountered, and evidence for dog-gnawing was minimal. Some mixing of the deposits is suggested by the presence of human remains in several contexts (e.g. context 39).

Many of the cattle bones from contexts 15 and 107 showed butchery marks and the numerous unidentified fragments from these deposits probably results from the extensive chopping of the bones. This systematic butchery has been interpreted as evidence for the exploitation of marrow and marrow fat (Dobney *et al.* 1996). Several crania, both pig (context 23) and caprovid (context 27), had been split longitudinally, whilst a horse mandible had clearly been chopped to separate the two sides of the jaw. Additionally, a horse humerus fragment from context 15 showed both chop and knife marks on the shaft. This may suggest the occasional consumption of horse meat, but could also represent the disarticulation of carcasses for disposal or for feeding to dogs. Knife marks were also visible on some of the bird bones. A large red deer antler fragment, the main beam of which had been chopped/sawn, may be an indication of craft activities. Antler would have been used for the manufacture of tools and personal items such as combs.

A range of species were identified (Table 3) from these deposits, which typically included the major (cattle, caprovids and pigs) and minor (horse, dog and cat) domestic mammals. Caprovid remains were recovered in almost equal quantities to cattle, whilst pig remains were also relatively numerous. Counts for both pigs and caprovids were exaggerated by the presence of numbers of isolated teeth, however. Other skeletal elements which were common for all the main domesticates were mandibles, and, for cattle and caprovids, tibiae were abundant.

Wild mammals were represented by single fragments of roe and red deer and hare, whilst birds, including goose, chicken and duck were also recorded.

An appreciable number of the identifiable fragments were measurable (77) and there were 21 mandibles with teeth *in situ*.

## 4.0 DISCUSSION AND STATEMENT OF POTENTIAL

The plant remains are of limited interpretative value except inasmuch as the silicified material probably points to the burning of a mass of hulled grains, and this is entirely consistent with the nature of contexts 39 (fill of flue of T-shaped kiln) and 146 (burnt deposit). Certainly they imply either that the kiln *was* used for drying grain, or that a mass of grain was used as fuel. Similar material is recorded from time to time in the region, the nearest finds to that at Melton being from Roman deposits at Welton Wold (Robinson and Straker 1990)—also from the flue of a T-shaped drier—and at a site NE of Goodmanham (on the route of the Teesside-Saltend Ethylene Pipeline: Hall *et al*. 2003)—from a ditch fill of Roman date.

The mollusc remains (mainly the small assemblages from contexts 39 and 146) were a mixture of dry and damp grassland forms, with some taxa also able to exploit shadier habitats in woodland or scrub. As remarked in connection with certain of the plant assemblages (above), the snail assemblages were similar in both size and composition to those recovered from a site north-east of Goodmanham (Hall *et al*., 2003). Some other nearby and contemporary sites have also produced snail assemblages of similar character but of significantly greater size (e.g. previous work around Melton, Carrott *et al*. 1999; Carrott 2002, and at Elloughton, Hall *et al*., 2002), all indicating a similar landscape. Given the natures of contexts 39 and 146—kiln flue and burnt deposit, respectively—and their content of plant remains, it seems more likely that at least some of the mollusc taxa present were transported to these deposits (perhaps with the plant material) than that the fauna might be wholly autochthonous.

Almost all of the hand-collected shell was of rather poorly preserved oyster from deposits of Roman date. The small quantity of remains recovered, and their generally poor condition, renders the assemblage of little interpretative value. However, it seems most likely that all of the oyster shell derives from human food waste.

The deposits at this site produced a small, but largely well preserved assemblage of bone. Not surprisingly, the major domesticates formed the bulk of the assemblage, with caprovid remains being as numerous as cattle. Skeletal element representation suggested that the remains were mostly butchery waste, from both primary and secondary carcass preparation, although a component of domestic refuse was indicated by the presence of the bird and hare remains. The butchery techniques noted at this site are typical of Roman vertebrate assemblages and have also been recorded elsewhere in the region, e.g. Welton Road, Brough (Hamshaw-Thomas and Jaques 2000), Tanner Row, York (O'Connor 1988).

Many of the identified fragments and those of use for providing age-at-death and biometrical data were from context 15, the general cleaning layer. For the current vertebrate assemblage to be of any more than limited value, the integrity of this layer would have to be established, given that context 15 does not represent a discrete deposit or feature.

## 5.0 RECOMMENDATIONS

No further analysis of the sediment samples or the remains recovered from them is warranted.

Well preserved vertebrate material from rural sites of Roman date is unusual and, although this is not a large assemblage, the data from the hand-collected bones could provide a valuable contribution to any synthetic projects carried out in the region. Therefore, providing dating is sufficiently reliable, the hand-collected vertebrate remains deserve further consideration; a basic archive should be recorded for the current assemblage, including biometrical and age-at-death data. These remains do show the potential of the deposits in this

area for preserving bone and this should be borne in mind if further excavation is undertaken.

## 6.0 RETENTION AND DISPOSAL

The hand-collected vertebrate material should be retained. Unless there are further archaeological questions to be pursued, the remaining sediment samples and the hand-collected shell assemblage may be discarded.

## 7.0 ARCHIVE

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

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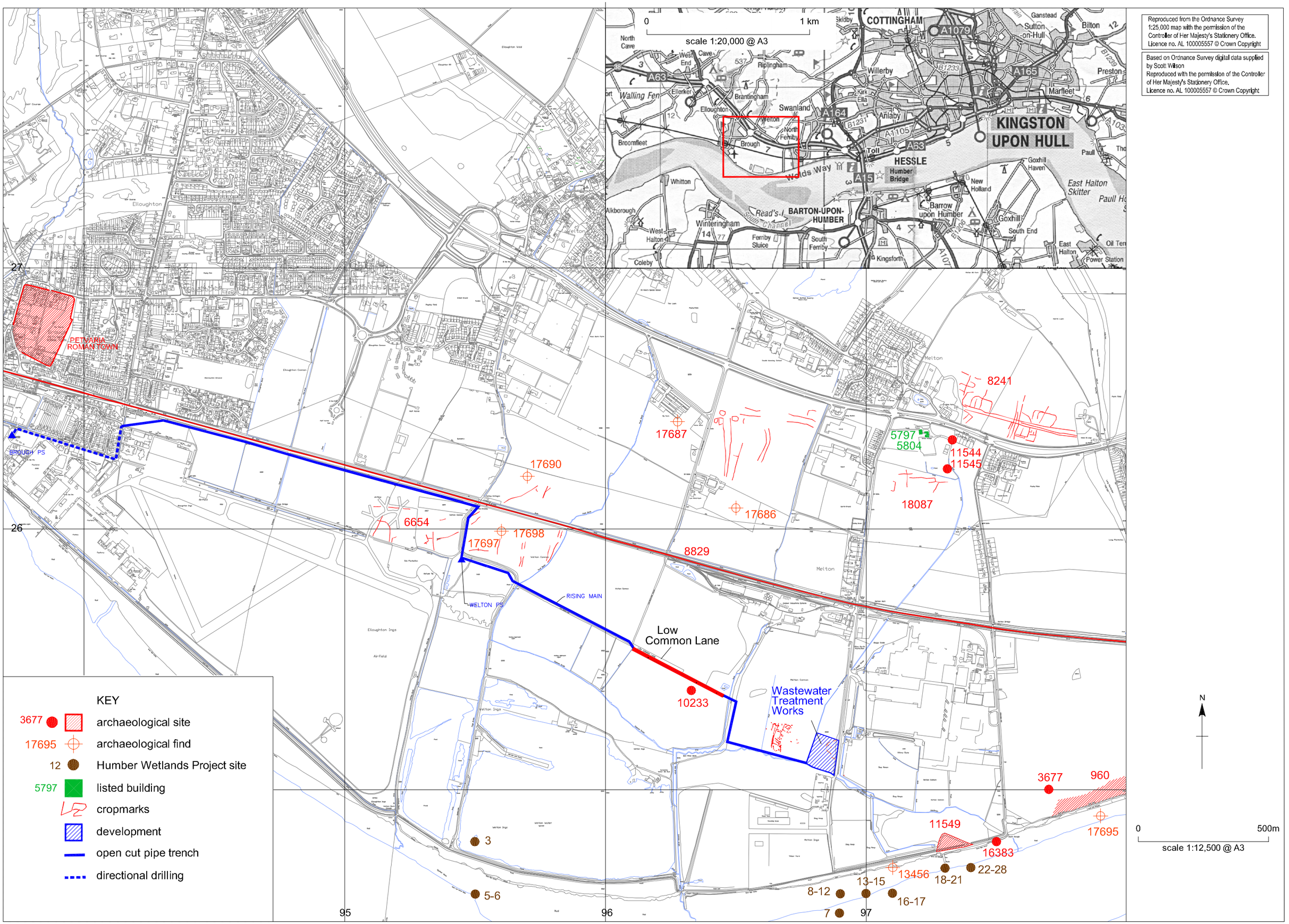




*Figure 1 Melton Wastewater Treatment Works and Low Common Lane: location of recorded archaeological sites*

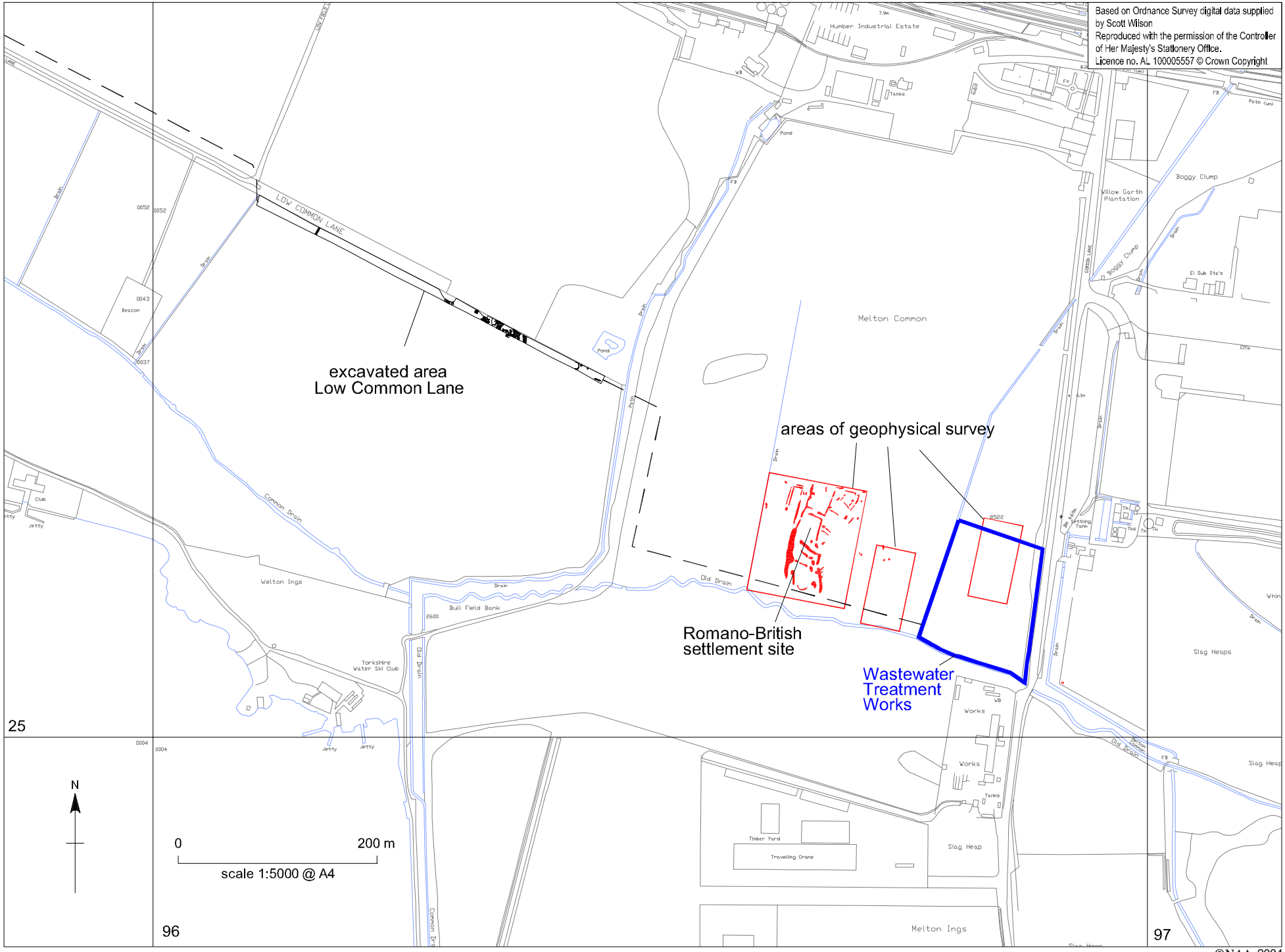


*Figure 2 Melton Wastewater Treatment Works and Low Common Lane: areas of watching brief and excavation*

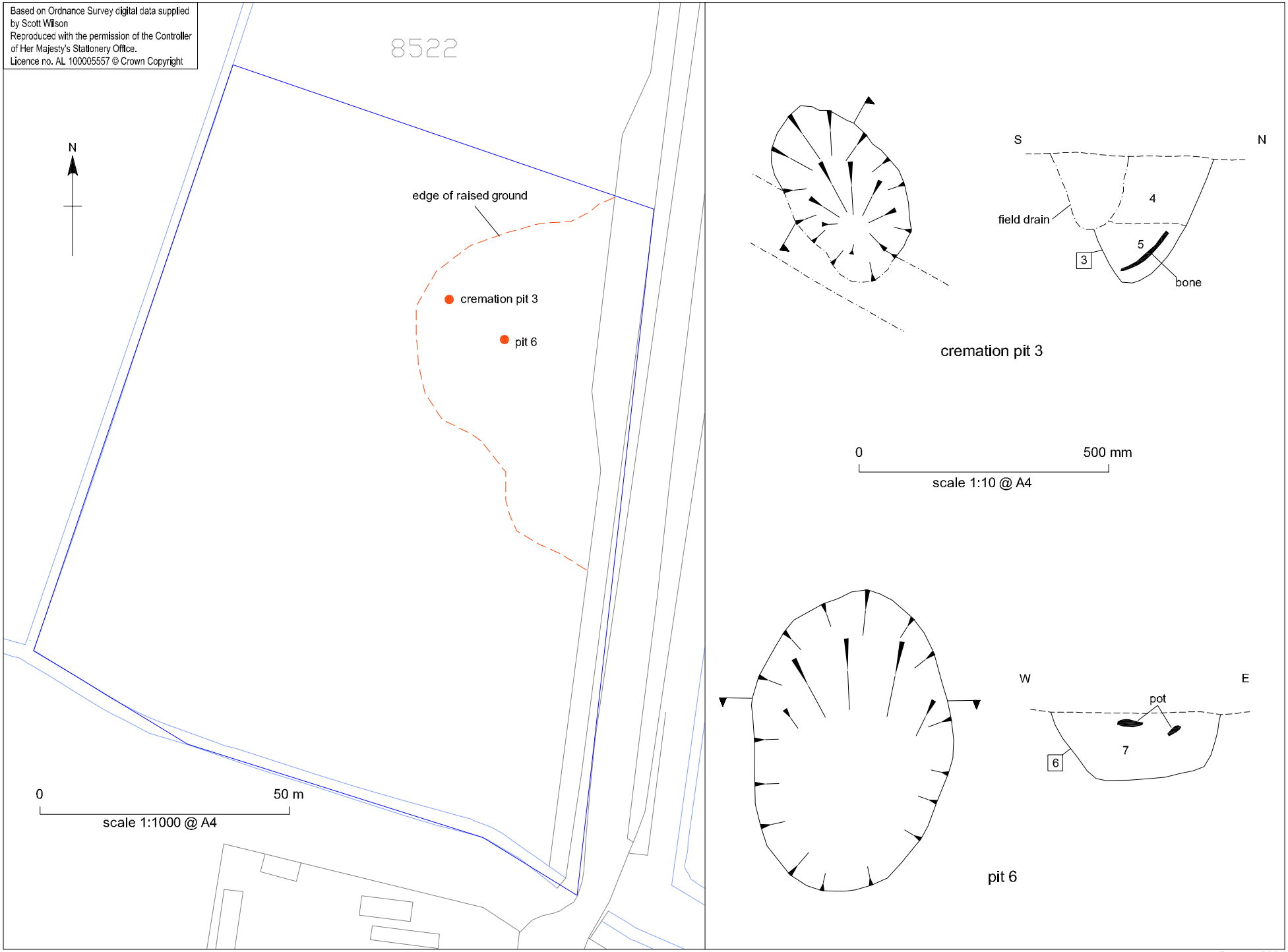


*Figure 3 Melton Wastewater Treatment Works: archaeological features*

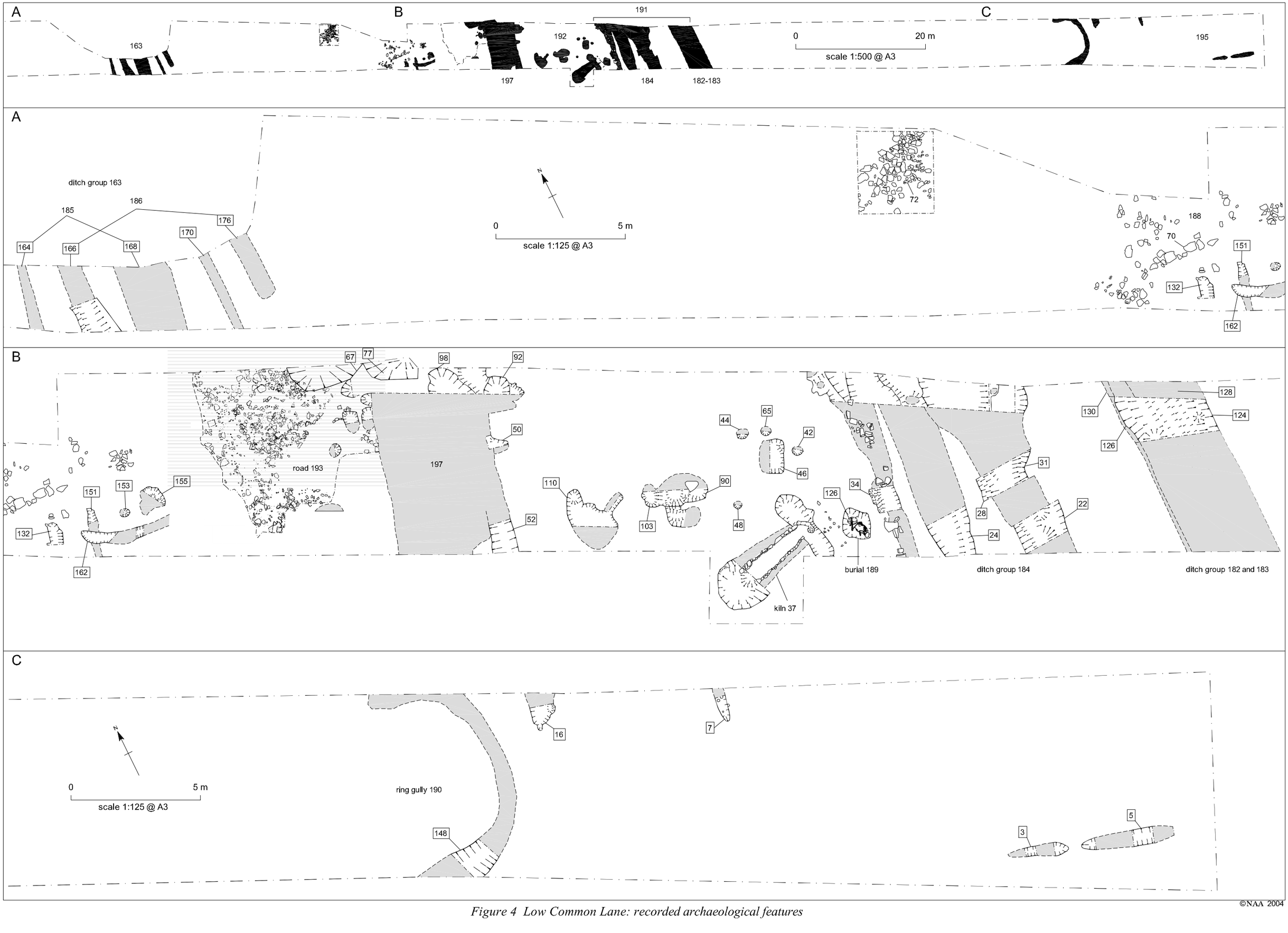




*Figure 4 Low Common Lane: recorded archaeological features*

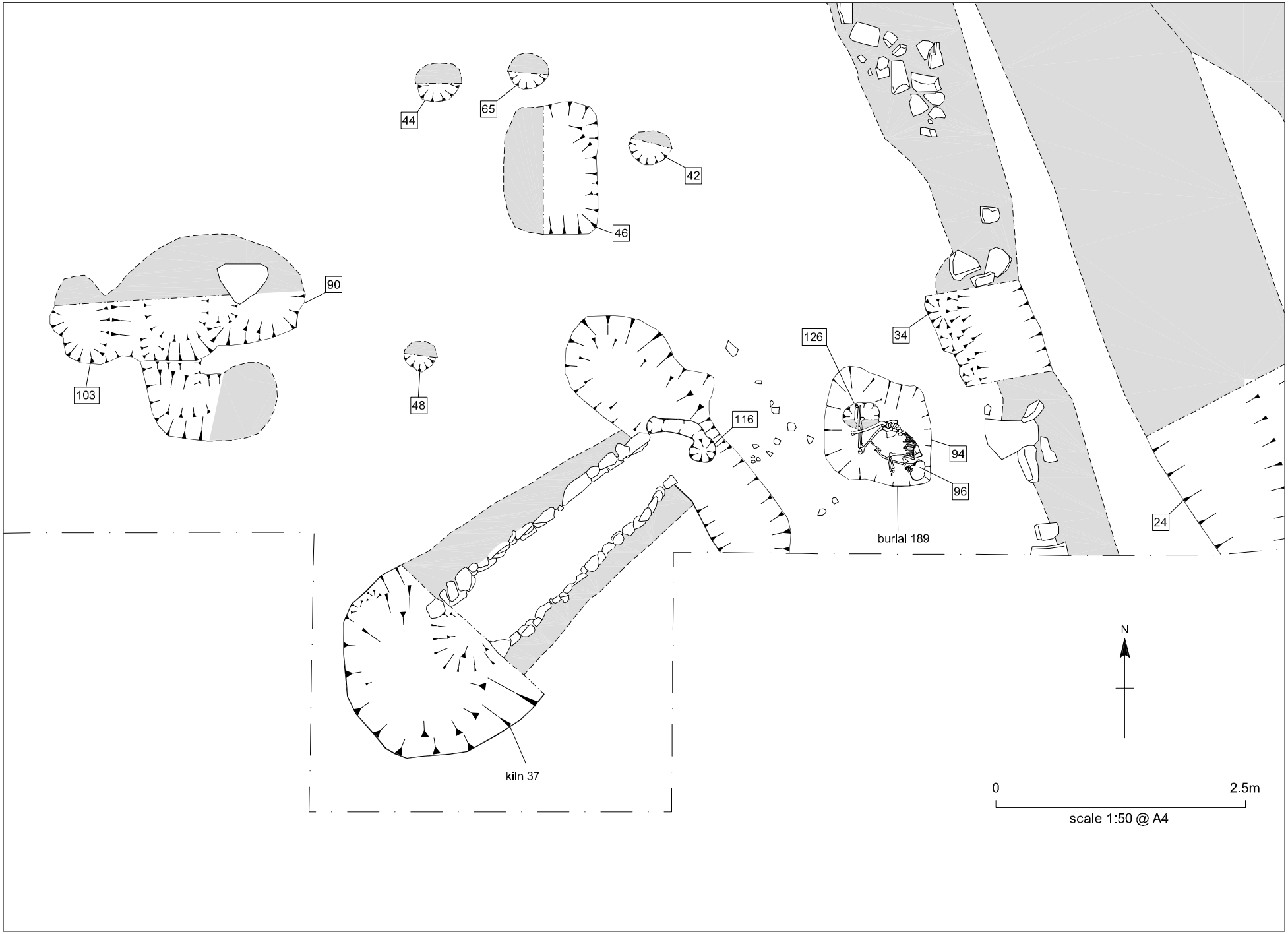




*Figure 5 Low Common Lane: detail of kiln and burial*

*Plate 1: General view of the Low Common Lane excavations looking south-east along the pipeline corridor*


*Plate 2: Low Common Lane. North-facing section of ditch 132. Scale intervals at 20cm*


*Plate 3: Low Common Lane. General view of road surface 55 from the south-west. Scale intervals at 20cm*


*Plate 4: Low Common Lane. View of the stamped* imbrex *of the VI Legion* in situ. *Scale intervals at 1cm*

*Plate 5: Low Common Lane. View of kiln 37 as excavated from the west. Scale intervals at 20cm and 50cm*


*Plate 6: Low Common Lane. View of skeleton 96 from the west. Scale intervals at 20cm*