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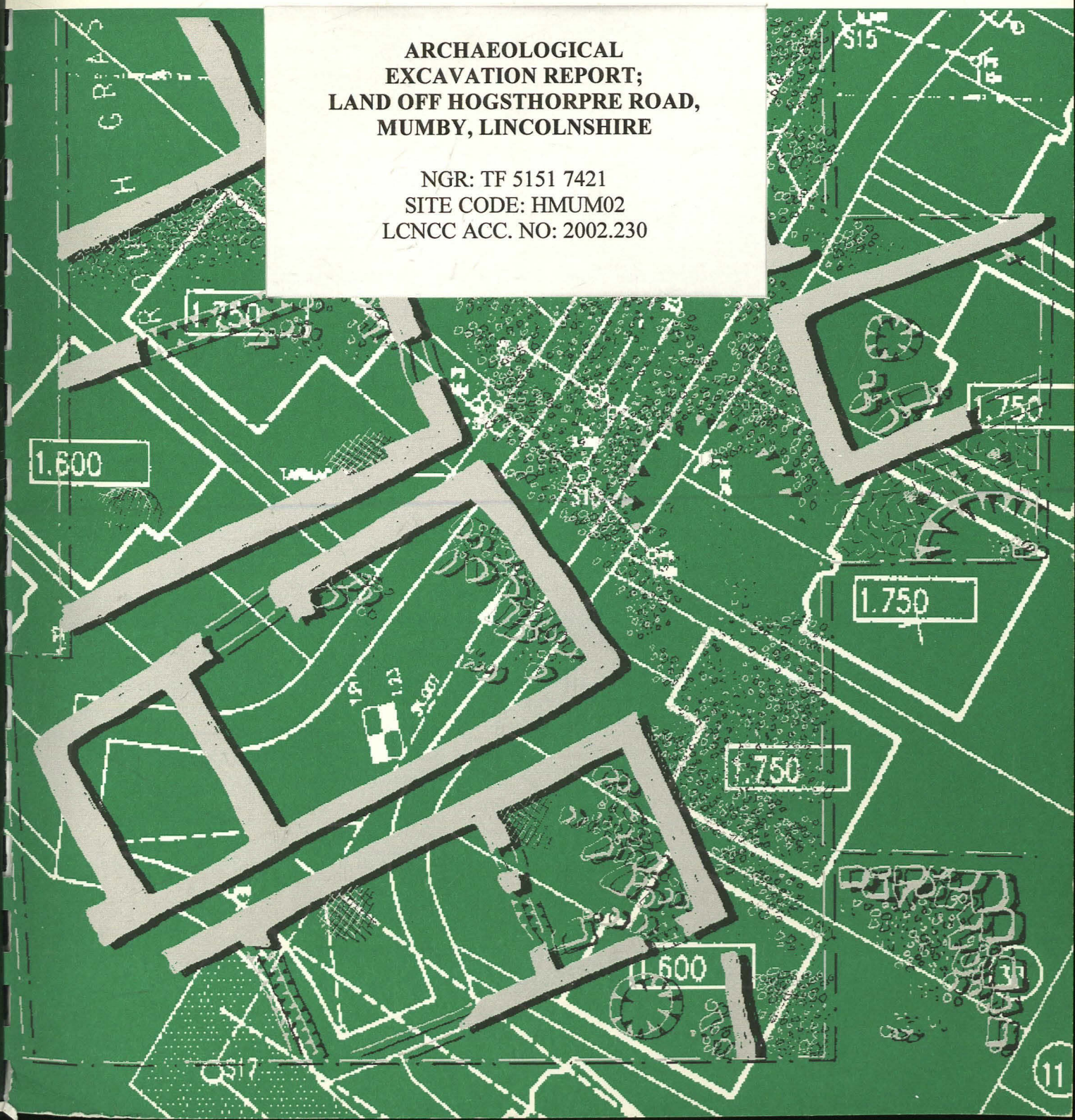
ARCHAEOLOGICAL EXCAVATION REPORT; LAND OFF HOGSTHORPRE ROAD, MUMBY, LINCOLNSHIRE

NGR: TF 5151 7421
SITE CODE: HMUM02
LCNCC ACC. NO: 2002.230



EVENT L15370 SOURCE L19625 L19626 PRN 44045 44235 Medieval/post medieval Roman

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Report prepared for
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July 2002

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Summary

- *A small archaeological excavation was undertaken for Hugh Bourn Developments Ltd., prior to the residential development of land off Hogsthorpe Road, Mumby, Lincolnshire.*

- *The site is within the historic core of the medieval settlement of Mumby, and is within an area of known Romano-British salt-making activity. A preceding trial excavation exposed features of Iron Age, Romano-British, medieval and post-medieval date, predominating towards the north end of the site.*

- *A series of Romano-British linear features, and one of medieval/post-medieval date were exposed. The distribution and nature of Romano-British activity suggests that a former settlement focus existed immediately to the north-west of the development area, with possible evidence of industrial activity.*

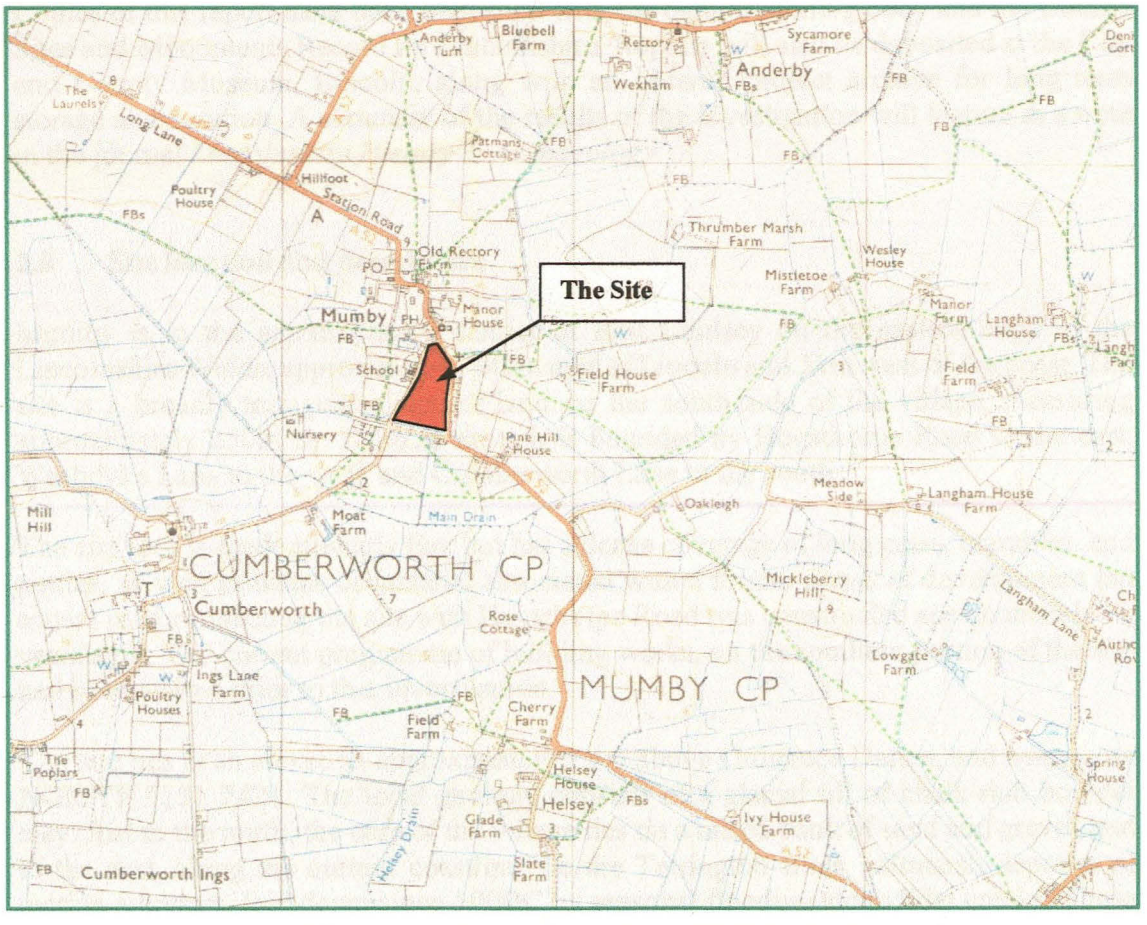

Fig.1: Site location (scale 1:25,000)
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1.0 Introduction

Pre-Construct Archaeology (Lincoln) were commissioned by Hugh Bourn Developments Ltd. to undertake a programme of intrusive archaeological investigation in advance of a residential development on land off Hogsthorpe Road, Mumby, Lincolnshire.

These works were undertaken to fulfil the objectives of a formal project brief issued by the Assistant Built Environment Officer for Lincolnshire County Council, and a project specification prepared by Pre-Construct Archaeology (Lincoln). This approach is consistent with the recommendations of *Archaeology & Planning: Planning Policy Guidance Note 16*, (Department of the Environment, 1990), *Management of Archaeological Projects* (English Heritage, 1991), *Standards and guidance for archaeological excavation*, (IFA, 1994), and the Lincolnshire County Council document *Lincolnshire Archaeological Handbook: a manual of archaeological practice* (LCC, 1998).

Copies of this report have been deposited with the commissioning body and the County Sites and Monuments Record for Lincolnshire. Reports will also be deposited at the City and County Museum, Lincoln, along with an ordered project archive for long term storage and curation. A summary of the results of the investigation will feature as a note in the journal *Lincolnshire History & Archaeology*

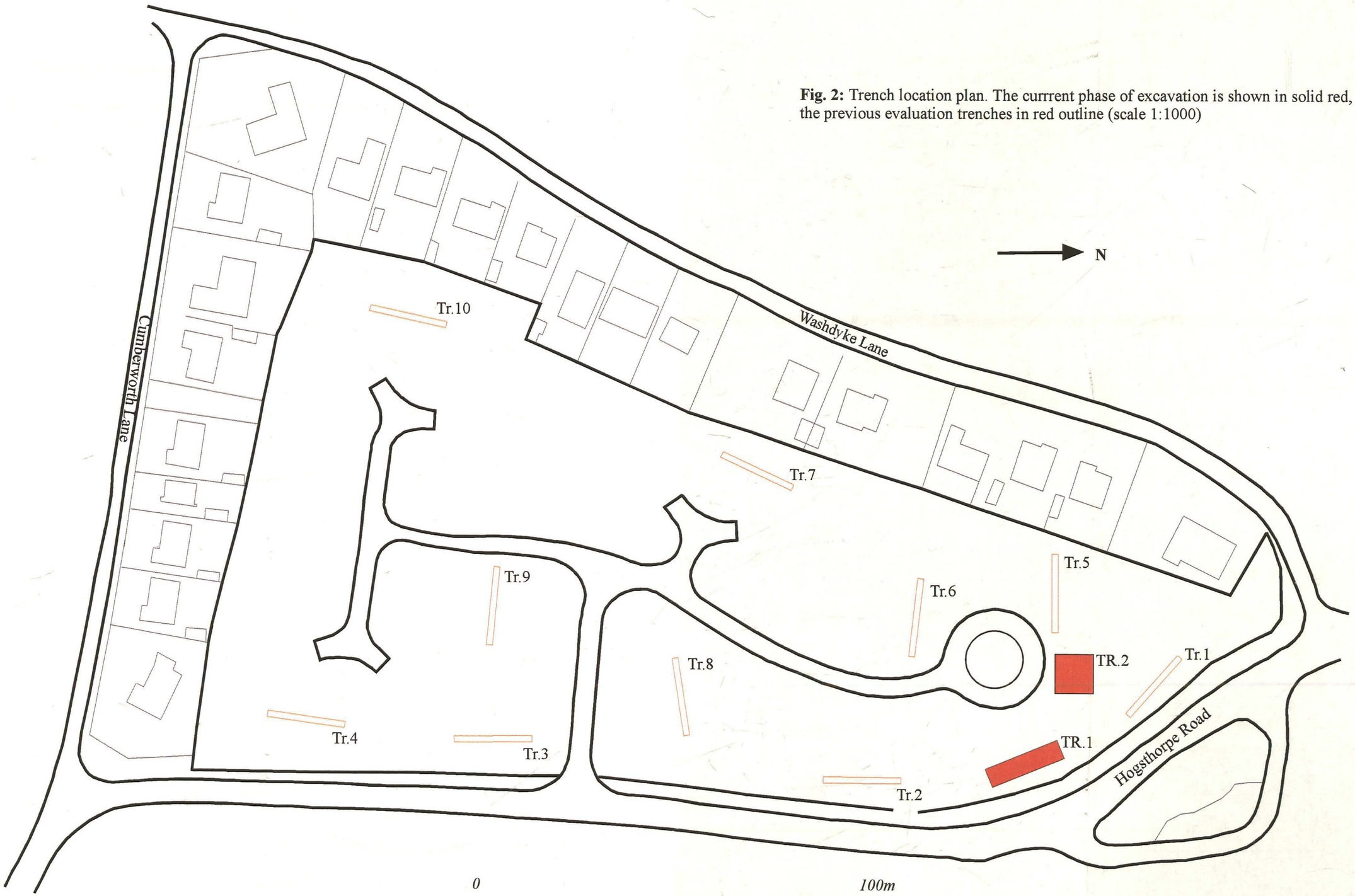
2.0 Site location and description

Mumby is in the administrative district of East Lindsey on the eastern edge of the Lincolnshire Wolds, approximately 54km east of Lincoln and 5km west of the coast. The site is a broadly triangular piece of land on the south side of the village, measuring approximately 250m by 125m in area. It is bounded by Hogsthorpe Road to the east, Washdyke Lane to the west, and Cumberworth Lane to the south.

The site area is predominantly flat, but has a dense coverage of long grass, brambles, and nettles, as well as heaps of material associated with a former phase of development (an access road connecting the site with Hogsthorpe Road was constructed approximately 10 years ago). The current programme of building works, on the southern portion of the site had been started prior to this investigation.

The site lies at an elevation approximately 3.4m above Ordnance Datum, and centres on NGR TF 5151 7421. The local geology consists of a glacial till of chalk-rich boulder clay. Just to the north, the core of the village lies on a raised bank of sand and gravel, and to the east, along the current coastline, lie the Terrington Beds, saltmarsh deposits of marine alluvium; laid down since 500BC by seasonal flooding along tidal creeks. These deposits overlie a solid geology of Cretaceous Chalk (British Geological Survey, 1996).

Fig. 2: Trench location plan. The currrent phase of excavation is shown in solid red, the previous evaluation trenches in red outline (scale 1:1000)



3.0 Planning background

A previous planning permission was granted for a residential development prior to the introduction of a new Guidance Note, PPG16. However, a fresh application (planning ref. S/125/1497/01) was submitted for the current development, comprising 39 dwellings with garages.

Prior to the determination of this application, East Lindsey District Council requested further information; in the form of an archaeological field evaluation to assess the significance of archaeological deposits that may be at threat from the development proposal. This evaluation was carried out in November 2001 (Clay, 2001). Subsequently, the Assistant Built Environment Officer for Lincolnshire County Council requested the excavation of two small trenches at the north end of the site, as a final mitigation strategy for the area. This approach is consistent with the recommendations of *Archaeology and Planning: Planning Policy Guidance Note 16 (PPG16),* 1990.

4.0 Archaeological and historical background

This area of the Lincolnshire Marsh is known for its extensive salt making industry, concentrated in the area between Hogsthorpe and Ingoldmells. Finds from Hogsthorpe suggest that this industry was underway as early as the Bronze Age (Thomas & Fletcher, 2001), although it becomes more widespread during the later Iron Age and Romano-British periods (Lane, 1993). The closest known saltern is of Romano-British date; discovered in the south-east corner of the parish, 1.5km from the proposed development (SMR data, see table below).

The County SMR records the discovery of 2nd and 3rd century Romano-British pottery from a drainage trench, approximately 0.5km north-west of the village.

There is no extant evidence relating to settlement of the area in the Saxon period, although the place-name derives from the Old Norse personal name *'Mundi'*, with the Old Danish suffix *'-by'*, meaning 'Mundi's farmstead' (Cameron, 1998). This suggests that a settlement was in existence during the period of Viking influence, around the later 9th century.

In the Domesday Book, Mumby appears as *'Mundebi'*, with much of the land under the ownership of Eudo, on behalf of Count Alan. This appears to have been a substantial estate centre, with an outlier at Claxby and a jurisdiction in Theddlethorpe. Further estates were owned by Gilbert of Ghent, and Eudo, son of Spirewic (probably the same Eudo who was managing the estates of Count Alan)(Morgan & Thorne, 1986).

Medieval settlement activity has been recorded in the form of pottery scatters, and aerial photography has revealed settlement evidence and medieval field systems around Mumby, as well as ridge and furrow around Helsey, approximately 1km to the south. To

the east of Mumby, the SMR records a moated enclosure, which (when ploughed flat) yielded building materials and medieval pottery.

The parish Church, St. Thomas of Canterbury, which lies just to the north of the site, is predominantly 15th century, although its original foundation can be dated to the 12th (Goodrick, 1988).

In November 2001, an archaeological field evaluation was carried out on the site, consisting of 10 trial trenches, each 20m in length. A single linear feature of Middle to Late Iron Age date was exposed towards the north end of the site, adjacent to Hogsthorpe Road. Several Romano-British and medieval features were investigated towards the north end of the site, on the edge of the gravel bank on which the modern village now stands. The southern area of the site exposed post-medieval, modern and undated features, that were deemed to be of limited archaeological significance (Clay, 2001).

SMR reference no.	Description	NGR
41954	Roman saltern site with briquetage & C2/3 pottery	TF 5219 7285
41976	Medieval and later pottery	TF 5230 7460
41977	Moated enclosure with building material & medieval pottery Old enclosures & medieval pottery	TF 5200 7440 TF 5229 7457
41979	Roman pottery	TF 5060 7480
41980	St. Thomas' Church, Mumby	TF 5156 7442
41981	Remains of a churchyard cross	TF 5156 7441
41982	Mumby Grange (place name evidence)	TF 5123 7410
41983	Manor House (place name evidence)	TF 5155 7450
41990	Medieval pottery	TF 5050 7490
42863	Post medieval pottery	TF 5151 7409
44045	Medieval settlement of Mumby	TF 515 745
44046	Medieval settlement of Helsey	TF 519 730

5.0 Methodology

The current phase of fieldwork involved the excavation of two trenches. Trench 1, measuring 20 x 5m was positioned along the north-eastern edge of the site, parallel with Hogsthorpe Road, between evaluation Trenches 1 and 2 (see fig. 2). Trench 2 was 10m x 10m and was located immediately to the north of an existing roundabout.

Initial excavation within both trenches was carried out using a 360° mechanical excavator fitted with a 2m wide toothless ditching blade. Topsoil and subsoil layers were removed in spits not exceeding 0.2m in depth. Where archaeological deposits were encountered, all further excavation was continued by hand.

All archaeological features were excavated in accordance with the project specification; summarised as follows:

50% sample of post holes and pits up to 1.5m in diameter

25% minimum sample of pits with a diameter greater than 1.5m

10% minimum sample of all linear features

All features were recorded in plan (1:50), and in section (1:20), and written accounts were prepared on pro forma context record sheets. A colour photographic record was maintained, and selected prints are reproduced in this report (Appendix 1).

The initial machine excavation of the two areas was monitored by the author on Friday, April 26th. Subsequent fieldwork was carried out by a team of five experienced archaeologists, supervised by the author, between Monday, April 29th and Friday, May 3rd, 2002.

6.0 Results

6.1 Trench 1 (figs. 3, 4, 5)

The trench was sealed by a topsoil layer, approximately 0.3m deep, (100). This sealed a mid brown slightly silty clay subsoil, (101). Beneath this layer, two natural deposits were exposed. (102) was a mid orange brown clay with occasional manganese flecks that predominated along the eastern edge of the trench. A slot was excavated through this deposit, and across the width of the trench, showing (102) to be a shallow, possibly waterborne deposit, which was no more than 0.1m deep, and overlay (103), a mid orange brown clay with numerous small chalk pebbles, interpreted as natural boulder clay.

Two linear features were exposed in this trench. At the north end was ditch [105], aligned approximately north-west to south-east. It was approximately 2m wide and 0.4m deep, although the north side of was not fully exposed (fig. 4). Two fills were distinguished: the primary fill, (113) was a compact deposit of grey silty clay, overlain by a dark brownish grey silty clay, (110).

Approximately 8.5m to the south of the above was a second, more substantial, linear feature, [104], which was 2.45m wide and 1.0m deep (fig. 5). This contained an homogenous mid-grey silty clay fill (106). This deposit was truncated by a recut, [107], which was 2.4m wide and 0.85m deep. The recut contained a 0.65m deep primary fill of brownish grey silty clay (108), which incorporated patches of natural boulder clay, (103). A single sherd of samian ware dated this deposit to the first half of the 2nd century AD (Appendix 2). This fill also contained a single piece of probable cow bone (Appendix 4). The secondary fill, (109), was a dark grey silty clay, more reminiscent of an episode of natural silting. This deposit also contained a single sherd of Romano-British pottery, which could not be closely dated.

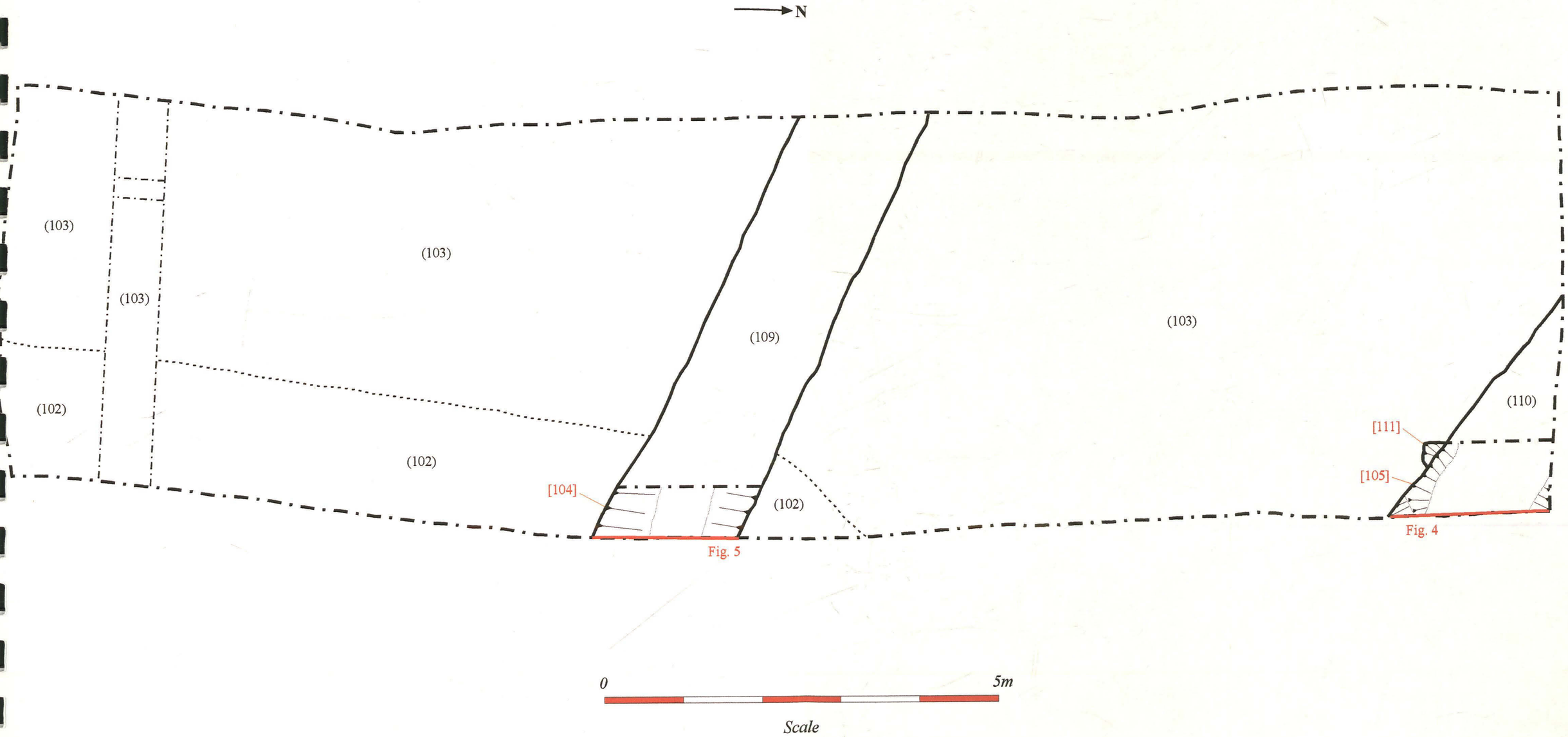


Fig.3: Trench 1 plan (scale 1:50)

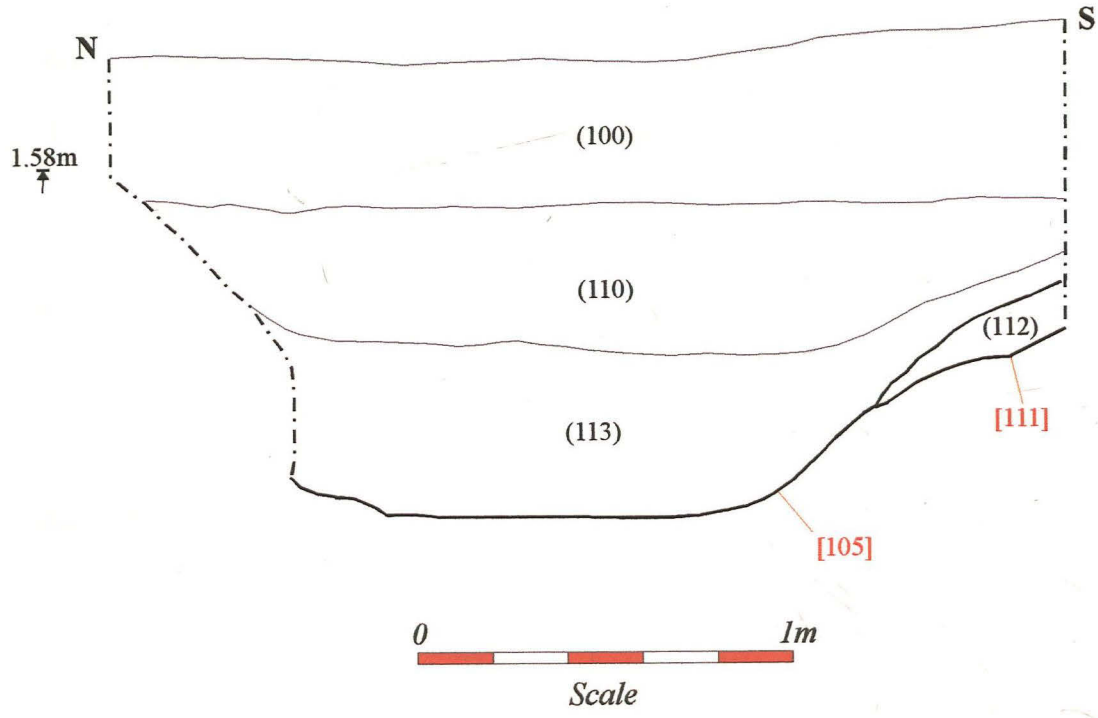


Fig. 4: Ditch [105], west facing section (scale 1:20)

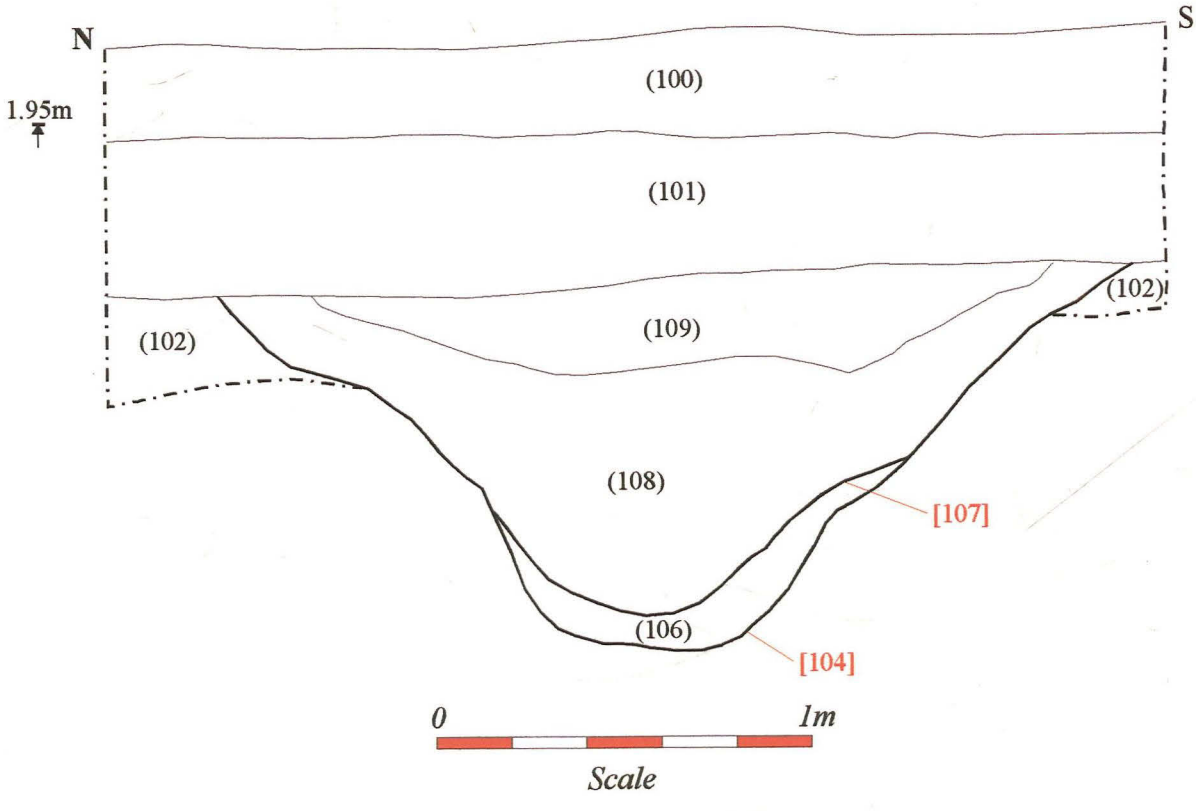


Fig. 5: Ditch [104], west facing section (scale 1:20)

6.2 Trench 2 (figs. 6, 7, 8, 9, 10)

The stratigraphy consisted of a 0.45m deep topsoil layer (200), sealing a light brown silty clay subsoil, (201), up to 0.24m deep. All the features were cut into a natural clay layer, (202).

Two substantial linear features were exposed in this trench, both sealed below subsoil (201). Running east to west across the south side of the trench was a ditch of at least three phases, the earliest phase being represented by cut [207], which was approximately 2.4m wide, and at least 0.5m deep (fig. 7). Within the surviving portion of [207], fills (215) and (216) (which probably represent the same deposit), were both orange-brown silty clay deposits that contained 21 sherds of Romano-British pottery, dating to the second half of the third century AD or later (Appendix 2), and fragments of cattle, horse, pig and dog bone (Appendix 4).

A successor to [207], [206], was steep sided with a flat base, 1.76m wide and 0.9m deep. The lower fill of this feature, (214), was a mixed deposit of light grey and brown clayey silt, no more than 0.12m deep. This was dated 250-300AD by 23 sherds of associated Romano-British pottery. Within this assemblage, greywares predominated, although six sherds of Dales Ware shell tempered pottery, and a single fragment of Central Gaulish samian were also recovered (Appendix 2). (214) also contained 2 fragments of animal bone (Appendix 4), a piece of tap slag and a fragment of smithing hearth bottom (Appendix 5). It was sealed by a brownish grey silty clay, (211), which contained animal bone, oyster shells, 10 fragments of iron smithing slag, a single flake of Central Gaulish samian ware, 40 sherds of Dales ware, and 25 greyware sherds, suggesting a mid to late 3rd century date (Appendix 2). This was in turn sealed by a deposit of brown-grey silty clay (210), which incorporated a higher incidence of charcoal flecks than the underlying deposit, as well as oyster and cockle shells, but no pottery or animal bone.

Deposits (210) and (211) had been cut by a final recut of this feature, [212]. This was a moderately steep sided feature with a concave base, measuring 1.48m wide and 0.66m deep. It contained an homogenous dark grey clay/silt fill, (209), that incorporated significant amounts of charcoal flecking and burnt silt. The fill also incorporated large quantities of domestic and industrial waste, including cattle, horse, and sheep/goat bone, oyster shells, iron slag (smithing hearth bottom, smithing pan and two unidentified pieces), and 152 sherds of pottery. Again, the assemblage was dominated by Dales ware and greyware, although it also included cream ware, Nene Valley colour coated ware, and a sherd of possible Oxford red colour coated ware (Appendix 2). A soil sample yielded further fragments of pottery, animal bone (including frog and newt), cockle shell, slag and hammerscale. Charred plant remains were recovered, including wheat, grasses, docks and blinks (Appendix 4).

A modern drainage feature, [204], was cut through this succession of linear ditches, orientated south-south-west to north-north-east.

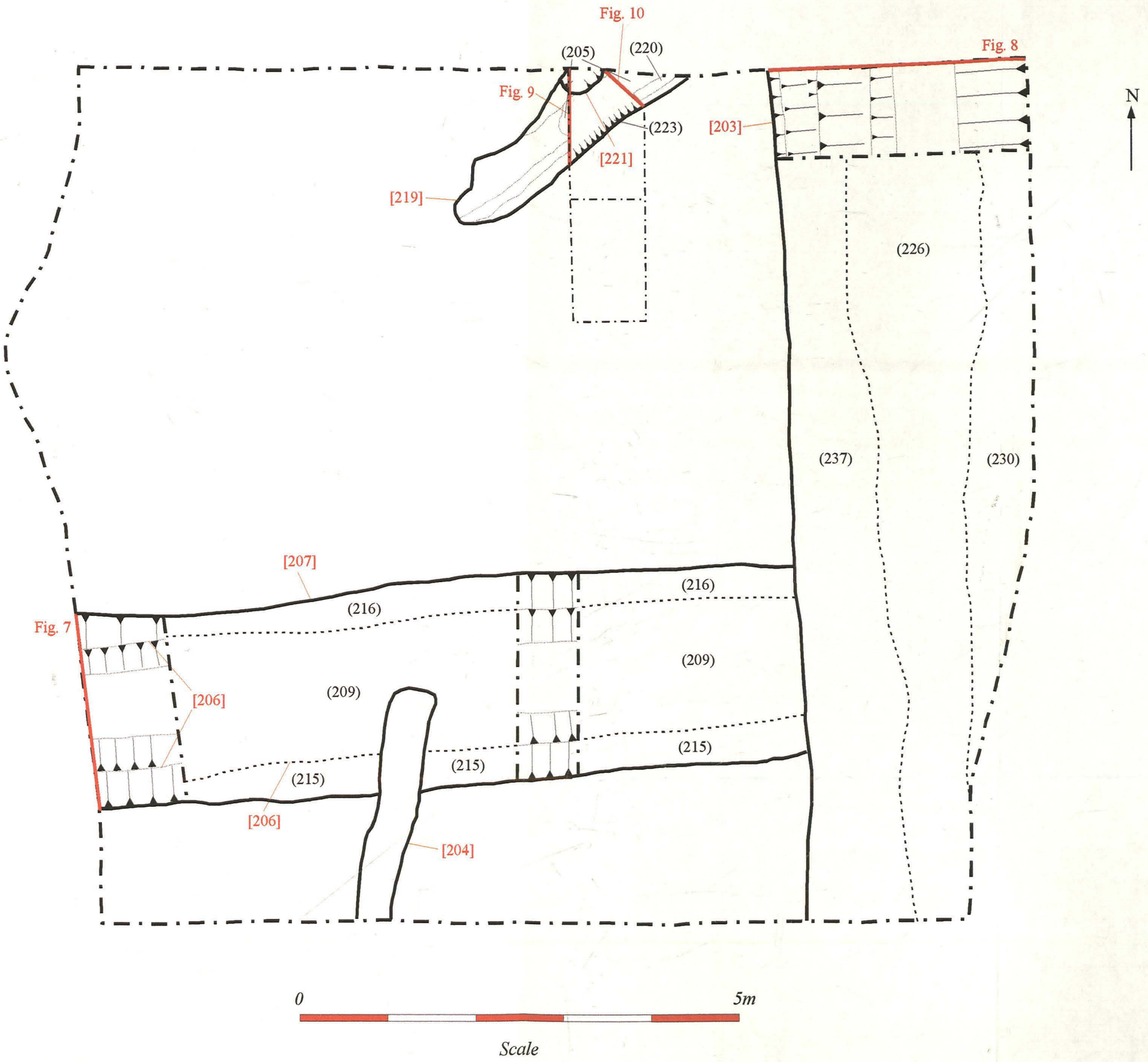


Fig. 6: Trench 2 plan (scale 1:50)

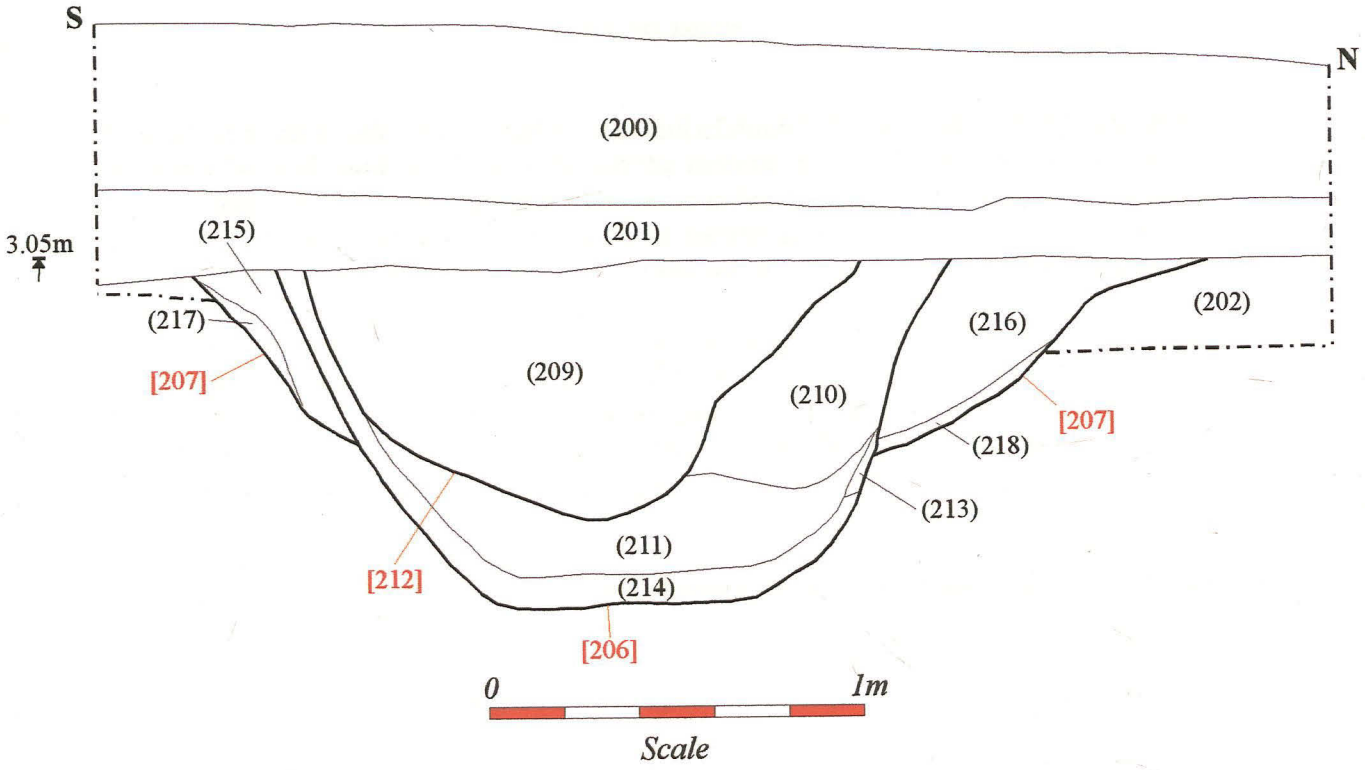


Fig. 7: Ditch [207], east facing section (scale 1:20)

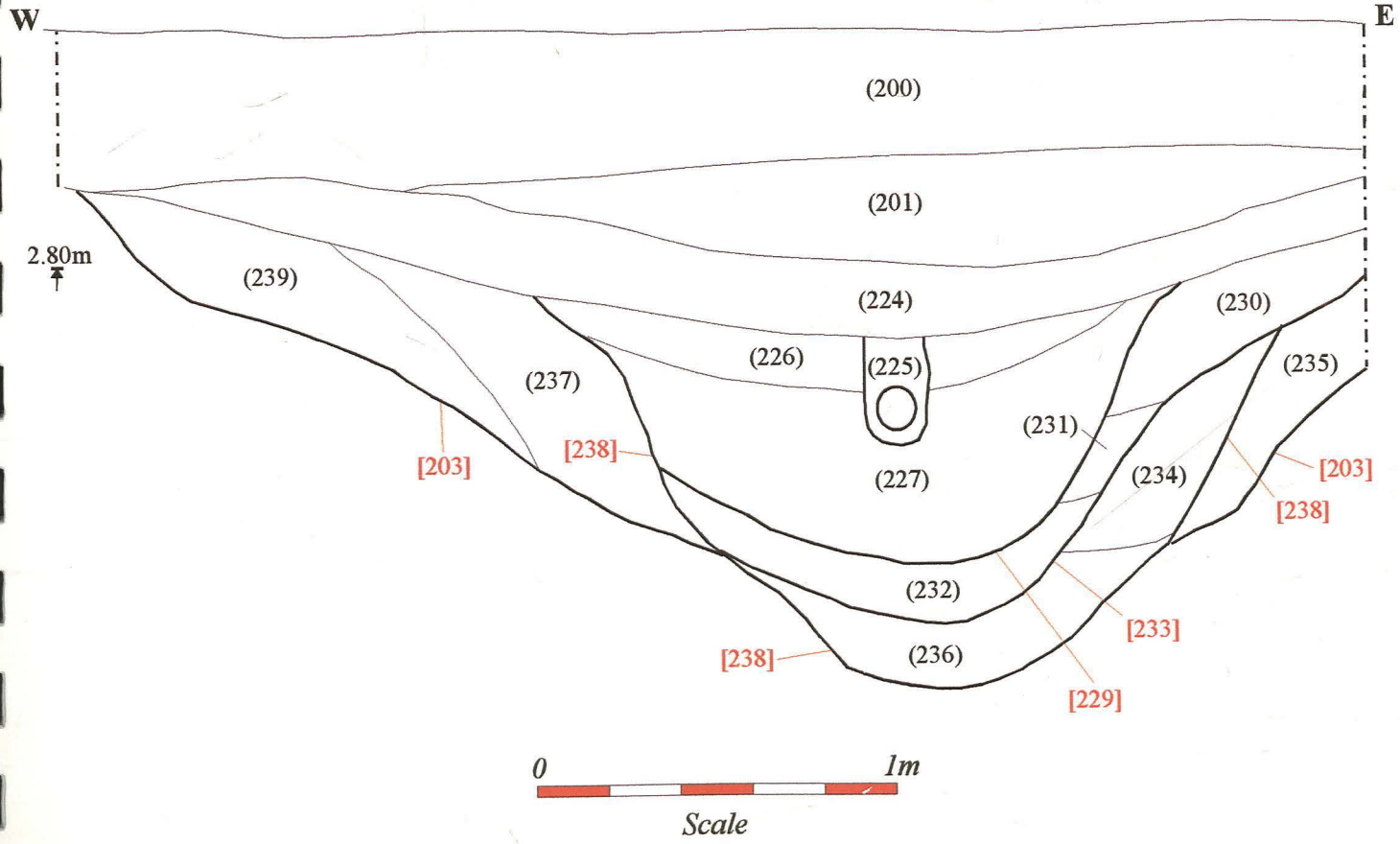


Fig. 8: Ditch [203], south facing section (scale 1:20)

Extending north-south, and truncating east end of ditch [207] was ditch [203], which was at least 3.5m wide and 1m deep, although the eastern edge of the feature was beyond the limit of excavation. This feature had been recut at least three times (see fig. 8). The lower fills of [203] were truncated by subsequent recutting, although three fills of grey and brown clays were recorded, (235), (237), (239), all of which were devoid of artefacts.

The first recut, context [238], described a much steeper feature that was approximately 2.3m wide by 1m deep, and contained two fills: at the base was (236), a mixed deposit of brown and grey clay, which incorporated fragments of bone from cattle, sheep/goat, and pig (Appendix 3). This was beneath a grey-brown silty clay, (234). The upper fills of this ditch had been truncated by a subsequent phase of subsequent recutting.

Cut through deposits (234), (236) and (237) was recut, [233]. Its associated primary fill, (232), was a dark grey silty clay, containing fragments of cattle, sheep/goat, pig and horse bone, with cattle predominating (Appendix 3). Four Toynton/Bolingbroke ware sherds and two fragments of brick suggest a 15th/16th century deposition date for this context. It was sealed by a thin band of grey silty clay (231), and an upper fill of mid brown clay (230), both of which were archaeologically sterile.

The final manifestation of the ditch, [229] was again steep sided, measuring 1.75m wide and 0.6m deep. The main fill, (227) was a grey brown silty clay which produced no dating evidence, although the upper fill, (226), produced 11 sherds of pottery, mainly Toynton/Bolingbroke Ware, dating to the 13th to 16th century (Appendix 2). Several pieces of animal bone, including three fragments of dog (Appendix 3), and two pieces of undiagnostic iron slag (Appendix 5) were also recovered from this context. Both (226) and (227) were cut longitudinally by a ceramic land drain, which in turn was sealed by an undated deposit of dark grey/brown clay silt, (224); interpreted as redeposited topsoil.

Extending south-westwards from the central north section face was a less substantial, slightly irregular, linear feature, [219]. This contained three associated fills, (205), (220), and (223), all of which were devoid of artefacts. The upper fill, (205) was a dark grey/black silty clay from which a sample was taken for environmental assessment. This proved a limited exercise, yielding little more than a single snail shell and a grain of wheat (Appendix 4). The irregular form of this feature and the deposits contained within it, coupled with the general absence of finds suggests that this may have been a natural feature, possibly caused by tree roots.

[219] appeared to seal a possible posthole, [221], although both the relationship and interpretation is uncertain.

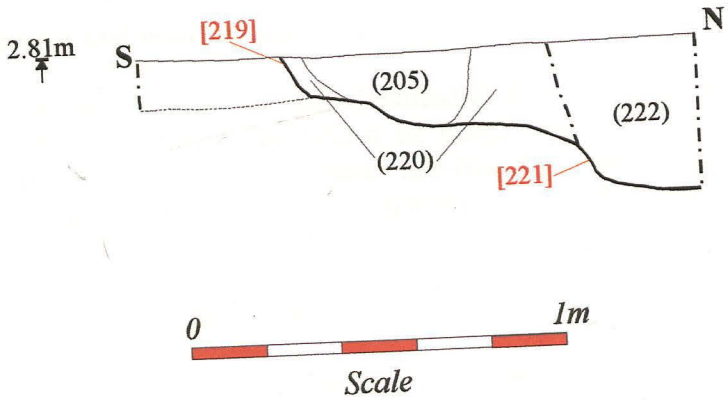


Fig. 9: East facing section through possible natural feature [219], and possible posthole [221] (Scale 1:20)

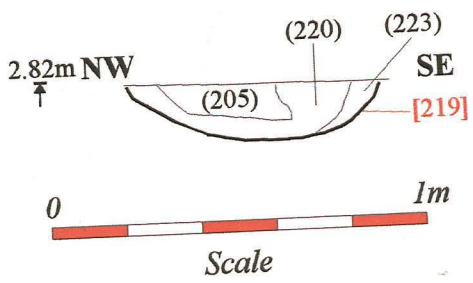


Fig. 10: South-west facing section through possible natural feature [219] (Scale 1:20)

7.0 Discussion and conclusions

Three distinct phases of activity were identified as a result of this excavation, phases I and II being Romano-British and phase III being medieval. It is known also from evaluation of the area that the site contains late Iron Age remains, and it is assumed that there was a normal continuity of occupation from later Iron Age to Romano-British.

Phase I: early – mid 2nd century AD

This phase is represented by a single feature, [107], the recut of ditch [104]. The dating of the feature is somewhat tentative, as it relies on a single sherd of Central Gaulish samian. This pertains to the earliest activity represented during the current phase of fieldwork, although the preceeding evaluation (Clay, 2001) detected Middle-Late Iron Age activity to the south of Trench 1. The function of this feature cannot be ascertained, although it probably represents a boundary/drainage feature.

Also in Trench 1, was linear feature [105], which was undated. However, it was parallel with [104]/[107] and so could have been contemporary.

Further material of Phase I date was recovered from residual contexts, comprising three further sherds of Central Gaulish samian.

Phase II: mid – late 3rd century AD

The bulk of Romano-British artefactual material derives from this phase, and is exclusively from the linear feature represented by ditch [207] and recuts [206] and [212]. Although the recutting of the ditch on two occasions indicates activity over an extended period, the resolution of the pottery dates was only sufficient to place all three phases of the ditch within the second half of the 3rd century AD. However, the assemblage shows little abrasion and consists of several large sherds, suggesting a fairly secure date with little residuality. It is probable that the ditch relates to ditch [503] from the previous phase of evaluation, an east – west aligned feature, which produced 22 sherds of 2nd century or later pottery (Clay, 2001).

The range of artefactual material from this ditch gives a good insight into the activities that were taking place in the vicinity of the site. The pottery assemblage is dominated by Dales ware cooking vessels and greyware kitchen/table vessels, and a single well-worn piece of mortaria. The limited quantities of finewares (totaling only 10 of 270 sherds) further goes to suggest that there was a small rural settlement in the immediate vicinity (Appendix 2). This hypothesis is backed up by environmental evidence, where the animal bone is dominated by domestic species, mainly cattle bones, followed by sheep/goat, and two fragments each of horse, pig and dog. There is some evidence of butchery on these bones, while the evidence of bone working is very limited (Appendix 4). Charred wheat and chaff was recovered from the soil sample, from context (209).

Industrial activity is indicated by iron working residues from (209), (211), and (214). The majority of this material appears to be the result of smithing, the secondary phase of ironworking, involving the further refining and processing of smelted iron blooms into finished metal objects. The material recovered includes fragments of smithing hearth bottom, smithing pan, and hammerscale. Context (214) produced a fragment of tap slag, exclusively associated with the initial smelting of iron ores.

The quantity of this material is small for an iron working site, although it does strongly suggest that such activity was taking place very close to the current site. Two sections were excavated through [207], and it was clear that there was a much greater concentration, not only of iron slag, but also of pottery, animal bone, shell, and charcoal rich deposits in the westernmost of the two sections. This would intimate that there may have been a small scale iron working industry to the west of the excavation that was active during this phase.

Phase III: 15th – 16th century

Again, this phase is represented by a single feature, the north – south ditch [203], and recuts [238], [233], and [229]. Dating evidence was derived from two contexts, (226) and (232), which placed both deposits in the 15th – 16th century (Appendix 3). The animal bone was more widely distributed, being derived from (226), (227), (232) and (236). The assemblage was dominated by cattle, sheep/goat, and pig (Appendix 4). Two small pieces of slag were recovered from (226), although whether these derived from this phase or are residual from Phase II is uncertain.

Little can be said about this feature, other than to suggest that it was a boundary/drainage feature, related to the later medieval settlement of Mumby, which was well established by this time. How far south the ditch continues is uncertain, but to the north of the site, it almost certainly relates to ditch [105], exposed in Trench 1 of the previous phase of evaluation. Although not excavated at this time due to flooding, the feature was of a similar width and orientation as [203], and also had a ceramic land drain running through its centre (Clay, 2001).

Arguably the most significant phase of activity was Phase II, dated to the later 3rd century AD. At this time, the local environment would have been characterized by low lying marshland, susceptible to seasonal flooding by marine transgressions, which would have made it unsuitable for permanent settlement. However, the current site lies at the southern edge of a glacial moraine of sand and gravel; upon which the modern village of Mumby is situated. This would have provided an outcrop of dry land upon which it may have been possible to establish a permanent settlement. Any such activity is likely to have extended northwards, to the higher and better drained areas of the sand and gravel bank, although the possibility to investigate this theory is precluded by the more recent development of the village. Romano-British activity certainly continues southwards, as

evidenced by the presence of a linear feature excavated in Trench 6 of the previous evaluation, that contained 3rd century pottery (Clay, 2001), located approximately 40m south of Trench 2 of the current phase.

The site appears to be well situated to exploit the local environment. Despite a tendency for flooding (which can be controlled with efficient artificial drainage channels), the local groundwater gleys are fertile soils, well suited to the growth of arable crops and grassland for grazing animals (Ellis, 2001), and evidence of both practices has been recovered from the Phase II deposits. The site is also close to the coast, and the presence of numerous oyster and cockle shells indicate the exploitation of this resource. Furthermore, the site may well be located to exploit a source of bog iron, an iron ore, which accumulates in poorly drained locations (Bayley *et.al.*, 2001).

In the wider context, the site is in an area of known Romano-British activity, largely focused on the salt industry, which concentrates to the south-east of Mumby, between Hogsthorpe and Ingoldmells. The recent survey of the Lincolnshire Marsh has detected a number of Romano-British finds scatters in the vicinity of Mumby, interpreted as possible evidence of small rural farmsteads (Van de Noort *et.al.*, 2001); perhaps practicing agriculture and the seasonal involvement in the salt making industry.

The pottery assemblage, and the animal bone suggests that a small rural farmstead had existed at, or near, the site. There is, however, no evidence of salt making in the immediate vicinity. The only possible industrial activity is the iron working represented by a small slag assemblage. Such assemblages are widespread on small Romano-British rural settlements, and are believed to be representative of iron working on a domestic, and perhaps seasonal, basis, for the expedient manufacture of tools to be used within the immediate community, and not for export to a wider market (Dark & Dark, 1997).

In terms of communications with the wider province in the Roman period, Mumby, and its neighbouring settlements are more likely to have been eastward looking, and tied into a coastal trade network. The closest known Roman road runs from Burgh-le-Marsh, north of Horncastle and through to Lincoln (Whitwell, 1992). Burgh-le-Marsh is over six miles south of Mumby, a long and possibly hazardous journey over open saltmarsh, which may well have been flooded for part of every year. The presence of oyster and cockle shells at Mumby shows that there was direct contact with the coast, and this is further indicated by the pottery assemblage. The dominating fabric was the shell gritted Dales ware, believed to originate around the Humber estuary. This industry appears to have been making use of coastal transportation to sell its wares, as the distribution of Dales Ware further south in Norfolk is exclusively coastal, and Mumby is likely to be part of the same network. It may also be suggested that the same coastal trade system offered an outlet for exported goods, most likely surplus from agricultural production, and salt from the active Romano-British salterns in the vicinity of Mumby.

8.0 Effectiveness of methodology

Two areas were investigated during this phase of fieldwork, both of which yielded archaeologically significant deposits. It was possible to equate some of the features detected in the previous evaluation, with those recorded in the current excavation. However, a number of opportunities were possibly missed.

The evaluation in 2001 detected an east - west linear feature containing Middle to Late Iron Age pottery. This was to the south of the excavated area, and hence it was not possible to establish a clearer understanding of this significant phase of pre-Roman settlement activity.

The distribution of finds in Trench 2 showed a distinct bias towards the western side of the trench, strongly suggesting that there exists a focus of activity for the later Roman period. An extension of the excavation to the west, and perhaps also to the north, would have helped to resolve many of the questions raised concerning the exact nature of the domestic and industrial activities, and to gain an understanding of the role that this settlement played within the wider landscape context.

9.0 Acknowledgements

Pre-Construct Archaeology (Lincoln) would like to thank Hugh Bourn Developments Ltd. for this commission. Thanks also go to the site team, Dave Bower, Wayne Livesey, Dave Marshall and Doug Young.

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11.0 Site archive

The documentary and physical archive for the site is currently in the possession of Pre-Construct Archaeology. This will be deposited at Lincoln City and County Museum within six months. Access to the archive may be gained by quoting the global accession number 2002.230.

APPENDIX 1: Colour Plates

Fig. 1: General view of the site, looking south from the northern edge of the development area. Trench 2 is in the foreground.

Fig. 2: Pre-excavation view of Trench 1, looking, north. Ditch [104] can be seen running across the middle of the picture.

Fig. 3: Pre-excavation view of Trench 2, looking west, clearly showing Romano-British ditch [207], truncated by medieval ditch [203].

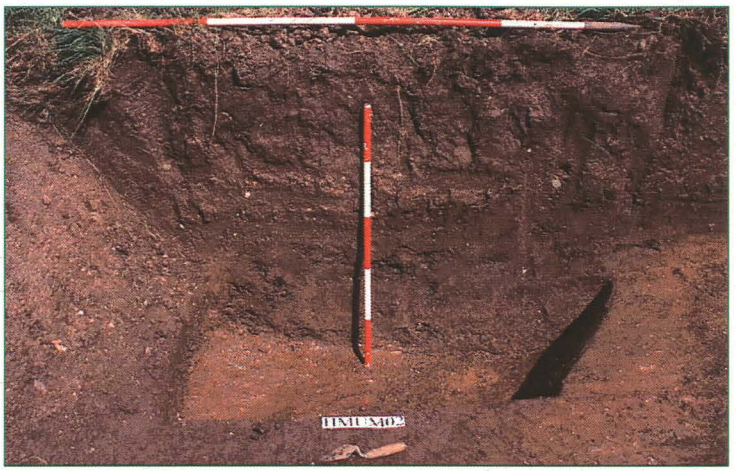

Fig. 4: Undated ditch cut [105], looking east-south-east.

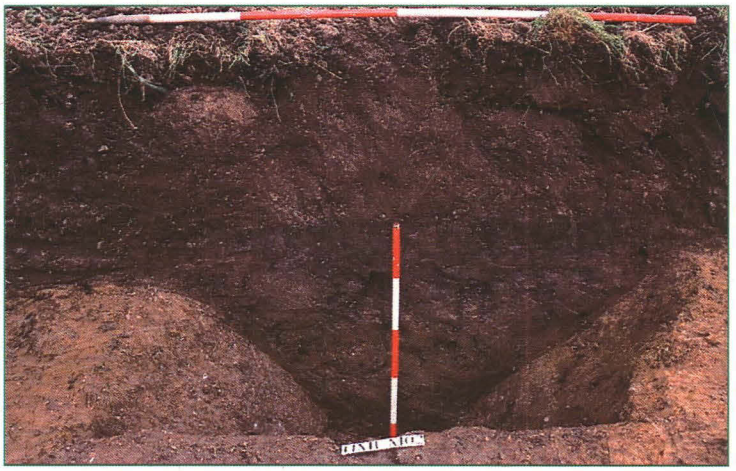

Fig. 5: Romano-British ditch cut [104] and recut [107], looking east-south-east.

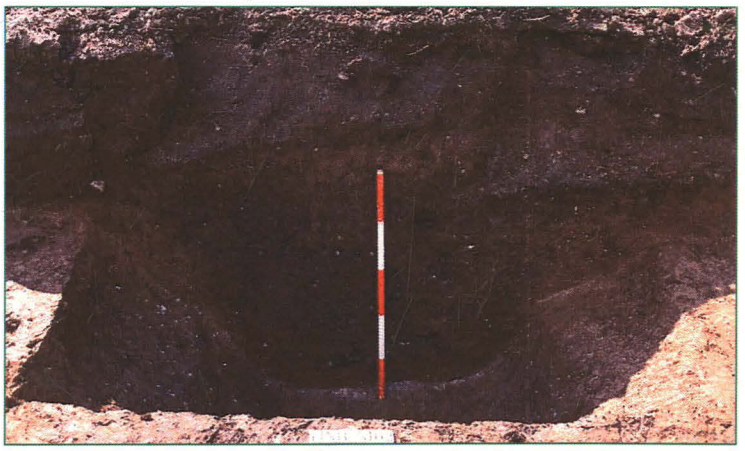

Fig. 6: Romano-British ditch [207], and recuts [206] and [212], looking east.

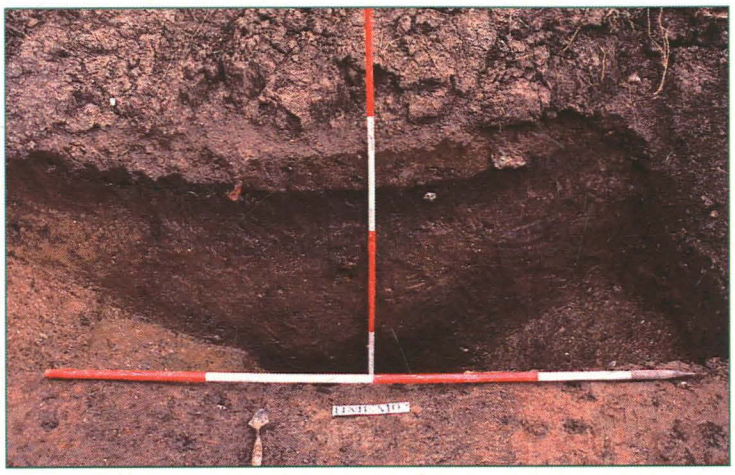

Fig. 7: Medieval ditch cut [203], and recuts [238], [233], [229], looking north

Fig. 8: Slot excavated through possible natural feature [219], looking north-west

APPENDIX 2: Romano-British pottery report

REPORT 109 ON POTTERY FROM LAND OFF HOGSTHORPE ROAD, MUMBY, LINCOLNSHIRE, HMUM02

for PRE-CONSTRUCT ARCHAEOLOGY

by Margaret J. Darling, M.Phil., F.S.A., M.I.F.A.

13 July 2002

QUANTITY AND CONDITION

The pottery totals 270 sherds, weighing 5.352kg from 10 contexts and unstratified. Much of the pottery is in fairly fresh condition, with little abrasion; the average sherd weight is 20g, rising to 28g for the ditch cut 206. No problems are anticipated for long term storage. The pottery has been archived using count and weight as measures according to the guidelines laid down for the minimum archive by *The Study Group for Roman Pottery*. A copy of the archive database is attached (and can be supplied on disk), and will be curated for future study.

QUANTITIES AND DATES

The quantities and dating by context is shown in Table 1

Table 1

Cut	Details	Cxt	Sherds	Weight	Date	Comments
-	Unstrat., Trench 2	US-Tr2	5	40	ML3	
107	Ditch recut	108	1	5	EM2	Date x single samian sherd
107	Ditch secondary fil	109	1	73	ROM	No close date
212	Ditch recut	209	120	1993	ML3	Some earlier sherds; joins 216
212	Ditch recut	209A	32	432	ML3-4;M4 POSS	Jar rim similar to one in 211A;M4 date x poss OXRC sherd
206	Ditch secondary recut	211	56	1546	ML3	Some 2c sherds; 3 joins to 214
206	Ditch secondary recut	211A	11	253	ML3	Some 2c; JDW rim similar one in 209A
206	Ditch primary recut	214	23	704	ML3	3 joins to 211
207	Ditch fill	215	3	44	ROM	No close date;ML2+
207	Ditch fill	215-216	8	119	M3+	
207	Ditch fill	216	10	143	ML3	Joins 209
	Total		270	5352		

Apart from two sherds, all the pottery came from Trench 2, the largest quantity being from the recutting of the ditch 212. The pottery from the ditch cut 206 is the least fragmented, with an average sherd weight of nearly 28g. Notably there are three separate vessels with joining sherds in both primary and secondary recuts (contexts 211 and 214). There is also a joining sherd link between contexts 209 and 216 in this ditch.

OVERVIEW OF FABRICS AND VESSEL FORMS

The fabrics are detailed in table 2.

Table 2 Fabrics

Fabric	Code	Sherds	%	Weight	%
Colour-coated	CC	1	0.37	2	0.04
Cream	CR	4	1.48	35	0.65
Dales ware shell-gritted	DWSH	151	55.93	2747	51.33
Fired clay ?industrial	FCLAY?	1	0.37	5	0.09
Fired clay	FCLAY	3	1.11	130	2.43
Grey fine	GFIN	1	0.37	4	0.07
Grey	GREY	93	34.44	2309	43.14
Mortaria Mancetter-Hartshill	MOMH?	1	0.37	13	0.24
Nene Valley colour-coated	NVCC	2	0.74	4	0.07
Oxfordshire red colour-coated	OXRC?	1	0.37	3	0.06
Oxidized fine	OXF	1	0.37	11	0.21
Oxidized	OX	1	0.37	2	0.04
Samian Central Gaul	SAMCG	4	1.48	12	0.22
Shell-gritted	SHEL	2	0.74	37	0.69
Tile	TILE	3	1.11	33	0.62
Vesicular	VESIC	1	0.37	5	0.09
Total		270	100	5352	100

The relatively fresh nature of the pottery from the ditch is emphasized by the average sherd weight of over 18g for the dales ware shell-gritted fabric (DWSH), which is high for a fabric which normally fragments fairly easily. The second commonest fabric is the quartz-gritted grey wares (GREY) with a higher average sherd weight of nearly 25g, due largely to the presence of fairly substantial rims from wide-mouthed bowls and a large part of the dish No 13. There is, unfortunately, little dating evidence for trench 1, just a single samian dish rim and a probable lid fragment in grey ware.

Samian is represented by only four sherds of 2nd century Central Gaulish ware, small and flaked, and other fine wares are similarly sparse. One colour-coated body sherd does not appear to be from the Nene Valley, and may be from a more local, Lincolnshire, source, having a fabric not dissimilar to some slipped wares from Lincoln which may be of mid-late 2nd century date. The two sherds from Nene Valley colour-coated beakers are both in the earlier cream fabric, likely to date more to the first half of the 3rd century. Only one sherd from a mortarium occurred, a worn body sherd, the fabric suggesting a probable source at the Mancetter-Hartshill potteries in Warwickshire, a major supplier to Lincolnshire in the later 2nd to 4th centuries. Apart from the samian, there are other sherds for which a 2nd century date would be appropriate. The cream body sherds (CR) are all likely to come from flagons, less common in the 3rd century (from contexts 209 and 215), and the grey wares include an example of a carinated beaker or bowl (type code B334) well known in Lincolnshire in the 2nd century (from context 209; as Darling 1984, fig 16, no 94). The vessel No 7 superficially resembles this type of carinated beaker, but the flaring rim suggests that it is more likely to be from a jar form with a cordon at the base of the neck. A fragmentary rim in a shell-tempered fabric from context 209 appears to be a type derived from late Iron Age bowls, which is likely to have remained current in the late 1st and well into the 2nd century. The same context produced a vesicular body sherd, which could be of similar date.

The bulk of the pottery fits into the second half of the 3rd century. Dales ware jars probably have a long life, extending into the 4th century, while some of the wide-mouthed bowls may continue into the early 4th century. Dales ware jars, as No 15, occur in all contexts from the ditch. The grey wares are mostly in a consistent fabric, indicative of a local source. There is, however, a problem sherd, a very abraded oxidized body sherd (from 209A) with a fairly fine micaceous fabric, and traces of a red slip. This is either Oxfordshire red colour-coated ware, or an unrecognised oxidized fabric. If the former, a 4th century date is highly probable, as the main incidence of Oxfordshire red colour-coated ware in Lincolnshire, marking an expansion of the industry's market area, appears to lie in the later 4th century. The fabric is slightly atypical, but would appear to lie within the range known from the Oxford kilns. There is a further fine oxidized vessel, the bowl No. 1, but while the fabric is similarly micaceous, there is no trace of slip and the texture differs from Oxford red colour-coated ware.

This is particularly relevant to the overall dataspan of the assemblage, since there are no other sherds for which a 4th century date is implicit. The flanged bowl with a low bead, No 11, is a 3rd century type, and the wide-mouthed bowls, Nos 3-6, are all consistent with a mid- to late-3rd century date (as at Rookery Lane Lincoln, Webster 1960). The segmental flanged bowl, No 1, could occur in the later 2nd and 3rd century. The straight-sided dishes, Nos 12-13, are common in 3rd century deposits, often stratified with dales ware jars. Fresh sherds of a further grey bowl came from 209 originally a flat-rimmed type but with the flange sheared off; again a form well known in the 3rd century. There is little evidence for late Roman pottery in the immediate area, but it is relevant that 4th century deposits from Burgh le Marsh contain products of the late Swanpool kilns in Lincoln (Webster & Booth, 1947; Darling 1977). The absence of such vessels from this group from Mumby suggests that the date range ends before the start of the 4th century. This is, however, a small group from a single ditch, and may not be representative of activity in the area. The possibility of 4th century occupation cannot be proven on a single sherd.

The assemblage is too small to draw many conclusions about the occupation which produced it, but the range of fabrics and vessel types would fit a rural farmstead, the main cooking vessel being the dales ware jar, all examples having burning and sooting indicative of cooking. There is only a single fragment of a mortarium and sparse fine wares. The absence of any sherds of amphorae is consistent with the main activity centring on the 3rd century. The fresh nature of the pottery from the ditch suggests an occupation site relatively nearby.

The paucity of jars in grey wares is unusual, and analysis of the grey wares (excluding body sherds unclassified for form) shows open forms, bowls and dishes, constituting 78-88% of the fabric. Only a maximum of 11 sherds might be from jars, of which five are more probably from wide-mouthed bowls. This unusual aspect has to be viewed in relation to the otherwise reasonably balanced functional nature of the assemblage, with open forms for serving alongside the shell-gritted dales ware jars used for cooking. Here the location of the site is crucial, since dales ware jars originated around the Humber estuary, and at least part of their distribution outside the area depended upon coastal trading. Analysis of the occurrence of dales ware in Norfolk, based on a complete survey of the major collection of pottery in the Norwich Castle Museum (by Tony Gregory and M. Darling), found that the occurrence of shell-gritted dales ware in the county was entirely confined to sites on, or adjacent to the coast. This would suggest that the inhabitants of Mumby had ready access to pottery being traded along the coast; in turn, this prompts questions as to what other commodies were being traded.

Only three fragments of probable tile occurred, none of which can be identified for type of tile. Four fragments of fired clay included one with impressions on one surface, perhaps burnt daub,

while another appears to have the remains of molten glass solidified on a skin of clay. Whether this is indicative of industry or accidental is not clear.

The date-range for the assemblage is probably mid 2nd century through the 3rd century, with the possibility of an overlap into the 4th century. Most of the pottery dates to the later 3rd century. The range is similar to that of the pottery from the preceding evaluation (Darling 2001) except in lacking any positive evidence for Iron Age activity. The possibility remains of some mid to late 4th century activity on the basis of a single very abraded sherd of Oxfordshire red colour-coated ware.

FABRIC DEFINITION

Publication of *The National Roman Fabric Reference Collection*, abbreviated NRFRC (Tomber and Dore 1998), obviate the need to describe the major imported and widely traded Romano-British wares in detail.

CC Colour-coated ware, unknown source. Cream-white fabric, sparse fine quartz and ill-sorted iron-rich inclusions, light orange-red colour-coat. Single body sherd from a closed form, perhaps a beaker (from cxt 209).

CR Cream, miscellaneous cream wares. Sherds attributed to a fabric group rather than a discrete fabric, from closed forms, probably flagons.

DWSH Shell-gritted dales ware jars, hand-made and wheel-finished from sources in north Lincolnshire around the Humber area. **NRFRC DAL SH**

GFIN Grey fine. This coding is used for reduced fabrics lying between the common quartz-gritted GREY used for most jars and bowls, and the very fine fabrics used for London-type ware and Parisian ware.

GREY All sherds appeared to be in a relatively similar fabric, with moderate to common quartz. Varying colours of fabric and cortex are due largely to firing conditions, and not necessarily indicative of different sources.

MOMH Mortaria from the Mancetter-Hartshill, Warwickshire kilns. **NRFRC: MAH WH**

NVCC Nene Valley colour-coat **NRFRC = LNVCC**

OXF Oxidized fine texture fabrics, not a discrete fabric. A single vessel, flanged segmental bowl No 1.

OX Oxidized, miscellaneous oxidized wares. This coding comprises all miscellaneous oxidized sherds, usually in varying red-brown shades and degrees of grittiness, for which no significant fabric groupings are evident. Single body sherd, unstratified..

OXRC Oxfordshire red colour-coated. Red coated tablewares produced in the Oxfordshire kilns, usually 4th century in this area. Single body sherd, very abraded, with only traces of red colour-coating, from cxt 209A. **NRFRC: OXF RS**.

SAMCG Samian Central Gaul, from Lezoux. **NRFRC : LEZ SA**

SHEL Shell-gritted, miscellaneous shell-gritted ware, not certainly of local origin. Single sherd.

TILE Tile fragments, usually building material.

VESIC Vesicular, vesicular sherds, probably due to loss of shell-gritting. Single body sherd, dark grey fabric, probably wheel-made.

CATALOGUE

The sequence is: illustration number, fabric and form codes, details including the percentage of rim, context, and sherd link, original drawing number (as on the drawn vessels in the physical and database archive.

Ill.No	Fabric	Form	Details	Cxt	Link	DNo
1	OXF	BSEG	Light red-brown fabric, fairly fine with sparse quartz, black iron and red iron-rich inclusions, and some mica. 10%	209	-	02
2	GREY	JCUR	Dark grey fabric, common quartz, some possible grog inclusions.16%	214	-	15
3	GREY	BWM	Curved rim, thin wall, abraded. 10%	209	-	04
4	GREY	BWM	Everted rim, narrow neck.33%	211	214	07
5	GREY	BWM	Squared undercut rim. Abraded. 10%	211	-	08
6	GREY	BWM	Curved undercut rim, dark grey fabric and surfaces, with light brown cortex; abraded. 12%	214	-	14
7	GREY	JNK?	Light grey fabric, darker surfaces; flattened cordon;10%	211	-	12
8	GREY	B	Fabric as No 7. Small bowl, thin wall. 15%	209	-	03
9	GREY	BFL	Fabric as No 7. 8%	214	-	13
10	GREY	BDFL	Dark grey fabric, light cortex; 10%	211	-	11
11	GREY	BFBL	Flanged bowl, low bead; 27%	211	-	06
12	GREY	DEXR	Dish, chamfered base; 5%	211A	-	05
13	GREY	DEXR	Dish; 55%	211	214	09
14	GREY	DPR	Dark grey fabric, light cortex; 20%	211	-	10
15	DWSH	JDW	Jar, sooted; 75%	209	-	01

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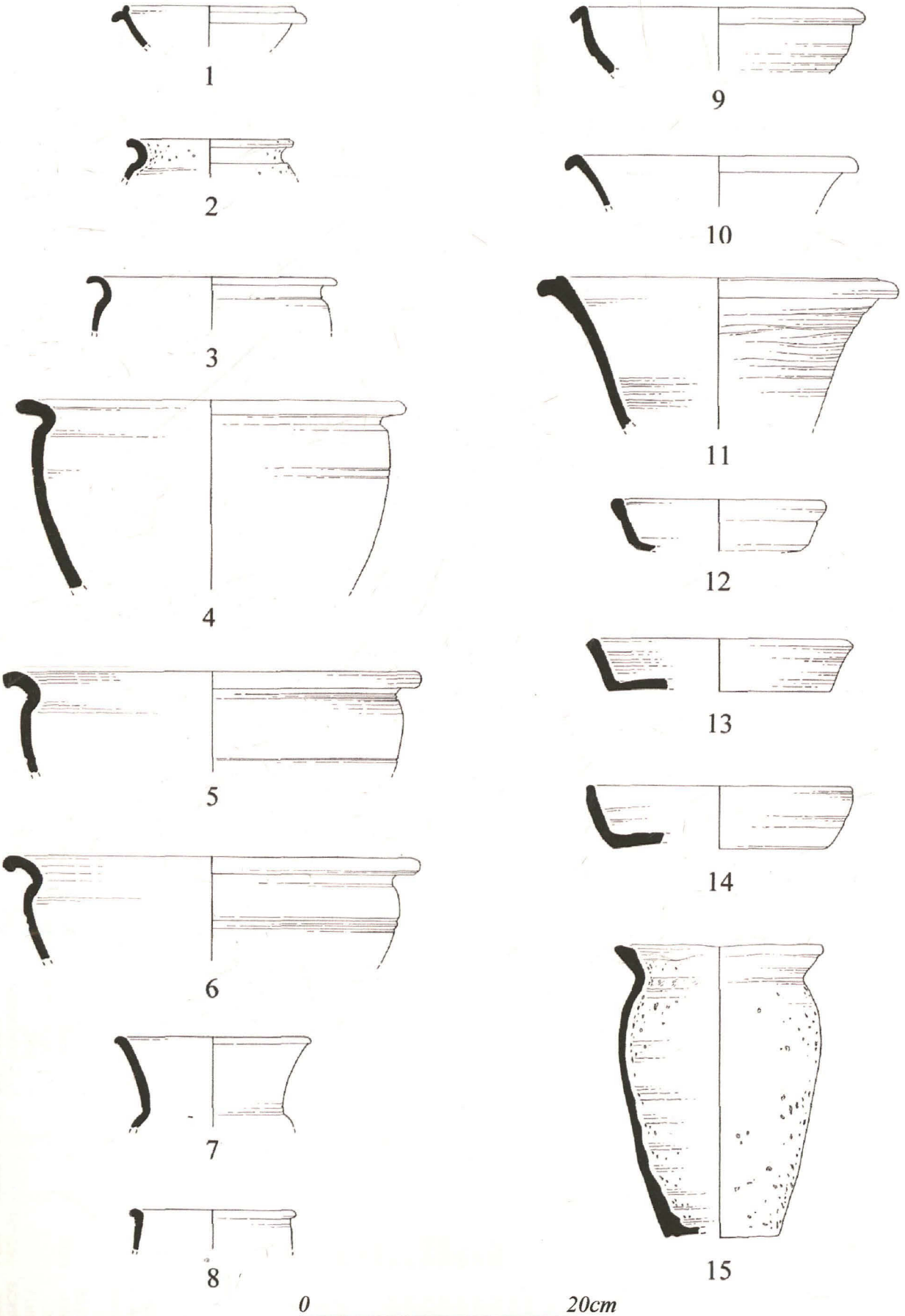

Scale 1:4

Cxt	Fabric	Form	Manuf+	V	D?	Dno	Details	Link	Shs	Wt
108	SAMCG	18/31-31	-	-	-	-	RIM FRAG	-	1	5
108	ZDATE	-	-	-	-	-	EM2	-	-	-
108	ZZZ	-	-	-	-	-	DATE X SINGLE SAMIAN SHERD	-	-	-
109	GREY	LID?	-	-	-	-	BASE/KNOB STRING;DKGRY;THICK	-	1	73
109	ZDATE	-	-	-	-	-	ROM	-	-	-
109	ZZZ	-	-	-	-	-	NO CLOSE DATE	-	-	-
209A	SAMCG	-	-	-	-	-	FLAKE ONLY	-	1	1
209A	OXRC?	-	-	-	-	-	BS VABR;ONLY TRACE OF SLIP	-	1	3
209A	GREY	-	-	-	-	-	BSS ALL SAME FAB	-	3	22
209A	DWSH	JDW	-	1?	-	-	RIMS;2 JOIN;SOOTED	-	4	77
209A	DWSH	J	-	-	-	-	BSS;SOOTED	-	22	241
209A	FCLAY	-	-	-	-	-	FRAG;1 FLAT SURF;IMPRESSIONS ?DAUB	-	1	88
209A	ZDATE	-	-	-	-	-	ML3-4;M4 POSS	-	-	-
209A	ZZZ	-	-	-	-	-	JAR RIM SIMILAR IN 211A	-	-	-
209A	ZZZ	-	-	-	-	-	M4 DATE X POSS OXRC BS	-	-	-
209	DWSH	JDW	-	2?	D	01	RIMS;BASE;COMP PROF POSS;SOOTED	-	49	1031
209	DWSH	JDW	-	2?	-	-	RIM;BSS;THICKER BASE;SOOTED	-	23	451
209	CR	F?	-	1	-	-	BSS;JOINING;ABR;F.FINE FAB;?FLAGON	-	2	17
209	NVCC	BKFOS?	-	-	-	-	BS SHLDR;CR FAB	-	1	2
209	NVCC	BK	-	-	-	-	BS CR FAB;ABR	-	1	2
209	CC	CLSD	-	-	-	-	BS WHITE/CR FAB;NOT DEF NVCC;NR SCARLTON?	-	1	2
209	OXF	BSEG	-	-	D	02	RIM/PT WALL;LTRB FB;RB INCLS;F.MICAC	-	1	11
209	GREY	B	-	-	D	03	RIM/PT WALL;THIN WALL SM.VESS;DIAM12	-	1	12
209	GREY	B	-	-	-	-	RIM FRAG;SIMILAR TYPE;DIAM14	-	1	3
209	GREY	BWM	-	-	D	04	RIM/PT WALL;CURVED RIM;DIAM19	-	1	22
209	GREY	BWM	-	-	-	-	RIM ONLY;DIAM36?;CURVED;U'CUT;JOINS	216	1	54
209	GREY	BFL	-	1	D?	-	RIM/WALL;SHEARED OFF FLANGE	-	5	149
209	GREY	J?	-	1	-	-	BSS J;GROOVED;?SHLDR;DKGRY FB;LTER SURFS	-	2	6
209	GREY	BD?	-	-	-	-	BASE FRAG	-	1	24
209	GREY	-	-	-	-	-	BASE FRAG;SMOOTH UNDER	-	1	18
209	GREY	-	-	-	-	-	BSS	-	20	90
209	GREY	-	-	-	-	-	BS;DKGRY FAB/SURFS;LTRB CORT;ABR	-	1	7
209	GFIN	-	-	-	-	-	BS F.FINE;THIN WALL	-	1	4
209	GREY	BD?	-	-	-	-	BASE FRAG;DKGRY;LTRB CORT;DEEP CHAMFER?	-	1	16
209	SHEL	BNAT?	-	1?	-	-	RIM FRAG;INTURNED;DIAM26?;DKGRY;MED SHELL	-	2	37
209	VESIC	-	-	-	-	-	BS DKGRY;LOST SHELL;?WM;TRACE GROOVE	-	1	5
209	TILE?	-	-	-	-	-	FRAGS;VABR	-	2	25
209	FCLAY?	-	-	-	-	-	FRAG SOLIDIFIED MOLTEN GLASS?	-	1	5
209	ZDATE	-	-	-	-	-	ML3	-	-	-
209	ZZZ	-	-	-	-	-	SOME EARLIER SHS	-	-	-
211A	DWSH	JDW	-	1	-	-	RIMS/PT WALL;SOOTED;SIMILAR 209A	-	2	127
211A	DWSH	J	-	-	-	-	BSS	-	5	63
211A	GREY	DEXR	-	-	D	05	COMP PROF;CHAMFERED;DIAM15-16?	-	1	21
211A	GREY	B334	-	-	-	-	BS W FLATTENED CORDON;DKGRY;LTER CORTEX	-	1	15
211A	GREY	J	-	-	-	-	BASE FRAG	-	1	21
211A	GREY	-	-	-	-	-	BS	-	1	6
211A	ZDATE	-	-	-	-	-	ML3	-	-	-
211A	ZZZ	-	-	-	-	-	SOME 2C	-	-	-
211A	ZZZ	-	-	-	-	-	JDW RIM SIMILAR 209A	-	-	-
211	DWSH	JDW	-	2?	-	-	RIMS;ONE JOINS	214	6	167
211	DWSH	J	-	-	-	-	BSS;SOOTED	-	27	395

ACC. NO. 2002.230

Cxt	Fabric	Form	Manuf+	V	D?	Dno	Details	Link	Shs	Wt
211	SAMCG	-	-	-	-	-	FLAKE ONLY	-	1	1
211	GREY	BFBL	-	-	D	06	RIM/WALL;DIAM26	-	1	250
211	GREY	BWM	-	1	D	07	RIM/WALL;DIAM28;EVERT RIM;LITTLE NECK;JOINS	214	5	262
211	GREY	BWM	-	-	D	08	RIM/WALL;DIAM30;ABR;SQUARISH RIM	-	1	80
211	GREY	DEXR	-	-	D	09	RIM/WALL;DIAM19;JOINS	214	1	72
211	GREY	DPR	-	-	D	10	COMP PROF;DKGRY;LTER CORTEX;DIAM19	-	1	102
211	GREY	BDFL	-	-	D	11	RIM/PT WALL;DIAM20	-	1	22
211	GREY	B334	-	1	D	12	RIM/PT WALL;DIAM14	-	3	46
211	GREY	JB	-	1	-	-	BSS J;PROB X BWM	-	2	71
211	GREY	J?	-	-	-	-	BASE FRAG;STRING	-	1	8
211	GREY	-	-	-	-	-	BSS	-	4	42
211	GREY	BD	LA?	-	-	-	BASE/PT WALL;ABR;TRACES LA?	-	1	11
211	FCLAY	-	-	-	-	-	FRAG	-	1	17
211	ZDATE	-	-	-	-	-	ML3	-	-	-
211	ZZZ	-	-	-	-	-	SOME 2C SHERDS	-	-	-
214	SAMCG	D	-	-	-	-	FLAKED FTRG	-	1	5
214	GREY	BWM	-	-	D	07	BSS;JOIN	211	2	109
214	GREY	DEXR	-	1	D	09	COMP PROF;DIAM19;SAME	211	3	145
214	GREY	DPR	-	-	-	-	RIM/WALL;ANGULAR RIM;ST WALL;DIAM20	-	1	49
214	GREY	BWM	-	-	-	-	RIM ONLY;CURVE/U'CUT;DIAM36	-	1	93
214	GREY	BFL	-	-	D	13	RIM/CURVED WALL;DIAM21	-	1	40
214	GREY	BWM	-	1	D	14	RIM CURVED/U'CUT;DIAM30;DKGRY;RB CORT;ABR	-	3	110
214	GREY	D	LA	1	-	-	WALL;BASE;DKGRY	-	2	22
214	GREY	-	-	-	-	-	BSS	-	2	35
214	GREY	JCUR	-	-	D	15	RIM/SHLDR;DKGRY SANDY FAB;NOT NORMAL FB;DIAM12	-	1	19
214	DWSH	JDW	-	1	-	-	RIMS JOINING;SOOTED;JOINS	211	2	32
214	DWSH	J	-	-	-	-	BSS	-	4	45
214	ZDATE	-	-	-	-	-	ML3	-	-	-
215	CR	F?	-	1	-	-	BSS;F.FINE FAB;?FLAGON	-	2	18
215	GREY	J	-	-	-	-	BASE/WALL	-	1	26
215	ZDATE	-	-	-	-	-	ROM	-	-	-
215	ZZZ	-	-	-	-	-	NO CLOSE DATE;ML2+	-	-	-
216	MOMH?	M	-	-	-	-	BS;WORN;MOMH TRIT;SOME ?SLAG	-	1	13
216	GREY	BWM	-	-	-	-	RIM ONLY;JOINS 209;LGE CURVED/U'CUT	209	1	55
216	GREY	BDRR	-	-	-	-	RIM/PT WALL ONLY	-	1	14
216	GREY	JB	-	1	-	-	BSS;S'WICH DKGRY;RB CORT	-	3	18
216	GREY	-	-	-	-	-	BS	-	1	5
216	DWSH	J	-	-	-	-	BSS	-	3	38
216	ZDATE	-	-	-	-	-	ML3	-	-	-
215-216	DWSH	J	-	-	-	-	BSS BASE	-	4	80
215-216	GREY	-	-	-	-	-	BSS	-	2	6
215-216	FCLAY	-	-	-	-	-	FRAG	-	1	25
215-216	TILE	-	-	-	-	-	FRAG	-	1	8
215-216	ZDATE	-	-	-	-	-	M3+	-	-	-
US TR2	GREY	BWM	-	-	-	-	RIM FRAG;CURVED/U'CUT LGE	-	1	23
US TR2	GREY	-	-	-	-	-	BSS	-	3	15
US TR2	OX	CLSD	-	-	-	-	BS GRY CORE;LTRB;F.THIN WALL	-	1	2
US TR2	ZDATE	-	-	-	-	-	ML3	-	-	-

APPENDIX 3: post Roman pottery & tile report

Pottery Archive HMUM02

Jane Young *Lindsey Archaeological Services*

context	cname	full name	sub fabric	form type	sherds	weight	decoration	part	description	date
226	ELQC	East Lincolnshire Quartz and Chalk fabrics		jar?	1	4		BS	very abraded;? ID	13-15th
226	GLGS	Glazed Greensand Fabrics		large footed vessel	1	42		base	underfired;soot;abraded	13-16th
226	LMX	Late Medieval Non-local fabrics	bright oxid;fine-med sandy;hard	jug	1	24		handle	red slip;comm-abun fine-med subround quartz mod fe occ flint fe cemented sst;ppocked glaze	14-16th
226	MEDLOC	Medieval local fabrics	OX/R/OX;med sandy;hard	?	1	9		BS	com med subround quartz;very abraded;soot int ext & edges;spots of glaze; burnt ?	13-16th
226	TB	Toynton/Bolingbroke wares	H	jar/jug	1	7		BS	abraded	15-16th
226	TB	Toynton/Bolingbroke wares	F	small jug/jar	1	12		base	very abraded	15-16th
226	TB	Toynton/Bolingbroke wares	F	?	1	10		BS	abraded;underfired	15-16th
226	TB	Toynton/Bolingbroke wares	G	jug/jar	1	13		BS	abraded;int glaze	15-16th
226	TB	Toynton/Bolingbroke wares	G	jar	1	10		BS	oxid;abraded;underfired	15-16th
226	TOY	Toynton Medieval Ware	D	jug/jar	1	3		BS		13-14th
226	TOY	Toynton Medieval Ware	D	jug/jar	1	8		BS	abraded	13-14th
232	TB	Toynton/Bolingbroke wares	F & D	jug	1	7		BS	handle plug is a differrent fabric to body	15-16th

context	cname	full name	sub fabric	form type	sherds	weight	decoration	part	description	date
232	TB	Toynton/Bolingbroke wares	F	jug/jar	1	9		BS		15-16th
232	TB	Toynton/Bolingbroke wares	F	small jar	1	5		BS	int glaze;soot	15-16th
232	TOYII	Toynton Late Medieval ware	H	large jug	1	24	thum pressed strip	BS		15-16th

Tile Archive HMUM02

Jane Young *Lindsey Archaeological Services*

context	cname	full name	frags	weight	description	date
226	BRK	Brick	1	150	handmade;bright orange fabric;fine sandy	15-16th ?
226	FIRED CLAY	fired clay	2	8		?
226	PNR	Peg, nib or ridge tile	1	32	very sandy fabric with occ shelly limestone;abraded	13-16th
232	BRK	Brick	291	0	handmade;fine silty fabric; ? Salt surfacing;underfired	15-16th ?
232	BRK	Brick	1	262	handmade;fine silty fabric straw marks in fabric;semi vitrified	15-16th ?

APPENDIX 4: Environmental archaeology report

Land off Hogsthorpe Road, Mumby – HMUM02
Environmental Archaeology Assessment

Introduction

Excavations conducted by Pre-Construct Archaeology at land off Hogsthorpe Road, Mumby, uncovered archaeology relating to a number of periods. Soil samples were collected from two deposits for environmental analysis (Table 1) and during the course of the excavation a small collection of animal bone was recovered by hand.

Table 1: Samples submitted for environmental assessment

site	sample	context	vol. in l.	description	date
HMUM02	1	205	9.5	Upper fill of gully 219	Undated
HMUM02	2	209	12	Dark charcoal rich fillof ditch 206	RB

Methods

The soil samples were processed in the following manner. Sample volume and weight was measured prior to processing. The samples were washed in a 'Siraf' tank (Williams 1973) using a flotation sieve with a 0.5mm mesh and an internal wet-sieve of 1mm mesh for the residue. Both residue and float were dried and the residues subsequently re-floated to ensure the efficient recovery of charred material and mollusc shells. The dry volume of the flots was measured, and the volume and weight of the residue recorded.

The residue was sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was run through each residue in order to recover magnetised material such as hammerscale and prill. The residue was then discarded. The float of each sample was studied under a low power binocular microscope. The presence of environmental finds (ie snails, charcoal, carbonised seeds, bones etc) was noted and their abundance and species diversity recorded on the assessment sheet. The float was then bagged. The float and finds from the sorted residue constitute the material archive of the samples.

The individual components of the samples were then preliminarily identified and the results are summarised below in Tables 2 and 3.

Results

Context 205 – fill of gully 219.
This gully was interpreted on site as possibly a natural feature. The clay fill produced a small residue with a little flint and limestone, and some coarse sand and small gravel. The finds were very limited and offer no help in the dating of the feature. The only material recovered from the sample includes a single grain of wheat (Table 3), a little charcoal and a shell of the snail *Discus rotundatus*, a shade loving (Evans 1972) species.

Context 209 – fill of ditch recut 212, a secondary recut of ditch 207.
This Romano-British ditch fill was more productive. This clay deposit produced a much larger residue of pebbles and limestone gravel with concreted sediment and coarse sand. Finds included pottery, fired earth, a small fragment of a worked bone, coal, slag and several flakes

and spheroids of hammerscale (Table 2). An axially split horse metatarsal from the hand collected animal bone from this context may also have some relevance to bone working.

Table 2: Finds from the samples
32

sample	cont.	vol	residue vol in ml.	pot *	slag wt g.	fired earth wt g	ham'r scale $	coal # wt g.	glass	bone wt g.	marine shell wt g.	comment
1	205	9.5	100								<1	
2	209	12	500	½	16	8	18	4		8	1	Worked bone

(* sherd count/weight; # sorted from >7mm only; $ frequency + =1-10 or present; ++ =11-50; +++ =51-150)

The charred plant remains in the flot included a few fragments of charcoal, two grains of wheat, a possible chaff fragment, charred seeds of grasses, blinks (*Montia fontana chrondrosperma*) and docks (*Rumex* sp.), bones of cattle, frog and newt, and shell fragments of cockle (Table 3). A small assemblage of snails includes taxa of open country, shaded and aquatic habitats with *Discus rotundatus*, a woodland taxa, and *Planorbis leucostoma*, an aquatic snail found in ponds and ditches that tend to dry up (Macan 1976), being the most common.

Table 3: Environmental finds from the samples

sample	cont.	flot vol in ml.	char coal *	char'd grain *	char'd seed *	snail */#	
1	205	4	3	1		1/1	wheat, mussel, *Discus rotundatus*
2	209	5	3	1	1	2/2	wheat, grasses, blinks, docks, indet seeds, cockle, cattle, frog/toad, newt, *Carychium* sp., *Planorbis leucostoma*, *Trichia hispida*, *Discus rotundatus*, *Vertigo pygmaea*, *Oxychilus* sp.

* frequency 1=1-10; 2=11-50; 3=51-150; 4=151-250; 5=>250 items; # diversity 1=1-3; 2=4-10; 3=11-25 taxa

Animal Bone

A small collection of 82 animal bone fragments recovered by hand during the excavations was submitted for identification and assessment. The contexts from which the bone has been recovered have been variously dated to the Romano-British period, the medieval and post-medieval.

The animal bone was identified by reference to modern reference skeletons in the collection of the author and recorded directly into an ACCESS database using the recording procedures and codes routinely used by the Environmental Archaeology Consultancy. The details of these codes and the data recorded in each field are given in the key accompanying the attached Archive Bone Catalogue.

The condition of the bone is generally good although several fragments exhibit evidence of surface erosion and root etching. The identified bones includes fragments of horse, cattle, sheep, pig and dog. The bone finds are summarised in Table 4.

ACC. NO. 2002.230

The Romano-British assemblage is dominated by cattle. These include immature animals. Single bone fragments of horse, cattle and pig are butchered. The horse bone is a metatarsus chopped axially, possibly with the intention of exploiting the shaft for bone working. Three bones of cattle in context 211, a distal tibia, astragalus and calcaneum, derive from the same limb and were probably articulated when discarded.

Table 4: Frequency of fragments of each taxa by context

species	108	209	211	214	215/16	226	227	232	236
	RB?	RB?	RB?	RB?	RB?	Med/ p-m	Med/ p-m	Med/ p-m	Med?
Horse		1			1		1	2	
Cattle		3	5		3			4	2
Cattle size	1	1	2	1	4	8		4	1
Sheep/goat		3		1		6		3	2
Sheep size		2				2		1	
Pig			1		1	4		5	1
Dog			1		1	3			
Unidentified			1						

The medieval and post-medieval assemblage includes more sheep or goat bones than other species, with pig almost as frequent. Apart from pig bones there are no immature animals represented among the bones. Butchery was evident on only two bones of cattle and six fragments exhibted evidence of dog gnawing.

Discussion

The environmental sample for context 205 has yielded no useful information although the charcoal and cereal grain perhaps suggests an archaeological rather than natural feature. The presence of slag and hammerscale in context 209 indicates smithing activity in the vicinity, although the small assemblage of bone, shell, pottery and charred material suggests that most of the inclusions derive from domestic waste. A small fragment of worked bone from context 209 and the split horse metatarsus is tentative evidence, at best, for bone working at the site.

Cockle, wheat, cattle, sheep and pig are the only identified elements of the Romano-British diet, while only cattle, sheep and pig are recorded for the medieval and post-medieval deposits.

Acknowledgments

We should like to thank Jeremy Dubber for the sample processing.

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THE ENVIRONMENTAL ARCHAEOLOGY CONSULTANCY

Key to codes used in the cataloguing of animal bones and marine shells

SPECIES:

SPECIES CODE			SPECIES CODE	
MAN	human		DOVE	Dove species
EQU	Horse		FER	Feral dove
EQSZ	Horse size		PART	Partridge
BOS	Cattle		SWAN?	Swan?
BOSL	Cattle-large		WOOD	Woodcock
CSZ	cattle size		CURL	Curlew
SUS	Pig		WADE	wader
OVCA	sheep or goat		CROK	Crow or rook
OVI	Sheep		CORV	Crow or rook
CRA	Goat		JACK	Jackdaw
SSZ	sheep size		OWL	Owl indet.
FEL	Cat		BUZZ	Buzzard
CAN	Dog		GULL	Gull sp.
AUR	Aurochs			
AUR?	Aurochs?		TURD	Turdidae
CER	red deer		BIRD	Identifiable but not id'd
DAM	Fallow deer		PASS	Passerine
CLS	roe deer		LBIRD	Large bird
LEP	Hare		UNIB	Bird indet
ORC	Rabbit			
LAG	Lagomorph		FROG	Frog
CARN	Carnivore		FRTO	Frog or toad
FOX	Fox			
POLE	Polecat/ferret			
WEA	weasel		GAD	Gadid, cod family
BADG	Badger		LING	Ling
SEAL	seal		HADD	Haddock
SQU?	Squirrel?		RAY	ray
BEAV	Beaver		FISH	Fish
ROD	Rodent		UNIF	Fish indet
RAT	Rat			
AGR	Field vole		OYS	oyster
ARV	Water vole		COK	Cockle
MUS	House mouse		MUSS	Common Mussel
SORA	Common shrew		WHELK	Common whelk
MOLE	Mole		HEL	Helix aspersa
SMA	Small mammal		HELIX	Helix sp.
UNI	Unknown		HELN	Helix nemoralis
			SNAIL	snail
CHIK	Chicken			
CHKZ	Chicken size		FOSS	Fossil bone
GOOS	Goose, dom			
GOOS?	Goose, dom.?			
GSSZ	Goose size			
GSSP	Goose species			
GOSZ	Goose, poss. Wild			
DUCK	Duck, domestic sp.			
DUCK?	Duck?			
DKSP	Duck species			
DSP	Duck species indet			
MALL	Duck, dom.			
TURK	Turkey			

BONE ELEMENT:

BONE CODE		BONE CODE	
SKEL	skeleton	SCP	scapula
SKL	skull	HUM	humerus
ANT	antler	RAD	radius
ANT?	antler?	ULN	ulna
ATT	antler tine	RUL	radius and ulna
HC	horn core	C/T	carpus/tarsus
TEMP	temporal	C23	carpus 2+3
FRNT	frontal	CAR	carpus
PET	petrous	CPA	accessory carpal
PAR	parietal	CPI	intermediate carpal
OCIP	occipital	CPR	radial carpal
ZYG	zygomatic	CPU	ulnal carpal
NAS	nasal	MTC	metacarpus
PMX	premaxilla	MC1-5	metacarpus 1-5
MAN	mandible	MTP	metapodial
MNT	mandibular tooth	MPL	lateral metapodial
DLI	deciduous lower incisor	INN	innominate
DLPM1-4	deciduous lower premolar 1-4	ILM	ilium
LI	lower incisor (and 1-3)	PUB	pubis
LC	lower canine	ISH	ischium
LPM1-LPM4	lower premolar 1-4	FEM	femur
LM1-LM3	lower molar 1 - molar 3	PAT	patella
MAX	maxilla	TIB	tibia
DUI	deciduous upper incisor	FIB	fibula
UI	upper incisor (1-3)	LML	lateral malleolus
UC	upper canine	AST	astragalus
DUPM	deciduous upper premolar	CAL	calcaneum
DUPM1-4	deciduous upper premolar 1-4	CQ	centroquartal
UPM1-UPM4	upper premolar 1-4	TAR3	tarsus 3
UM1-UM3	upper molar 1 - molar 3	T4	tarsus 4
MXT	maxillary tooth	TAR	tarsus
TTH	indeterminate tooth	MTT	metatarsus
INC	incisor	MT1-5	metatarsus 1-5
HYD	hyoid	MTL	lateral metatarsus
ATL	atlas	SES	sesamoid
AXI	axis	PH1	1st phalanx
CEV	cervical vertebra (and 3-7)	PH2	2nd phalanx
TRV	thoracic vertebra (and 1-13)	PH3	3rd phalanx
LMV	lumbar vertebra	PHL	lateral phalanx
SAC	sacrum	LBF	long bone
CDV	caudal vertebra	UNI	unidentified
VER	vertebra		
STN	sternum	CLV	clavicle
CC	costal cartilage	COR	coracoid
RIB1	first rib (2 etc)	CMP	carpo-metacarpus
RIB	rib	CMC	carpo-metacarpus
		WPH1-3	wing phalanges 1-3
URO	urostyle	WPH	wing phalanx
		LSA	lumbosacrale
DENT	dentary		
CLEI	cleithrum		
RAY	fin ray		
SHELL	shell		
UV	upper valve		
VAL	valve		

NUMBER: number of fragments in the entry

SIDE: W - whole L - left side R - right side F - fragment

FUSION: records the fused/unfused condition of the epiphyses
P - proximal; D - distal; E - acetabulum; N - unfused; F - fused; C - cranial; A - posterior

ZONES: records the part of the bone present.
The key to each zone on each bone is on page 4

BUTCHERY: records whether a bone has been chopped (CH), cut (KN), worked (W), burnt (C)

GNAWING: records if a bone has been gnawed by dogs (DG), cats (FEL) or rodents (RG)

TOOTH WEAR - Codes are those used in Grant, A. 1982 The use of tooth wear as a guide to the age of domestic animals, in B.Wilson, C.Grigson and S.Payne (eds) *Ageing and sexing animal bones from Archaeological sites*, 91-108.

Teeth are labelled as follows in the tooth wear column:

Deciduous	Permanent
f ldpm2/dupm2	F lpm2/upm2
g ldpm3/dupm3	G lpm3/upm4
h ldpm4/dupm4	H lpm4/upm4
	I lm1/um1
	J lm2/um2
	K lm3/um3

MEASUREMENTS :Any measurements are those listed in A.Von den Driesch (1976) *A Guide to the Measurement of Animal Bones from Archaeological Sites*, Peabody Museum Bulletin 1, Peabody Museum, Harvard, USA

PATHOLOGICAL: A 'P' indicates that the bone fragment carries a pathology

COMMENTS: This may include a short description of the fragments, any pathologies, butchery or gnawing evidence

PRESERVATION: records the condition of the bone in the following manner

1- enamel only surviving
2- bone very severely pitted and thinned, tending to break up; teeth with surface erosion and loss of cementum and dentine
3- surface pitting and erosion of bone, some loss of cementum and dentine on teeth
4- surface of bone intact, loss of organic component, material chalky, calcined or burnt
5- bone in good condition, probably with some organic component

ZONES - codes used to define the zones on each bone

SKULL	1. paraoccipital process	METACARPUS	1. medial facet of proximal articulation, MC3
	2. occipal condyle		2. lateral facet of proximal articulation, MC4
	3. intercornual protuberance		3. medial distal condyle, MC3
	4. external acoustic meatus		4. lateral distal condyle, MC4
	5. frontal sinus		5. anterior distal groove and foramen
	6. ectorbitale		6. medial or lateral distal condyle
	7. entorbitale		
	8. temporal articular facet	FIRST PHALANX	1. proximal epiphysis
	9. facial tuber		2. distal articular facet
	0. infraorbital foramen		
		INNOMINATE	1. tuber coxae
MANDIBLE	1. Symphyseal surface		2. tuber sacrale + scar
	2. diastema		3. body of illium with dorso-medial foramen
	3. lateral diastemal foramen		4. iliopubic eminence
	4. coronoid process		5. acetabular fossa
	5. condylar process		6. symphyseal branch of pubis
	6. angle		7. body of ischium
	7. anterior dorsal acsending ramus posterior M3		8. ischial tuberosity
	8. mandibular foramen		9. depression for medial tendon of rectus femoris
VERTEBRA	1. spine	FEMUR	1. head
	2. anterior epiphysis		2. trochanter major
	3. posterior epiphysis		3. trochanter minor
	4. centrum		4. supracondyloid fossa
	5. neural arch		5. distal medial condyle
			6. lateral distal condyle
SCAPULA	1. supraglenoid tubercle		7. distal trochlea
	2. glenoid cavity		8. trochanter tertius
	3. origin of the distal spine		
	4. tuber of spine	TIBIA	1. proximal medial condyle
	5. posterior of neck with foramen		2. proximal lateral condyle
	6. cranial angle of blade		3. intercondylar eminence
	7. caudal angle of blade		4. proximal posterior nutrient foramen
			5. medial malleolus
HUMERUS	1. head		6. lateral aspect of distal articulation
	2. greater tubercle		7. distal pre-epiphyseal portion of the diaphysis
	3. lesser tubercle		
	4. intertuberal groove	CALCANEUM	1. calcaneal tuber
	5. deltoid tuberosity		2. sustentaculum tali
	6. dorsal angle of olecranon fossa		3. processus anterior
	7. capitulum		
	8. trochlea	METATARSUS	1. medial facet of proximal artciulation, MT3.
	9.		2. lateral facet of proximal articulation, MT4
	0.		3. medial distal condyle, MT3
RADIUS	1. medial half of proximal epiphysis		4. lateral distal condyle, MT4
	2. lateral half of proximal epiphysis		5. anterior distal groove and foramen
	3. posterior proximal ulna scar and foramen		6. medial or lateral distal condyle
	4. medial half of distal epiphysis		
	5. lateral half of distal epiphysis		
	6. distal shaft immediately above distal epiphysis		
ULNA	1. olecranon tuberosity		
	2. trochlear notch- semilunaris		
	3. lateral coronoid process		
	4. distal epiphysis		

Archive catalogue of Animal Bone from land off Hogsthorpe Road, Mumby - HMUM02

site	context	species	bone	no.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preservati
HMUM02	108	CSZ	LBF	1	F								SHAFT FRAGMENT	3
HMUM02	209	BOS	AXI	1	F								ANT FRAGMENT CENTRUM AND POST ZYGAPOPHYSES- 2 PIECES	4
HMUM02	209	BOS	HUM	1	R	PC	1						HEAD-FUSION VISIBLE	4
HMUM02	209	BOS	HUM	1	R	DF	67890						DISTAL HALF--CONDYLE DAMAGED- 5 PIECES	4
HMUM02	209	CSZ	MTP	1	F								SPLIT FRAGMENT OF PROX END	4
HMUM02	209	EQU	MTT	1	R		1	CH					PROX END AND PART OF SHAFT- 2 PIECES-CHOPPED AXIALLY	4
HMUM02	209	OVCA	MAN	1	F								LATERAL FRAG HORIX RAMUS- 2 PIECES	4
HMUM02	209	OVCA	RAD	1	R								DISTAL HALF SHAFT	3
HMUM02	209	OVCA	TIB	1	R								DISTAL HALF SHAFT	4
HMUM02	209	SSZ	LBF	1	F								SHAFT FRAGMENT	4
HMUM02	209	SSZ	RAD	1	F								SHAFT FRAGMENT	4
HMUM02	211	BOS	AST	1	R		1	CH					CHOPPED ACROSS ANT PROX END	4
HMUM02	211	BOS	CAL	1	R	PN	23		DG				PROX EPI LOST-PROX SL CHEWED- SAME LEG AS AST AND TIB	4
HMUM02	211	BOS	FEM	1	R	PN	3						PROX SHAFT WITH PART OF EPI- 2 PIECES	4
HMUM02	211	BOS	TIB	1	R	PNDJ	1234567						COMPLETE- 3 PIECES-SAME LEG AS CAL AND AST	4
HMUM02	211	BOS	UPM4	1	L					H12				3
HMUM02	211	CAN	FEM	1	F								SHAFT- 2 PIECES	4
HMUM02	211	CSZ	LBF	1	F								SHAFT FRAGMENT	4
HMUM02	211	CSZ	RIB	1	F								SHAFT FRAGMENT	3
HMUM02	211	SUS	SCP	1	R	DF	1235	CH			GLP-36.4 SLC-25		GLENOID-NECK AND PART BLADE- 2 PIECES-CHOPPED VENTRALLY ON NECK	4
HMUM02	211	UNI	UNI	1	F								INDET	4
HMUM02	214	CSZ	RIB	1	F								SPLIT SHAFT FRAGMENT- 2 PIECES	4
HMUM02	214	OVCA	MAN	1	R		568						ASC RAMUS WITH CONDYLE- 2 PIECES	4
HMUM02	215/16	BOS	AXI	1	F								ANT PART CENTRUM	3
HMUM02	215/16	BOS	MTT	1	F								POST SHAFT FRAGMENT	3
HMUM02	215/16	CAN	MTP	1	F	DN							SHAFT-DISTAL EPI LOST	4
HMUM02	215/16	CSZ	LMV	1	F								FRAGMENT TRANS PROCESS- 2 PIECES	3
HMUM02	215/16	CSZ	VER	1	F	AN							POST FRAGMENT OF CENTRUM	3
HMUM02	215/16	CSZ	VER	1	F	CNAN							CENTRUM FRAGMENT	3

site	context	species	bone	no.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	pres vati
HMUM02	215/16	CSZ	VER	1	F	CF							ANT CENTRUM	3
HMUM02	215/16	EQU	CAL	1	R		2						PROX AND DISTAL ENDS BROKEN OFF	3
HMUM02	215/16	SUS	HUM	1	L	DN	690				SD-10.4		DISTAL HALF SHAFT	4
HMUM02	215/216	BOS	UM1	1	L					I16				3
HMUM02	226	CAN	AXI	1	F	AF							CENTRUM	4
HMUM02	226	CAN	FIB	1	F								SHAFT FRAGMENT	4
HMUM02	226	CAN	LMV	1	F	CFAF							CENTRUM	4
HMUM02	226	CSZ	LBF	1	F								SHAFT FRAGMENT	3
HMUM02	226	CSZ	TRV	1	F								FRAG BASE SPINE	4
HMUM02	226	CSZ	UNI	1	F				DG				INDET-CHEWED	4
HMUM02	226	CSZ	UNI	4	F								INDET	4
HMUM02	226	CSZ	VER	1	F								? AND AXIS FRAG	4
HMUM02	226	OVCA	INN	1	L	EF	239		DG				ILIAL SHAFT-ANT CHEWED	4
HMUM02	226	OVCA	LM2	1	L					J12				4
HMUM02	226	OVCA	MTC	1	L		12				Bp-26		PROX HALF- 2 PIECES	4
HMUM02	226	OVCA	MTT	1	F								MIDSHAFT	3
HMUM02	226	OVCA	MTT	1	F								MIDSHAFT- 2 PIECES	3
HMUM02	226	OVCA	UM2	1	L					J12				4
HMUM02	226	SSZ	LBF	2	F								SHAFT FRAGMENT	4
HMUM02	226	SUS	FEM	1	F								SPLIT MIDSHAFT FRAGMENT	3
HMUM02	226	SUS	INN	1	L	EF	9						FRAGS ILIUM AND ISCHIUM- 3 PIECES	4
HMUM02	226	SUS	LC	1	L								MALE	3
HMUM02	226	SUS	TTH	1	F								2 PIECES	4
HMUM02	227	EQU	FEM	1	R	PF	123				DC-59		PROX HALF	4
HMUM02	232	BOS	CEV	1	F	CFAF	12345	CH					CHOPPED AXIALLY DOWN MIDDLE AND VENTRALLY	4
HMUM02	232	BOS	HUM	1	L		690		DG				DISTAL HALF SHAFT-DISTAL CHEWED OFF	4
HMUM02	232	BOS	MTT	1	F								ANT MIDSHAFT FRAGMENT	4
HMUM02	232	BOS	SCP	1	R		235		DG		SLC-49.2		GLENOID AND NECK AND PART DISTAL BLADE	4
HMUM02	232	CSZ	LBF	1	F								SHAFT FRAGMENT	3
HMUM02	232	CSZ	LMV	1	F		5						PART NEURAL ARCH	4
HMUM02	232	CSZ	RIB	1	L								PROX SHAFT FRAGMENT	4

site	context	species	bone	no.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preservation
HMUM02	232	CSZ	SCP	1	F								FRAGMENT CAUDAL MARGIN	4
HMUM02	232	EQU	LM	1	L								MED WEAR	4
HMUM02	232	EQU	MAN	1	L		6						ANGLE- 3 PIECES	4
HMUM02	232	OVCA	INN	1	R	EF	9						POST ILIAL SHAFT WITH PART ACETAB	3
HMUM02	232	OVCA	LM2	1	L					J12				3
HMUM02	232	OVCA	MTT	1	L								SHAFT- 2 PIECES	4
HMUM02	232	SSZ	LBF	1	F								SHAFT FRAGMENT-POROUS?	4
HMUM02	232	SUS	HUM	1	L		9						DISTAL SHAFT FRAGMENT	4
HMUM02	232	SUS	HUM	1	L	DF	67890				SD-17.3 BT-35.8 HT-32		DISTAL HALF	4
HMUM02	232	SUS	LMV	1	F	CNAN	4						CENTRUM	4
HMUM02	232	SUS	LMV	1	F	CFAN	24						CENTRUM	3
HMUM02	232	SUS	MAN	1	R								ANT SYMPHYSEAL FRAGMENT-LARGE	4
HMUM02	236	BOS	FEM	1	R	PF	13				DC-45.4		PART OF DISTAL END	4
HMUM02	236	BOS	HUM	1	L	DF	789	SW			BT-85 HT-50.6		DISTAL END-SAWN FROM SHAFT	4
HMUM02	236	CSZ	SKL	1	F								INDET	4
HMUM02	236	OVCA	MTT	1	R				DG				DISTAL HALF SHAFT-LARGE	4
HMUM02	236	OVCA	RAD	1	R	PF	3		DG				PROX HALF-BROAD AND LARGE-PROX END CHEWED OFF	4
HMUM02	236	SUS	RIB	1	L								PROX SHAFT FRAGMENT	4

APPENDIX 5: Archaeolometallurgical report by M Allen

A small assemblage of metallurgical waste (weighing 3.638kg) was recovered from archaeological deposits during a small-scale archaeological excavation (trench 1 and trench 2) within the village of Mumby, Lincolnshire (Table 1).

The material was almost exclusively from a single mid – late 3rd century AD (Romano-British) recut ditch, [206], and its later recut [212], that ran east – west across trench 2.

Context No.	Weight (g)	Identification	Notes
209	324g	smithing hearth bottom	from hearth wall with some evidence of hearth lining
209	172g	smithing hearth bottom	-
209	144g	smithing hearth bottom	possibly from near blowing hole (though uncertain)
209	632g	smithing pan	some coarse flint and other stone inclusions. Mainly comprises hammerscale
209	38g	smithing pan	some coarse flint and other stone inclusions. Mainly comprises hammerscale
209	38g	smithing pan	some coarse flint and other stone inclusions. Mainly comprises hammerscale
209	36g	smithing pan	some coarse flint and other stone inclusions. Mainly comprises hammerscale
209	4g	vitrified clay lining	Green/black vesicular piece with glassy surface
209	50g	undiagnostic piece	-
209	72g	undiagnostic piece	incorporating fragments of charcoal
209A	206g	undiagnostic piece	some charcoal present
209A	40g	undiagnostic piece	-
209A	10g	undiagnostic piece	-
211	344g	smithing hearth bottom	formed against blowing hole (hottest part of the hearth)
211	336g	smithing hearth bottom	-
211	264g	smithing hearth bottom	-
211	234g	smithing hearth bottom	-
211	202g	smithing hearth bottom	-
211	198g	smithing hearth bottom	-
211	182g	undiagnostic piece	-
211	58g	undiagnostic piece	-
211	20g	undiagnostic piece	-
211	12g	undiagnostic piece	-
214	128g	tap slag	Fairly viscous, not fluid. Indicates had cooled somewhat prior to tapping
214	98g	smithing hearth bottom	-
226	38g	undiagnostic piece	-
226	26g	undiagnostic piece	-

Table 1: Summary of material by context.

Context 209
Three smithing hearth bottoms (SHB's) that form within the hearth during smithing and four fragments of smithing pan are all indicative of smithing rather than smelting. A piece of vitrified clay lining was recovered from this context, with a vesicular and glassy surface. A thin white residue beneath the glassy surface may be evidence of fuel ash or salt from within the clay lining. It was not possible to tell whether the piece formed within a bloomery furnace (smelting) or a hearth (smithing), although taking the rest of the assemblage into consideration, the latter is the most plausible.

Context 209A
Three pieces of slag were recovered from this ditch fill, all were undiagnostic.

Context 211
Ten pieces of archaeometallurgical debris were recovered from this context. The material included five smithing hearth bottoms and five undiagnostic pieces. One of the SHB's had formed immediately below the blowhole in the side of the hearth.

Context 214
This context contained two pieces of readily-identifiable waste: a SHB and a fragment of tap slag. The tap slag was not particularly fluid when it formed, suggesting it had cooled somewhat before removal from the furnace.

Context 226
Two pieces of undiagnostic slag were recovered from this deposit.

Conclusions

The small size of the assemblage precludes a full analysis of ironworking at or near the site. Although twelve of the twenty seven pieces submitted for analysis were undiagnostic (Table 2), a full third of the material (nine pieces) comprised complete, or fragments of smithing hearth bottoms. These form at the base of the hearth during processing of the bloom to produce workable iron. They may be found heaped near the to the smithy, or in this case, perhaps dumped in a nearby ditch.

A further indicator of smithing within the assemblage is the presence of four lumps of smithing pan. These comprise a layer of debris, largely hammerscale, trodden down and corroded together.

The small piece of vitrified clay lining probably formed adjacent to the blowhole of either a bloomery furnace or a smithing hearth. Considering the whole assemblage though, the latter is the most likely.

The single piece of evidence for smelting within the group is a small piece of tap slag. This forms when fluid slag is tapped from the furnace during the smelt to allow the furnace to continue to function.

Type	*No of fragments*	*Total weight (g)*
Smithing hearth bottom	9	2316
Smithing pan	4	744
Tap slag	1	128
Undiagnostic	12	714
Vitrified clay lining	1	4
Total:	27	3906

Table 2: Summary of material by type.

Although the material is strongly suggestive of smithing, it is not possible to say beyond reasonable doubt whether this occurred on or near the site. Generally one would require a much larger assemblage of ferrous waste to ascertain that such processes occurred within the site environs, although the small size of the excavation should be taken into account.

Almost all the material came from a Romano-British (mid – late 3rd century AD) ditch, or its later recut, indicating the material is almost certainly of this date. Other material from this ditch included Dales Ware pottery, animal bone, fired earth, abundant charcoal, coal and hammerscale. This assemblage would appear to indicate a mix of domestic and industrial refuse was being dumped into the ditch, probably close to habitation/workshop areas.

The ferrous waste may have been created on the site, although an alternative hypothesis is the material was imported from elsewhere, possibly as metalling for a local road or track. Its recovery from a ditch, and the presence of hammerscale within the associated fills, perhaps indicates the former to be the more likely.

Two undiagnostic pieces from a medieval ditch fill (226) may be residual, possibly through truncation of the aforementioned Roman ditch.

Glossary

Hammerscale
Minute fragments of hammerslag, typically 1-3mm across. Can be spheroidal or flakes.

Smithing hearth bottom
Normally plano-convex to concavo-convex in section, and circular or oval in plan. Form at the base of the hearth during smithing.

Smithing pan
Debris concretion, largely hammerscale that has been trodden down within the working area and corroded together.

Tap slag
A dense slag, with few relatively large bubbles, that is generally grey or black in colour. Forms when hot fluid slag is tapped from the furnace.

Undiagnostic
Pieces that do not have diagnostic surfac morphology.

Vitrified clay lining
Forms around the blowing hole where the temperature in at its hottest. Often vesicular, with a glassy surface on the inner zone, and orange (oxidised-fired) on its outer parts.

M. Allen 18/07/02

APPENDIX 6: List of archaeological contexts

Context	*Type*	*Description*
Trench 1		
100	Layer	Topsoil
101	Layer	Subsoil
102	Layer	Natural (alluvial?) deposit
103	Layer	Natural boulder clay
104	Cut	Ditch cut (RB?)
105	Cut	Ditch cut (RB?)
106	Fill	Fill of ditch [104]
107	Cut	Recut of ditch [104] (RB?)
108	Fill	Primary fill of recut [107]
109	Fill	Secondary fill of ditch [107]
110	Fill	Fill of ditch [105]
111	Cut	Pit/posthole cut (IA/RB?)
112	Fill	Fill of [111]
113	Fill	Fill of ditch [105]
Trench 2		
200	Layer	Topsoil
201	Layer	Subsoil
202	Layer	Natural boulder clay
203	Cut	Ditch cut (med?)
204	Void	
205	Fill	Fill of gully [219]
206	Cut	Primary recut of ditch [207] (RB?)
207	Cut	Ditch cut (RB?)
208	Void	
209	Fill	Fill of ditch recut [212]
210	Fill	Upper fill of ditch recut [206]
211	Fill	Secondary fill of ditch recut [206]
212	Cut	Secondary recut of ditch [207]
213	Fill	Primary fill of ditch recut [206], same as (214)
214	Fill	Primary fill of ditch recut [206], same as (213)
215	Fill	Fill of ditch [207], same as (216)
216	Fill	Fill of ditch [207], same as (215)
217	Fill	Fill of ditch [207]
218	Fill	Fill of ditch [207]
219	Cut	Gully/natural feature
220	Fill	Secondary fill of [219]
221	Cut	Posthole cut, cut by [219]
222	Fill	Fill of posthole [221]
223	Fill	Primary fill of [219]
224	Layer	Redeposited topsoil layer (seals land drain 225)
225	Feature	Ceramic land drain
226	Fill	Upper fill of recut [229]

227	Fill	Secondary fill of recut [229]
228	Fill	Primary fill of recut [229]
229	Cut	Tertiary recut of ditch [203]
230	Fill	Upper fill of recut [233]
231	Fill	Secondary fill of recut [233]
232	Fill	Primary fill of recut [233]
233	Cut	Secondary recut of ditch [203]
234	Fill	Upper fill of ditch [203], same as (235), (237?)
235	Fill	Upper fill of ditch [203], same as (234), (237?)
236	Fill	Primary fill of ditch [203]
237	Fill	Upper fill of ditch [203], same as (234), (235)?
238	Cut	Primary recut of ditch [203]
239	Fill	Upper fill of ditch [203]